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Career Indecision, Negative Career Thoughts, and Vocational Interest Structure of First-Generation and Other College Students

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ABSTRACT

This study examined career indecision, negative career thoughts, and vocational interest structure of first-generation and other college students. First-generation college students (FGCS) are those students whose parents or guardians did not attend college. Research has shown that these individuals are less academically prepared for college, have more difficulty acclimating to the college environment (Choy, 2001), and are more at risk for not completing a degree, with higher attrition rates than other students (Ishitani, 2006). Career and personal motivation can predict college adjustment and persistence for FGCS (Dennis et al., 2005); therefore, career problem solving and decision making is an important task for these individuals.

The process of career decision making of college students has been a popular area of research, including career indecision, negative career thoughts, and Holland’s structure of career interests. Being undecided affects individuals’ career decision-making abilities and may influence their thinking about the career decision-making process (Saunders et al., 2000). Negative career thoughts have been correlated with anxiety (Newman et al., 1989), depression (Saunders, Sampson, Peterson, & Reardon, 2000), and self-worth (Judge & Locke, 1993). Screening for negative career thoughts and being able to address these cognitions with clients may lead to better well-being and success in college.

John Holland (1997) has written about a set of primary and secondary constructs that allow career professionals to assess an individual’s readiness for making a career decision (Reardon & Lenz, 1999) and supply counselors with additional tools for working with clients. In university student populations, low differentiation may impair one’s ability to choose a field of interest (Holland, Gottfredson, & Nafziger, 1975), high coherence may improve prediction of future occupation (Holland, Gottfredson, & Baker, 1990), and high consistency may lead to higher rates of college persistence (Wiley & Magoon, 1982).

The U.S. Census Bureau (2000) reported that, in 1999, those with a high school diploma received an average salary of $27,351, individuals with some college received an average salary of $31,988, and workers with college degrees made an average salary of $42,877. Therefore, FGCS are more likely to earn less in their lifetime because of their lower graduation rates. Post-graduation, these differences disappear. First-generation and other college graduates have similar employment rates and appear to make comparable salaries after receiving a bachelor’s degree (Nunez & Cuccaro-Alamin, 1998). With the increase in numbers of first-generation
college students entering universities (Hudson, Kienzl, & Diehl, 2007), research on the career processes of these students is warranted.

The following research questions were identified for this study:

1. What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?
2. Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?
3. What is the relationship between first-generation college student status and career decision state?

To answer these questions, data were analyzed from 243 undergraduate students enrolled in a career planning course. Participants completed the Occupational Alternatives Question to measure career indecision, the Career Thoughts Inventory to assess for negative career thoughts, and the Self-Directed Search to determine vocational interest structure. A multivariate analysis of variance (MANOVA) was utilized to test the first research question, with no significant differences emerging between first-generation college students and other students. To examine the second research question, a hierarchical multiple regression was performed to determine the unique contribution of first-generation college student status in explaining variance in each dependent variable. This regression resulted in first-generation college student status accounting for no significant variance on any dependent variables. To test the third question, a MANOVA was conducted with two levels of independent variables (first-generation and other) and two dependent variables (OAQ and Satisfaction with Choice). This analysis also resulted in no significant differences between the two groups.

A discussion of the findings, limitations of the study, and implications for research are presented. Recommendations for future research are many, as the results of this exploratory study are limited in their scope of generalizability and there is a wealth of additional research that can be conducted in order to further the knowledge of this specific population of college students.
CHAPTER 1
INTRODUCTION

The purpose of this chapter is to introduce the study, “Career Indecision, Negative Career Thoughts, and Vocational Interest Structure of First-generation and Other College Students.” This study will compare the levels of these career decision-making constructs in both first-generation and other college students. The chapter begins with an overview of the research on first-generation college students and continues with the topics of career indecision, negative career thoughts, and structure of vocational interests.

First-generation college students (FGCS) are those students whose parents or guardians did not attend college. Because these students do not benefit from their parents’ experiences in college, they are at a disadvantage when they begin their post-secondary education (York-Anderson & Bowman, 1991). Research has shown that these individuals are less academically prepared for college and have more difficulty acclimating to the college environment (Choy, 2001). Additionally, it has been reported that first-generation college students have lower educational and occupational aspirations than other students (Inman & Mayes, 1999; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Upon entering college, first-generation college students have reported lower levels of self-esteem, social acceptance, humor, and creativity than their classmates (McGregor, Mayleben, Buzzanga, Davis, & Becker, 1991).

Completion of college appears to have positive effects on first-generation students, specifically increasing their self-esteem and having a large degree of intellectual growth and career development (London, 1996; Moss, 2003). Unfortunately, these students are more at risk for not completing a degree, with higher attrition rates than other college students (Ishitani, 2006). Career and personal motivation can predict college adjustment and persistence for FGCS (Dennis, Phinney, & Chuateco, 2005). Therefore, career problem solving and decision making is an important task for these individuals.

The career decision-making processes of college students has been a popular area of research, including career indecision, negative career thoughts, and Holland’s structure of vocational interests. Some professionals have stated that career indecision should be viewed in a positive light, as open-mindedness (Krumboltz, 1992) or exploration (Hall, 1992). However, others contend that career indecision is a serious, possibly detrimental, attribute that counselors should identify and alter. Indecision may persist throughout an individual’s lifespan (Greenhaus
Most researchers agree that career indecision is multi-faceted and should be viewed in light of the individual presenting with indecision (e.g., Holland & Holland, 1977; Newman, Fuqua, & Seaworth, 1989). Being undecided affects individuals’ career decision-making abilities and may influence their thinking about the career decision-making process (Saunders, Sampson, Peterson, & Reardon, 2000).

Career thoughts are defined as “outcomes of one’s thinking about assumptions, attitudes, behaviors, beliefs, feelings, plans, and/or strategies related to career problem solving and decision making” (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b, p. 2). Negative career thoughts have been correlated with anxiety (Newman et al., 1989), depression (Saunders et al., 2000), and self-worth (Judge & Locke, 1993). Dysfunctional career thoughts can interfere with decision making and get in the way of an individual making an informed and careful career choice (Sampson, 2008). Screening for negative career thoughts and being able to address these cognitions with clients may lead to better well-being and success in college.

John Holland (1997) has written about a set of primary and secondary constructs that provide relevant insight on the nature and structure of individuals’ career interests and decision making. These constructs allow career professionals to assess an individual’s readiness for making a career decision (Reardon & Lenz, 1999) and supply counselors with additional tools for working with clients. For example, in university student populations, low differentiation may impair one’s ability to choose a field of interest (Holland, Gottfredson, & Nafziger, 1975), high coherence may improve prediction of future occupation (Holland, Gottfredson, & Baker, 1990), and high consistency may lead to higher rates of college persistence (Wiley & Magoon, 1982).

With the increase in numbers of first-generation college students entering universities (Hudson, Kienzl, & Diehl, 2007), research on the career processes of these students is warranted. The remainder of this chapter provides a statement of the problem, the research questions, and the social significance of the study.

Statement of the Problem

While we know that first-generation college students have multiple barriers and challenges to completing a college degree, the literature on the career decision making of FGCS is limited and this topic is in need of further exploration and expansion. Literature has shown that first-generation students are entering college at a higher rate than in the past, but are overrepresented in the students who fail to complete a college education. Past research has
focused on first-generation college students’ adjustment to and persistence in college and concluded that career motivation is a factor that affects their commitment to school. However, no research to date has examined the relationship between first-generation student status and constructs of career decision making. Studies have shown that career planning interventions improve retention for college students, but research has not examined whether first-generation college students are in greater need of these interventions than their other college-aged peers. This topic is potentially valuable to students, career professionals, and university personnel.

Research Questions

The following research questions were identified to address the content gaps in the literature:

1. What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?

2. Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?

3. What is the relationship between first-generation college student status and career decision state?

Social Significance of the Problem

Not completing college affects the individual, educational institutions, and society as a whole. The research on FGCS indicates that these students are more likely to drop out of college than their peers (Ishitani, 2006). The U.S. Census Bureau (2000) reported that, in 1999, those with a high school diploma received an average salary of $27,351, individuals with some college received an average salary of $31,988, and workers with college degrees made an average salary of $42,877. Therefore, FGCS are more likely to earn less in their lifetime because of their lower graduation rates. Post-graduation, these differences disappear. First-generation and non-first-generation student graduates have similar employment rates and appear to make comparable salaries after receiving a bachelor’s degree (Nunez & Cuccaro-Alamin, 1998).

Finally, insight into the career decision-making processes of FGCS and, subsequently, creating programs to improve their likelihood of staying in college is critical to ensure equal access to a population of individuals who begin college at a disadvantage. Post-secondary
institutions are feeling more and more pressure to retain their students, especially those from special populations, including ethnic minorities, those from lower socioeconomic backgrounds, and first-generation students. Colleges are being held responsible for the support services they offer their students and retention and attrition rates are very important in the assessment process. Post-secondary professionals may not be aware of the challenges faced by first-generation college students and may not know how they can impact the retention and graduation rates of these students. One effective intervention is providing career problem-solving and decision-making assistance to students at risk for attrition. Anderson (2002) found that career counseling is a successful retention tool and Folsom, Peterson, Reardon, and Mann (2002) found that students in a career planning course had higher rates of graduation than similar students who did not take the course. If FGCS differ from their non-FGCS counterparts, career counseling interventions may increase the graduation rates of FGCS and improve their quality of life.
CHAPTER 2
REVIEW OF THE LITERATURE

The purpose of this chapter is to familiarize the reader with literature related to this study. It begins with an introduction to first-generation college students, including definitions, characteristics and literature related to this specific population. The chapter continues with an introduction to the construct of career indecision, literature related to dysfunctional career thoughts, and an overview of Holland’s theory of career interest structure.

First-generation College Students

First-generation college students (FGCS) are those whose parents or guardians did not attend college. First-generation college students have reported that their generation status is something that they thought about every day while in college (Orbe, 2004). Research on FGCS has increased as higher education professionals understood that generation level may affect college entrance numbers, the ability for students to adjust to college life, and the rate of retention and graduation for students. Bartels (1995) stated that, “the research comparing students on certain demographic features (ethnicity, gender, SES) has been extensive, compared to the paucity of research on generation status differences” (p. 83). This section will contain a discussion of the prevalence and characteristics of first-generation college students. It will continue with a discussion of the relevant research on access issues, retention and attrition issues, and the effects of college on FGCS.

Prevalence

According to Chen and Carroll (2005), the National Center for Education Statistics reported that 22% of students entering postsecondary education between 1992 and 2000 were first-generation students. In 1994, the college enrollment rate of children whose parents had not gone to college was 27%, compared with 42% for individuals whose parents had some college and 71% for those whose parents had a college degree (Choy, 2001). Data from the National Center for Education Statistics Beginning Postsecondary Students Longitudinal Study indicated that in 1995, 50% of students entering college with subbaccalaureate goals and 27% of students entering four-year institutions with baccalaureate goals were first-generation college students (Hudson, Kienzl, & Diehl, 2007). In summary, a low percentage of first-generation students attend college and those who do attend account for a small percentage of all college attendees.
Characteristics

When exploring the characteristics of first-generation college students, some common themes arise. Students who are the first in their family to attend college are more likely to be ethnic minority students (Bui, 2002), specifically Hispanic or African-American (Chen & Carroll, 2005; Horn & Nunez, 2000). Additionally, they are more likely to come from lower-income families (Bui, 2002; Chen & Carroll, 2005; Hertel, 2002), speak a language other than English at home (Bui, 2002), score lower on the SAT (Bui, 2002; Riehl, 1994), have lower high school GPAs (Ramos-Sanchez & Nichols, 2007; Riehl, 1994), be less prepared for college academically (Chen & Carroll, 2005), and attend college part-time and discontinuously (Chen & Carroll, 2005).

Researchers have explored the personality characteristics of first-generation college students as well. McGregor et al. (1991) found personality differences in FGCS compared to other college students, with FGCS having lower levels of self-esteem, social acceptance, humor, and creativity. FGCS appear to be just as open to diversity and challenge as their classmates (Pascarella et al., 2004) and have been found to have the same amount of overall knowledge of college as other students (York-Anderson & Bowman, 1991). Global self-worth, job and scholastic competence, and social relationships have been found to be comparable among first-generation and non-first-generation students (McGregor et al., 1991).

Access Issues

Experiences in high school and motivations for attending college can affect individuals’ access to college. First-generation college students tend to delay entry into college (Chen & Carroll, 2005) and appear to have different reasons for attending college than do their non-first-generation counterparts. They are less likely to report reasons such as having siblings who were going to college or a desire to move out of their parents’ home. They are more likely to attend college to gain respect, bring honor to their family, to help their family financially after college (Bui, 2002), and as a means to a well-paying job (Brooks-Terry, 1988). In terms of goals for attending a community college, FGCS were more concerned with increasing self-confidence, whereas other students were more concerned with improving their GPAs in order to transfer to a four-year college (Inman & Mayes, 1999).

First-generation college students have reported different motivations for choosing a certain college. FGCS indicated that their college decision was motivated by the inability to
leave home, needing a college close to home, and desiring night classes. Also, FGCS placed more emphasis on the reputation of the college and reported a higher desire to learn certain knowledge from their specific college choice (Inman & Mayes, 1999).

The high school experiences of FGCS are different than the high school experiences of other college students. Parental involvement appears to differ beginning early, evidenced by the finding that first-generation students were less likely to choose high school programs of study with their parents (Horn & Nunez, 2000). The same study examined the high school mathematics participation and proficiency and compared that with generation status of college students. Even when they were at the highest level of math proficiency in eighth grade, students whose parents did not attend college were less likely to take any advanced math in high school and to enroll in college even if they did take advanced math classes. This difference in math participation could be detrimental to students whose parents did not go to college because this study also found that the more rigorous the high school math curriculum, the more likely first-generation students were to enroll in college (Horn & Nunez, 2000).

Retention and Attrition Issues

There have been mixed results in the research on retention and attrition among first-generation college students, with the majority of studies finding that FGCS have lower rates of graduation than their peers. Brooks-Terry (1988) reported that FGCS are overrepresented in the students who leave college during their first year. Specifically, Riehl (1994) stated that only 6.7% of non-first-generation students and 10% of FGCS dropped out after their first semester of college. In addition to their risk during and after the first year of college, Ishitani (2006) found that FGCS showed higher risks of leaving college in all four years of school. Overall, first-generation students were 1.3 times more likely to leave their institutions than were students whose parents were college educated. This study indicated that FGCS had the highest likelihood of leaving during their second year of college. The risk of departure for FGCS then decreased over the remaining years.

In a study of 516 college students, Billson and Terry (1982) found that the 261 first-generation students in their sample appeared to have greater vulnerability to attrition than their 255 continuing generation student counterparts. Chen and Carroll (2005) reported that 24% of FGCS completed a bachelor’s degree, compared with 68% of students whose parents had graduated from college. When analyzing students leaving a college, Ishitani (2006) found that
first-generation students were more likely to drop out from their first institution and never enroll in another one. Additionally, FGCS were less likely to complete their degree programs in a timely manner, being 51% and 32% less likely to graduate in their fourth and fifth years. Not all studies indicate that FGCS are more likely to leave college than other students. Pratt and Skaggs (1989) reported that first-generation students in their study were found to be more committed to their college and were equally as capable of succeeding as their non-first-generation counterparts.

Many factors are involved in retaining students in the university environment. Adjustment issues, external support, and academic experiences, and educational aspirations all contribute to retention of students in college. First-generation college students tend to differ from their peers in these areas.

Adjustment to college. College, whether it be a two-year or four-year college, represents a unique culture and first-generation students are likely to feel a sort of culture shock when they enter a higher educational setting (London, 1989; Terenzini et al., 1994). The results of this culture shock may cause first-generation students to feel isolated, anxious, and depressed. First-generation college students tend to have a more difficult time adjusting to college than their non-first-generation peers. Research has indicated that these students perceived adapting to the stresses of the college environment as more difficult than other students (McGregor et al., 1991). They struggle with issues of identity, social acceptance, and self-esteem as they work to assimilate themselves into the new environment (Lippincott & German, 2007).

On campuses with students that come from families with a college-going tradition, first-generation college students “often report a lengthy list of items that assume a new prominence: tastes and styles in clothing, food, grooming, hairdo, economic consumption patterns, music, recreation, cars, speech, and self-presentation” (London, 1996; p. 13). Exposure to the values and aspirations of higher socioeconomic students may lead them to question whether they are in the right place. These new values may cause a disconnection between an individual’s college life and home life, with feelings of loss, conflict, or disloyalty (London, 1996). Similarly, first-generation college students indicate that they feel conflicting loyalties between college and off-campus friends and family (Brooks-Terry, 1988).

Some studies have examined the predictors of successful adjustment to school. These factors include family and peer support, career and personal motivation, and self-efficacy. In a
study of ethnic minority FGCS, Dennis et al. (2005) found that the perception of family and peer resources needed was significantly related to college adjustment and achievement. Also, career and personal motivation has been found to be strongly related to college adjustment, even more than motivation stemming from family expectation (Dennis et al.). Ramos-Sanchez and Nichols (2007) reported that a higher level of self-efficacy predicted a higher level of college adjustment, but that FGCS had significantly lower levels of self-efficacy at the start and end of the freshman year. Taking a closer look at college adjustment of FGCS and their peers, value of intellectualism was a strong predictor of overall adjustment for the first-generation students and perceived support from college friends predicted overall college adjustment for the other students significantly better than for FGCS. Finally, Bartels (1995) concluded that significant predictors of college adjustment for FGCS included self-efficacy and locus of control.

Contrary to those studies, some researchers have concluded that FGCS adjust to college just as well as their non-FGCS peers. Hertel (2002) reported that there were no significant differences in college adjustment between FGCS and non-first-generation college students. Specifically, the groups were equal on academic or personal-emotional adjustment, but FGCS did report significantly less social adjustment. Bartels (1995) also found no significant difference in overall college adjustment between FGCS and other students.

Social integration and family support. First-generation college students have reported being less knowledgeable about the social environment at a university (York-Anderson & Bowman, 1991; Bui, 2002) and studies found that they had fewer non-course-related interactions with peers in their third year of college (Pascarella et al., 2004). FGCS experience multiple forces that pull them from the college setting, including part-time jobs that restrict campus activity (Brooks-Terry, 1988). FGCS have reported a higher level of noncollege enrolled friends (Hertel, 2002) and are less likely to join fraternities or sororities (Pratt & Skaggs, 1989). Additionally, FGCS are less likely to live on campus, are involved in lower levels of extracurricular activities, and work significantly more hours (Pascarella et al.; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Overall, first-generation students feel less socially accepted in the college environment (McGregor et al., 1991). Regarding support, some studies have found FGCS to have less family support (Bartels, 1995; York-Anderson & Bowman, 1991), while another study (Hertel, 2002) reported that FGCS felt just as much on and off campus support as non-first-generation students.
Academic experiences and outcomes. Riehl (1994) found that first-generation students scored lower in first-year college performance and Pascarella et al. (2004) concluded that FGCS had lower grades through the third year of college. Additional research in academic outcomes has shown that, when compared to other students, first-generation college students: (a) took fewer classes in the social sciences, arts and humanities, and technical/preprofessional areas; (b) completed significantly fewer credit hours; (c) were less likely to participate in an honors program; and (d) made smaller first-year gains in reading comprehension (Pascarella et al.; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). FGCS have reported being less prepared for college, more worried about financial aid, and fearful of failing in college (York-Anderson & Bowman, 1991; Bui, 2002).

Additionally, first-generation students have reported that they had to put more time into studying than other students (Bui, 2002). When FGCS were compared with students whose parents earned a bachelor’s degree or higher and students whose parents possessed only some college experience, Hellman (1996) reported that FGCS had lower academic self-efficacy than students whose parents graduated from college, but did not differ from those whose parents attended but did not complete college. FGCS were found to have higher levels of internal locus of attribution for college success and preferred higher-order cognitive tasks. In addition, first-generation students appear to derive greater educational benefits from being engaged in academic and classroom activities than their classmates (Pascarella et al., 2004). Another difference appears to be in the prediction of good grades, with first-generation students’ GPA being predicted by leadership skills and non-first-generation students’ GPA being predicted by academic confidence. In this study, Strage (1999) found that teacher rapport was associated with good grades in both groups.

Educational aspirations. There appears to be a difference in the educational aspirations of first-generation college students compared to other students. When surveyed during college, FGCSs had significantly lower levels of end-of-second- and end-of-third-year degree plans (Pascarella et al., 2004). Pratt and Skaggs (1989) reported that 48.5% of first-generation students aspired to a graduate degree, compared to 60.6% of continuing-generation students. However, that was the only difference observed between the groups with respect to goal commitment. Inman and Mayes (1999) asked community college students about their ultimate educational goals and found differences between the groups. Almost twice as many FGCS (27.2%) as non-
first-generation students (14.9%) reported that a two-year degree was their ultimate goal. When examining the predictors of FGCS attaining educational aspirations, McCarron and Inkelas (2006) found that parental involvement was a predictor, but the strongest predictor was the student’s perception of the importance of good grades. Sixty-two percent of the total sample of FGCS did not attain their original educational aspirations within eight years of completing high school.

Effects of College

A few studies have examined the effects of college on first-generation students and have found them to be positive. London (1996) reported that the most common change experienced by FGCS was an increase in self-esteem with a growing sense of competence and mastery. When asked what caused these changes, FGCS referred to “the caring attention of at least one teacher, to a specific academic program, or to facets of their college’s culture” (London, 1996; p. 12). Moss (2003) reported that FGCS who were graduating seniors experienced a greater degree of intellectual growth and career development than their peers, but research has not determined if this is an outcome of generation status or some other variable.

Conclusion

In summary, first-generation college students are a population of individuals with specific personal and academic characteristics. The number of first-generation students entering college continues to rise, but these students are overrepresented in those who leave college before graduating. First-generation college students have a more difficult time adjusting to college, lower educational aspirations, and less external support than their classmates. Attending and persisting in college appears to have positive effects on FGCS, including increasing their self-efficacy and value of intellectualism.

Career Indecision

Career counselors at post-secondary institutions attempt to facilitate the career decision-making processes of their students, which includes identifying those who are not able to make a decision about their major or future occupation. There are many definitions of career indecision, most including how indecision affects career choices. Chartrand and Robbins (1990) stated that career indecision is the uncertainty that inhibits the act of selecting a career or implementing career plans. Tokar, Withrow, Hall, and Moradi (2003) defined career indecision as “the inability to select and commit to a career choice” (p. 3) and, according to Gati, Krausz and
Osipow (1996), career indecision refers to those people who experience problems in career decision making. Osipow (1999) posited that career indecision is an ongoing process as a decision is made, is implemented, becomes obsolete, and leads to the need to make another decision, which results in new indecision.

In 1988, Slaney summarized the literature on career indecision, concluding that, “career indecision is a common concern for young adults” (p. 33-34) and studies examining the differences between decided and undecided young adults are inconsistent in their findings. Some studies suggest that there are no clear differences between these groups, while others conclude that there are differences, especially in personality factors, that tend to favor decided students. A review of the literature on career indecision follows below.

In 1970, Appel, Haak, and Witzke reported six characteristics of undecided students that were associated with decision-making behaviors. These factors were concerned with self-identity, data-seeking orientation, generalized anxiety, humanitarian orientation, multiplicity of interests, and situation-specific anxiety. In another study, Taylor (1982) administered measures of fear of success, locus of control, and career indecision to undergraduate students. Results indicated that college students who were undecided were more fearful of success, more external in their locus of control, and had lower ACT scores than decided students.

More recently, career decidedness has been positively correlated with personal constructs such as self-efficacy (Betz, Klein, & Taylor, 1996), life satisfaction, agreeableness, and conscientiousness (Lounsbury, Tatum, Chambers, Owens, & Gibson, 1999), as well as negatively related to neuroticism (Lounsbury et al., 1999). The quality of the relationships with parents and peers has been correlated with career indecision (Felsman & Blustein, 1999), and Guay, Senécal, Gauthier, and Fernet (2003) concluded that individuals who have peers and parents who support their autonomy have higher levels of confidence in career decision making. Additionally, students with peers who were controlling had low levels of self-efficacy and autonomy in career decision making. Other correlates of career indecision include rational decision-making style (Mau, 1995), level of ego identity (Cohen, Chartrand, & Jowdy, 1995), and adolescents’ identity status, with indecision correlating positively with those in the moratorium, diffusion, and foreclosure states and negatively with those with an achievement identity status (Vondracek, Schulenberg, Skorikov, Gillespie, & Wahlheim, 1995).
Germeijs and DeBoeck (2003) conducted a factor analysis on the construct of career indecision. Of three factors, information, valuation, and outcomes, only two, valuation and outcomes could predict career indecision. They concluded that individuals who were uncertain about the outcomes of a career decision were more likely to be career undecided. Also, when one’s goals are unclear or one’s values are not satisfied by their career alternatives, they are more likely to have higher career indecision. Another study found that high indecision participants scored lower in social ascendancy and leadership potential. In addition, the high indecision group participants were more likely to resist social rules, norms, and expectations (Newman, Gray, & Fuqua, 1999). Finally, in a study of college attrition, Lounsbury, Saudargas, and Gibson (2004) found a significant negative relationship between career decidedness and intention to withdraw from college.

In a study of undergraduate students, vocational identity, state and trait anxiety, locus of control, depression, and dysfunctional career thoughts were all significantly associated with the state of career indecision and with each other. The authors proposed a two factor approach in which negative career thoughts, coupled with a weak vocational identity yield a high state of career indecision (Saunders et al., 2000). Because there are various definitions of career indecision, for the purposes of this study, career indecision will be defined as “the inability to select and commit to a career choice” (Tokar et al., 2003, p. 3).

**Career Decision States**

Many researchers in the field of vocational psychology have described different types, or states, of career indecision. It is believed that distinguishing different career decision states allows career counseling professionals to better understand clients and make intervention choices based on the type of individual with whom they are working.

Dysinger (1950) labeled two types of career indecision: developmental indecision and chronic indecision. Those with developmental indecision may only need information about the world of work in order to make a career decision, whereas those who have chronic indecision may have information, but are too anxious about their choices to make a decision. One study (Cohen et al., 1995) indicated that chronically undecided individuals had higher levels of identity confusion and feelings of inferiority than those who were developmentally undecided. Additionally, decided individuals reported less control and more autonomy support from their
peers and less control from their parents than individuals in a chronically undecided group (Guay, Ratelle, Senecal, Larose, & Deschenes, 2006).

Cognitive information processing theory (CIP; Peterson, Sampson, & Reardon, 1991; Sampson, Reardon, Peterson, & Lenz, 2004) presents three categories of decided, undecided, and indecisive decision states. Decided individuals have made a commitment to a specific occupational choice. There are three subcategories of decided individuals (Sampson et al., 2004, p. 82):

1. Confirmation – individuals who are able to specify a choice but wish to confirm or clarify the appropriateness of their choice by contrasting it with other possible choices
2. Implementation – individuals who are able to specify a choice but who need help in implementing their choice
3. Conflict avoidance – individuals who have made a public commitment to a specific choice as a strategy for avoiding conflict with significant others but who are actually undecided or indecisive

The second type, undecided, is characterized by not having made a commitment due to gaps in the knowledge needed to choose. There are also three types of undecided individuals (Sampson, et al., p. 82-83):

1. Deferred choice – individuals who are unable to specify a choice but have no need to make a choice at the present time
2. Developmental – individuals who need to choose, are unable to commit to a choice, and who lack self-, occupational, and/or decision-making knowledge
3. Multipotential – individuals who have the characteristics of someone who is undecided, with the addition of having an overabundance of talents, interests, and opportunities

Finally, indecisive individuals have not made a commitment and have a maladaptive approach to problem solving that is accompanied by a dysfunctional level of anxiety.

In a literature review of 15 studies of career indecision, Virginia Gordon (1998) extrapolated seven categories of career decidedness states. Very decided individuals have made a decision and are consistently comfortable with that decision. Somewhat decided individuals have made a decision, but have some doubts or discomfort with their decision. The unstable decided type of individual exhibits high goal instability and high levels of anxiety. Tentatively
undecided people can identify occupational options and are close to making a decision. The developmentally undecided individuals are likely to make a decision after normal maturation. Seriously undecided individuals have high levels of anxiety because they have not made a decision and often rely on others to control the choice process. The last category, chronically indecisive, represents those who have high levels of anxiety and doubt, which inhibits their ability to make a decision. In addition to investigations on the various states of career decidedness, a few researchers have explored the concept of satisfaction with one’s career choices.

*Career decidedness and satisfaction.* Individuals’ state of career decidedness can be conceptualized in terms of their satisfaction with their career choice. In a study of over 3000 university freshmen, Duffy and Sedlacek (2007) examined the differences between those who were searching for a career calling and those who reported the presence of a calling. These researchers found that students who reported the presence of a calling had higher career decidedness and career choice comfort, whereas those searching for a calling had lower levels of decidedness and comfort with their career choice. In addition, satisfaction with occupational choice was negatively correlated with career decision-making difficulties in college students (Kleiman et al., 2004) and father’s level of education in high school females (Holland, Gottfredson, & Nafziger, 1975).

*Negative Career Thoughts*

The variable of career thoughts can be best understood in the context of cognitive information processing theory (CIP; Peterson, Sampson, & Reardon, 1991; Sampson et al., 2004). This approach to career problem solving and decision making is the theory on which the construct of dysfunctional career thoughts is based.

*Cognitive Information Processing Theory*

CIP theory (Sampson et al., 2004) provides a way in which individuals can organize the decision-making process. The aims of the CIP approach are to help individuals to make informed and careful career choices, while learning to improve problem-solving and decision-making skills (Sampson et al.). CIP theory is based on four assumptions (Sampson et al.):

1. Career problem solving and decision making involve individuals’ emotions and thoughts.
2. Effective career problem solving and decision making involve knowing the content of
career choice and a process for thinking about that knowledge.
3. What individuals know about themselves and the world is constantly evolving and
interacting.
4. Career problem solving and decision making are skills that can be improved upon
through learning and practice.

This theory presents a model of what is involved in making a decision and how decisions
are made. The CIP approach is built on two core constructs: (a) The Pyramid of Information
Processing Domains and (b) the CASVE cycle. The Pyramid of Information Processing
Domains includes knowledge domains that are needed for clients to make decisions (self and
options), a decision-making skills domain, and an executive processing domain. Self-knowledge
includes one’s knowledge of values, interests, and skills; options knowledge includes one’s
knowledge of occupations and possession of a schema for the organization of the world of work.
The decision-making skills domain includes the generic information processing skills through
which individuals make decisions. The CASVE cycle (described below) is an example of an
approach to problem solving and decision making. Finally, the top of the pyramid includes
executive processing, which consists of monitoring and control of cognitions, self-awareness of
cognitions, and self-talk. This domain affects all of the other domains in the Pyramid of
Information Processing Domains.

The CASVE cycle is a model of the process of decision making that is conceptualized as
having five phases. In the Communication phase, individuals acknowledge that there is a gap
between where they are and where they wish to be. The Analysis phase involves individuals
having knowledge of themselves and their options, their approach to decision making, and their
cognitions about the decision-making process. In the Synthesis phase, individuals merge their
knowledge of self and options to expand and narrow their list of options. The Valuing phase
consists of examining one’s options in relation to their impact on the individual, significant
others in one’s life, one’s cultural group, and community or society at large. In this phase clients
choose a first choice of their options and move into the Execution phase. It is here that
individuals take action on their choice and return to Communication to determine whether they
made a satisfying choice.
Research on the usefulness of CIP theory has provided positive results. Reed et al. (2000) found that students in an undergraduate career planning course based on the CIP approach showed a reduction in their levels of dysfunctional thoughts from the beginning to the completion of the course. In addition, in studies of students enrolled in a CIP-based career planning course with those not enrolled, enrolled minority students took fewer credit hours to graduate, enrolled females graduated in fewer months (Folsom, Peterson, Reardon, & Mann, 2002), and enrolled students had fewer course withdrawals prior to graduation (Folsom, 2000).

Dysfunctional Career Thoughts

Practitioners and researchers in the field of counseling continue to be interested in the influence of cognitions on clients’ decision making and behaviors. Dysfunctional career thoughts have been studied and found to be related to emotional states, including depression (Saunders et al., 2000), anger (Strausberger, 1999), and anxiety (Newman et al., 1989). These emotional states may interfere with a client’s ability to make satisfactory decisions. Similarly, Kilk (1997) concluded that there is a relationship between high levels of dysfunctional career thoughts and the inability to choose a college major.

Dysfunctional career thoughts were found to be related to neuroticism and coping strategies in a sample of undergraduate students (Reed, 2005) and have been positively correlated with perfectionism (Osborn, 1998). There is evidence that negative career thoughts are related to reduced levels of self-worth and subjective well-being, as well as lowered job satisfaction and performance (Judge & Locke, 1993). Lustig and Strauser (2002) examined the concept of sense of coherence, which is the global orientation that the world is comprehensible, manageable, and meaningful, as it related to dysfunctional career thoughts. The results indicated that individuals who reported a strong sense of coherence had lower levels of dysfunctional career thoughts.

Although dysfunctional career thinking cannot be directly measured, the Career Thoughts Inventory (CTI; Sampson, Peterson, Lenz, Reardon, & Saunders, 1996a) was created to assess the nature of an individual’s career thoughts. On the CTI, individuals can endorse test items that reflect dysfunctional career thoughts. The Career Thoughts Inventory and its design and performance will be discussed in Chapter Three.
Holland’s Theory and the Self-Directed Search

This section will provide an overview of Holland’s theory of personality and environment and conclude with a discussion of the primary and secondary constructs.

Holland’s Theory of Personality and Environment

Holland (1997) proposed a theory explaining how people make vocational choices and what personal and environmental factors contribute to vocational achievement. There are eight basic concepts of Holland’s theory; four key assumptions (Holland, 1997) and four additional propositions (Spokane, Luchetta, & Richwine, 2002). The assumptions are:

1. Most people can be categorized as one of six personality types: Realistic, Investigative, Artistic, Social, Enterprising, or Conventional (RIASEC; see Figure 1).
2. Environments can also be categorized as one of the six RIASEC labels. These environments may be occupations, leisure activities, or training programs.
3. People seek out environments which allow them to exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.
4. Individuals’ behavior is determined by the interaction between their personality and the characteristics of their environment.

The four additional propositions include:

5. People find environments reinforcing and satisfying when the environment resembles their personality (congruence).
6. Congruence encourages stability of human behavior, whereas incongruence stimulates change in behavior.
7. Individuals resolve incongruence by searching for congruent environments or by changing personal behavior and perceptions.
8. Reciprocal interactions of people and their jobs usually lead to a series of success and satisfaction cycles.

From these assumptions, the theory posits that by pairing persons and environments, one can predict vocational choice, vocational stability and achievement, and personal stability.
Figure 1. Holland Hexagon of person and environment types.

**Primary and Secondary Constructs**

Holland’s (1994) Self-Directed Search (SDS) has been used since 1972 to measure interests and abilities as they relate to career choice. The theory includes primary constructs of personality type and congruence and secondary constructs of coherence, commonness, consistency, differentiation, and profile elevation. These constructs can be determined from an individual’s SDS results. The primary and secondary constructs of the SDS can provide valuable information about a client’s career situation, including knowledge and decision-making readiness (Reardon & Lenz, 1999). These indices of interest structure can shed light on why a client may be experiencing career decision-making difficulty. While research results on these constructs vary, the literature better supports the primary constructs than the secondary constructs (Reardon & Lenz, 1998).

**Personality types.** The six RIASEC personality types of Holland’s theory have been explained in terms of: preferences for occupations and activities, values, self-identity, perceptions by others, and what they tend to avoid. An explanation of the six person and environment types can be found in Holland (1997). An individual’s personality type can be determined through self-expression of interests, values, and vocational aspirations, or by deriving assessed interests from the Self-Directed Search.

**Congruence.** Congruence is the compatibility of an individual’s resemblance to an environment (Holland, 1997). On the SDS, congruence refers to the relationship of clients’ SDS Summary Code and their daydreams code. High congruence may indicate that clients are thinking systematically about their career decision (Reardon & Lenz, 1999). Additionally, when first-letter codes of the current occupational aspiration and the SDS are the same, a person is
likely to maintain that aspiration over time (Holland, Powell, & Fritzsche, 1994). Congruence is related to academic achievement, satisfaction with college (Allen, 1996; Nafziger, Holland, & Gottfredson, 1975), and stability of career choice (Villwock, Schnitzen, & Carbonari, 1976).

Studies of congruence also indicated that this construct is associated with job satisfaction (Meir & Tzadok, 2000), as well as satisfaction with specific characteristics of jobs, such as income, fringe benefits, promotion opportunities, and job security (Elton & Smart, 1988). Other correlates of congruence include job performance (Meir & Navon, 1992), work quality (Fritzsche, Powell, & Hoffman, 1999), the Agreeableness factor on the NEO-PI-R (Kieffer, Schinka, & Curtiss, 2004), and organizational commitment (Pazy & Zin, 1987). Finally, studying employees from 11 companies in Great Britain, Furnham, Toop, Lewis, and Fisher (1995) found there was more person-environment congruence and satisfaction among managers than non-managers. For a comprehensive analysis of the research on congruence, see Spokane (1985) and Spokane, Meir, and Catalano (2000).

**Coherence.** Coherence of aspirations is defined as “the degree to which the codes of an individual’s occupational daydreams belong in the same RIASEC category” (Reardon & Lenz, 1998, p. 64). Individuals can have high, average, or low levels of coherence, calculated by examining the first three aspirations listed. Using practical experience with the SDS, Reardon and Lenz (1999) suggested that low coherence may indicate that clients are confused about occupations, their own interests, or how occupations and interests are related. Research has shown coherence to be related to prediction of vocational choice (Holland, Gottfredson, & Baker, 1990) and female offender status (Railey & Peterson, 2000).

**Commonness.** Commonness refers to the frequency with which an individual’s code is observed in the overall population. More common codes are associated with higher stability of occupational choice (Reardon & Lenz, 1998). This secondary construct has not received the breadth of research as the other indices of interest structure.

**Consistency.** Consistency is the degree of relatedness within a person or environment of the first two letters in a Holland code (Holland, 1997). On the Self-Directed Search, consistency is operationalized by examining the first two letters in a client’s three letter Summary Code. High consistency may correlate with a more stable work history and career choice trajectory (Reardon & Lenz, 1998). Wiley and Magoon (1982) examined the consistency (measured by the SDS), GPA, and persistence of 211 college students to determine any relationship between
consistency and academic achievement. Students with high and medium consistency persisted in college at a higher rate than low consistency participants. Additionally, those with higher levels of consistency had higher cumulative GPAs. Other studies have found consistency to be related to stability in major (Barak & Rabbi, 1982) and career choice (Villwock et al., 1976), information seeking (Aiken & Johnston, 1973), and achievement in college (Barak & Rabbi). Consistency has also been found to be positively related to job satisfaction (Peiser & Meir, 1978), employment stability (Gottfredson & Lipstein, 1975), and congruence between interests and expressed chosen career (Holland et al., 1975). Finally, O’Neil, Wiley, and Magoon (1978) found consistency in Investigative college males to be a reliable predictor of actual career and graduate school entry, as well as ideal and projected career choices over a seven-year period.

**Differentiation.** The concept of differentiation is the level of distinctness of a client’s occupational profile (Reardon & Lenz, 1998). An individual who has similar scores across all RIASEC types is less differentiated than one who resembles only one type. Gottfredson and Holland (1990) found a negative relationship between differentiation and job persistence and work satisfaction, and Buchanan (1997) reported a positive correlation between differentiation and person-environment congruence. One study reported that high school students with a moderate level of differentiation showed a significantly higher likelihood of having a positive post-high school job placement (McDaniel, 2003). Earlier studies found differentiation to be positively associated with academic outcomes, including GPA (Frantz & Walsh, 1972), academic aptitude (O’Neil, 1977), and higher English and social sciences scores (Erwin, 1987). In addition, differentiation is significantly related to stability of career choice (Holland, 1968), and effective decision making (Holland et al., 1975).

**Profile elevation.** Finally, profile elevation (PE) is defined as the sum of the six RIASEC scores across all sections of a client’s SDS (Fuller, Holland, & Johnston, 1999). The construct of profile elevation has been examined in relation to various facets of personality. In one study of profile elevation, individuals with high PE were more likely to have an expressive, enthusiastic, or impulsive style and low PE individuals reflected the opposite (Gottfredson & Jones, 1993). High profile elevation scores have been correlated with conscientiousness, openness to experience, extroversion (Fuller et al., 1999; Holland, Johnston, & Asama, 1994), and lower depressive personality traits (Fuller et al.). Holland et al. (1994) also found that men with higher PE scored lower on a Neuroticism scale. In a recent study of college students, Bullock and
Reardon (2008) found a significant positive relationship between profile elevation and the constructs of openness, conscientiousness, and extroversion on the NEO-FFI (Costa & McCrae, 1992). The results also indicated that the high-low calculation of differentiation and the construct of consistency had a direct relationship with interest profile elevation and the Iachan calculation of differentiation had an inverse relationship with interest profile elevation. In addition, this study found that college-aged males had significantly higher levels of profile elevation than females. Buchanan (1997) found that profile elevation significantly contributed to the prediction of person-environment congruence and job satisfaction. Finally, Bullock and Reardon (2005) suggest that “this general factor measured by profile elevation may reveal the client’s energy level. In other words, profile elevation may indicate the level of energy a person has to give to the career decision-making process” (p. 182).

Career Indecision, Negative Career Thoughts, and Vocational Interest Structure

In a study of vocational high school students, Conneran and Hartman (1993) found that males and females with chronic career indecision had lower levels of congruence on the SDS. Among the male students, those with chronic indecision also had lower differentiation scores. Other studies have found relationships between career indecision and some indices of vocational interest (Lancaster, 2006; Lent, Brown, & Larkin, 1987). In a study of undergraduate students, Chartrand, Camp, and McFadden, (1992) found that incongruence was a significant predictor of career indecision. In addition, studies have found correlations between dysfunctional career thoughts and career indecision, with those who have more negative thinking being less decided. Among a sample of over 600 college students, Chang (2007) reported that dysfunctional career thoughts, measured by the Emotional and Personality Career Difficulties Scale (Saka, Gati, & Kelly, in press), predicted career indecision and career commitment anxiety. Saunders and her colleagues (2000) concluded that an absence of dysfunctional career thoughts allows individuals to integrate self-knowledge and occupations knowledge in order to make more organized decisions.

In a study examining the relationship between scores on the SDS and Career Thoughts Inventory (Wright, Reardon, Peterson, & Osborn, 2000) no significant correlations were found between CTI scale scores and SDS secondary construct scores. The authors concluded that there was no significant relationship between indices of vocational interest structure and dysfunctional career thoughts, although the results did indicate that individuals with specific SDS codetypes
differed on the CTI. Clients with high Realistic scores had lower Commitment Anxiety scores and higher Decision-Making Confusion scores and those with high Enterprising scores had higher Commitment Anxiety and lower Decision-Making Confusion scores.

Critical Analysis of the Literature

As previously outlined, first-generation college students have received much attention by researchers, as have the constructs of career indecision, negative career thoughts, and indices of vocational interest structure. However, there is no research that examined these vocational constructs within the population of first-generation college students. Bui and others have researched the financial and social-emotional needs of FGCS, but authors have failed to examine the career development needs of first-generation students. Despite the array of research confirming that FGCS do not graduate as often or as quickly as their peers, and despite the assertions that career development interventions improve retention, the construct of career decision making has not been adequately addressed with FGCS. Research has shown that first-generation college students differ from their non-first-generation counterparts, but there is limited research comparing the effects of college on these groups of students. Studies have not examined the career development processes and outcomes of first-generation college students, as compared to their peers.

Researchers in the field of career development and vocational psychology have shown interest in Holland’s theory of personality and career choice, with numerous studies examining the primary and secondary constructs within the theory. The earlier literature review cited studies that found correlations between indices of vocational interest structure and effective decision making, stability of career and major choice, and persistence in college. However, these constructs have not been examined in first-generation students, who have higher degrees of attrition. The constructs of congruence, consistency, differentiation, and profile elevation are not included in the literature on first-generation college students.

Dysfunctional career thoughts can impede an individual’s ability to initiate and sustain the career decision-making process. Studies have shown that negative career thoughts, as measured by the Career Thoughts Inventory, are correlated with perfectionism, depression, anxiety, anger, coping strategies, and low job satisfaction. Although there have been mixed results, some studies have concluded that FGCS have lower self-esteem and poorer adjustment to college than other students. Looking at the literature, research examining negative career
thoughts in first-generation students appears warranted, but such research has not been conducted. These students, who appear to have lower self-efficacy and an inability to cope with the adjustment to college, may also have negative career thoughts, which affect their career decision-making abilities.

**Research Questions**

Given the above gaps in the literature, the following research questions were identified for this study:

1. What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?
2. Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?
3. What is the relationship between first-generation college student status and career decision state?

**Operational Definition of Terms**

**First-generation College Students**

Students whose parent(s) or guardian(s) did not attend college.

**Other College Students**

Students whose parent(s) or guardian(s) attended, but may not have completed, college.

**Career Indecision**

“The inability to select and commit to a career choice” (Tokar et al, 2003, p. 3).

**Career Decision State**

Individuals’ level of career decidedness combined with their level of satisfaction with their first occupational choice.

**Negative Career Thoughts**

Thought processes that can “impair an individual’s ability to solve career problems and to make career decisions” (Sampson et al., 1996b, p. 2).

**Structure of Vocational Interests**

**Congruence**

The relationship of a client’s Summary Code and the Daydreams Code from the SDS
Consistency
The relationship of the first two letters in an individual’s Summary Code on the SDS

Differentiation
The level of distinctness of an individual’s occupational profile on the SDS

Profile Elevation
The sum of the six RIASEC scores across all sections of an individual’s SDS
CHAPTER 3
METHODOLOGY

This exploratory study investigated the relationships among first-generation college student status, career indecision, dysfunctional career thoughts, and structure of vocational interests. Procedures used to investigate these relationships are described in this chapter, including hypotheses related to the research questions, research design, participants, operationalization of variables, measures, and data analysis.

Research Questions and Hypotheses

Research Question 1

What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?

Hypothesis 1a

First-generation college students will have higher levels of career indecision than other students.

Hypothesis 1b

First-generation college students will have higher levels of negative career thoughts than other students.

Hypothesis 1c

First-generation college students will have lower scores on indices of vocational interest structure (congruence, consistency, differentiation, and profile elevation) than other students.

Research Question 2

Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?

Hypothesis 2a

First-generation college student status will contribute to career indecision among college students enrolled in a career planning course.

Hypothesis 2b

First-generation college student status will contribute to negative career thoughts among college students enrolled in a career planning course.
**Hypothesis 2c**

First-generation college student status will contribute to the structure of career interests (congruence, consistency, differentiation, and profile elevation) among college students enrolled in a career planning course.

**Research Question 3**

What is the relationship between first-generation college student status and career decision state?

**Hypothesis 3**

There will be a relationship between first-generation college student status and career decision state.

**Research Design**

This study utilized a criterion group design to investigate the relationships between first-generation student status, career indecision, negative career thoughts, and structure of vocational interest. The criterion for inclusion in the first-generation college student group is that a student’s parent(s) or caretaker(s) did not attend college. The criterion for inclusion in the other college student group is that a student’s parent or caretaker did attend college.

**Participants**

**Sampling**

The study utilized a criterion sample collected from a large university’s undergraduate career planning course. The career course examined in this study has been in existence since 1973 (Peterson, Sampson, & Reardon, 1991). Originally, the course was a series of career seminars, eventually developed into a formal three credit hour course led by staff in the university’s counseling center and the career placement center. Instructional systems specialists further developed and improved the course design and integrated multimedia career development resources available through the career resource center. In 1984, the conceptual base of the course changed to include a systems approach, and in 1993, a foundation in cognitive information processing (CIP) theory was added. The present course is based on CIP theory (Peterson, Sampson, & Reardon, 1991; Sampson, Reardon, Peterson, & Lenz, 2004), which is incorporated into the text, *Career Planning and Development: A Comprehensive Approach* (Reardon, Lenz, Sampson, & Peterson, 2009). Students are often referred to the course by faculty, parents, academic advisors, career center staff, or friends after expressing a lack of
direction in life. Based upon statements made on previous student data sheets, students enroll themselves in the course for a variety of reasons, most prominently to resolve career planning problems such as major choice, occupational choice, or transition to the world of work. Data for this study were obtained from the fall 2007 and spring 2008 semesters.

**Population**

The population to which the findings, discussion of the findings, and the implications of the research will be generalized consists of college students enrolled in an undergraduate career planning course. Students in this population may be at various stages of career decision making and at all levels of class standing (i.e., freshman, sophomore, junior, and senior).

**Characteristics of the Participants**

The sample population consisted of 267 undergraduate students enrolled in approximately 10 sections of an introductory career development course during the fall 2007 and spring 2008 semesters at a large, southeastern research university. Twenty-four cases were removed due to missing data on one or more variables. Therefore, 243 total participants were included in the data analysis. Deletion of these participants did not produce any noticeable differences on the descriptive statistics. Participants consisted of 83 (34.2%) first-generation college students and 160 (65.8%) other students. The sample included 123 (50.6%) females and 120 (49.4%) males. The self-identified ethnic composition of the group was 51 (21.0%) African-American, 3 (1.2%) American Indian, 4 (1.6%) Asian-American, 159 (65.4%) Caucasian, 15 (6.2%) Hispanic-American, 8 (3.3%) Other, and 3 (1.2%) preferred to not respond. The sample ranged in age from 18 to 38 with a mean age of 20.91. Regarding academic class, the sample included 23 (9.5%) freshmen, 55 (22.6%) sophomores, 36 (14.8%) juniors, and 129 (53.1%) seniors.

The demographics of the final sample are compared to the university undergraduate population in Table 2. The average age of undergraduate students was fairly similar to that of the sample. However, several differences emerged when the sample was compared with the university undergraduate population. The distribution of gender in the study sample is fairly equivalent, whereas females make up 55.7% of the university undergraduate population. Differences were also present in the ethnicity distributions, with African-Americans being overrepresented and Asian-Americans, Caucasians, and Hispanic-Americans underrepresented in
Table 1. Sample Demographics Compared to University Population

<table>
<thead>
<tr>
<th>Variable</th>
<th>University Undergraduate Population (N=31,508)</th>
<th>Sample Total (N=243)</th>
<th>Sample FGCS (N=83)</th>
<th>Sample Other Students (N=160)</th>
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<td>33.3%</td>
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</tr>
<tr>
<td>Asian-American</td>
<td>3.3%</td>
<td>1.6%</td>
<td>50.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>72.6%</td>
<td>65.4%</td>
<td>24.5%</td>
<td>75.5%</td>
</tr>
<tr>
<td>Hispanic-American</td>
<td>11.3%</td>
<td>6.2%</td>
<td>46.7%</td>
<td>53.3%</td>
</tr>
<tr>
<td>Other/Preferred to not respond</td>
<td>1.2%</td>
<td>4.5%</td>
<td>30.0%</td>
<td>70.0%</td>
</tr>
<tr>
<td>Average Age</td>
<td>21.1</td>
<td>20.9</td>
<td>21.0</td>
<td>20.9</td>
</tr>
<tr>
<td>Academic Class</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>21.1%</td>
<td>9.5%</td>
<td>26.1%</td>
<td>73.9%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>20.6%</td>
<td>22.6%</td>
<td>38.2%</td>
<td>61.8%</td>
</tr>
<tr>
<td>Junior</td>
<td>27.4%</td>
<td>14.8%</td>
<td>33.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Senior</td>
<td>31.0%</td>
<td>53.1%</td>
<td>34.1%</td>
<td>65.9%</td>
</tr>
</tbody>
</table>

the study sample. There was a large discrepancy in academic class between the sample and the university undergraduate population. Seniors made up a majority of the sample (53.1%), but the overall undergraduate population is comprised of only 31.0% seniors. In addition, freshmen and juniors were underrepresented in the study sample. Information regarding the number of first-generation college students at the university where data were collected was not available to the researcher at the time of this study.

Variables

First-generation Student Status

This variable is defined as any student whose parent(s) or guardian(s) did not attend college. Participants indicated a Yes or No on the Student Data Sheet to self-identify as first-generation or not.

Career Indecision

This variable refers to low levels of occupational decidedness. Career indecision was measured by participants’ scores on the Occupational Alternatives Question (OAQ; Zener & Schuelle, 1976; modified by Slaney, 1980). There are four possible scores on the OAQ: 1=first
choice of occupation only; 2=first choice of occupation plus alternatives listed; 3=alternative occupations listed with no first choice, and 4=neither first choice nor alternative occupations listed.

**Career Decision State**

Career decision state consists of two variables, career indecision and satisfaction with choice. This construct was measured by participants’ scores on the OAQ and their response to the Satisfaction with Choice item (Zener & Schnuelle, 1972; modified by Holland, Gottfredson, & Nafziger, 1973).

**Negative Career Thoughts**

Negative career thoughts refer to dysfunctional cognitions about career choice. This construct was operationalized by the total score on the Career Thoughts Inventory (CTI; Sampson et al., 1996a).

**Structure of Vocational Interests**

For the purposes of this study, the structure of vocational interests is measured using congruence and the secondary constructs on the Self-Directed Search (SDS; Holland, 1994). The SDS secondary constructs that were used in this study include consistency, differentiation, and profile elevation. These variables were operationalized using the SDS Professional Summary (Reardon & PAR, 2001). Table 1 includes the categorical scores for congruence, consistency, and differentiation according to the Self-Directed Search Form R: Computer Version User’s Guide (Reardon & Ona, 1996).

<table>
<thead>
<tr>
<th>Construct</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congruence</td>
<td>≤15&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;-85&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>≥86&lt;sup&gt;th&lt;/sup&gt; percentile</td>
</tr>
<tr>
<td>Consistency</td>
<td>First 2 Summary Code letters are opposite</td>
<td>First 2 Summary Code letters are alternate</td>
<td>First 2 Summary Code letters are adjacent</td>
</tr>
<tr>
<td>Differentiation</td>
<td>≤15&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;-85&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>≥86&lt;sup&gt;th&lt;/sup&gt; percentile</td>
</tr>
</tbody>
</table>
Measures

Occupational Alternatives Question

Statement of Purpose

Participants’ career decidedness level was determined from the data sheet through the Occupational Alternatives Question (OAQ; Zener & Schuelle, 1976; modified by Slaney, 1980). This tool is a two-question measure of career decision status. The OAQ has been used in previous research as a quick measure of career decidedness and has been described as an effective method of differentiating decided versus undecided individuals (Sampson, Reardon, Peterson, & Lenz, 2004).

Scales

The OAQ consists of two parts: “List all of the occupations you are considering right now,” and “Which occupation is your first choice? (if undecided, write ‘undecided.’)” Scoring of the OAQ is as follows: if the participant lists only one alternative and that occupation is the first choice listed, the score is 1. If the student lists more than one alternative with only one first choice, the score is 2. If one or more alternative is listed with no first choice, the score is 3; and if no alternatives or first choice is listed, the score is 4. Therefore, a higher score reflects lower levels of career decidedness.

Reliability

Redmond’s study (as cited in Slaney, 1980) reported that a questionnaire including the OAQ was found to have high test-retest reliability of .93 and Slaney (1978) found the measure to be stable over a six-week period.

Validity

Convergent validity. Researchers (Burkey-Flanagan, 1981 as cited in Ryan-Jones, 1990; Slaney, 1980; Slaney & Russell, 1981) have found moderately high correlations between the OAQ and the Career Decision Scale (Saunders, 1998) and the Vocational Decision Making Difficulty scale (Holland & Holland, 1977). The OAQ was significantly correlated with the Vocational Identity Scale of Holland’s My Vocational Situation (Holland et al., 1980; Peterson, Ryan-Jones, Sampson, Reardon, & Shaniasarian, 1988). In addition, the OAQ had a correlation coefficient of .34 with an early version of the CTI (Saunders et al., 1996b) and Kleiman et al.
(2004) found that individuals who indicated a first choice on the OAQ had lower scores on the Career Decision-Making Difficulties Questionnaire (CDDQ; Gati et al., 1996) and the CTI.

*Criterion validity.* Slaney (1980) found that participants with more indecision as measured by the OAQ had lower satisfaction with their college majors. This suggests that the OAQ may be useful in classifying individuals into levels of career decidedness.

*Summary of Evidence of the Appropriateness of the Measure*

Evidence exists that the Occupational Alternatives Question is an acceptable tool for measuring career decidedness. The OAQ has adequate reliability, convergent validity, and criterion validity. As Slaney (1980) stated, “the OAQ does discriminate levels of decisiveness and appears to be a relevant, useful, and brief measure for inclusion in future research on vocational counseling” (p. 127).

*Satisfaction with Choice Item*

*Statement of Purpose*

The Satisfaction with Choice item (Zener & Schnuelle, 1972; modified by Holland et al., 1973) was used to determine individuals’ level of satisfaction with their first occupational choice on the OAQ.

*Ratings*

The item asks: “How well satisfied are you with your first choice?” Scores on the item range from one to six, with lower scores reflecting higher choice satisfaction. A rating of 1 means the respondent is “well satisfied with choice” and a rating of 6 indicates that the respondent is “undecided about [the] future career.”

*Standardization*

The means and standard deviations of the modified version were 1.89 and .88, respectively, for college males and 1.71 and .73, respectively, for college females (Holland et al., 1973). Wright (2001) found the means and standard deviations of the Satisfaction with Choice item for a sample of college students to be 2.59 and 1.72, respectively.

*Convergent Validity*

Correlations between the Satisfaction with Choice item and Vocational Identity for college males was reported to be .39 (Holland et al., 1973). Also, Kleiman et al. (2004) found significant positive relationships between the Satisfaction with Choice item and career decision-
making difficulties, as measured by the CDDQ and the CTI, indicating that participants who were more satisfied with their career decision had fewer difficulties.

Summary of Evidence of the Appropriateness of the Measure

The Satisfaction with Choice item is an adequate tool to measure individuals’ satisfaction with their occupational choice. Together with the OAQ, it is an appropriate evaluation of one’s career decision state.

Career Thoughts Inventory

Statement of Purpose

The Career Thoughts Inventory (CTI; Sampson et al., 1996a) was used to measure negative thinking in career problem solving and decision making. The CTI was designed to aid in assessment of and learning about negative career thoughts. The tool is intended for use with 11th- and 12th-grade high school students and college students choosing an occupation or field of study, or seeking employment, and adults considering an occupational change, seeking employment, or reentering the labor market after a period of nonpaid work (Sampson et al., 1996b).

Development of the Measure

Items on the CTI were based on actual statements the authors heard from their career counseling clients. In addition, each item on the CTI addresses at least one of the eight CIP content dimensions: self knowledge, options knowledge, communication, analysis, synthesis, valuing, execution, and executive processes.

Scales

The 48-item instrument assesses an individual’s level of dysfunctional thinking about career related issues. The CTI is a self-administered, paper-and-pencil, objectively scored measure that includes items that reflect career thoughts that may block the processing of information necessary to solve career problems and make career decisions. Items are endorsed by the individual using a four point Likert type scale ranging from strongly disagree (0) to strongly agree (3). In addition to providing information about an individual’s overall level of negative career thoughts (the CTI total score), the CTI also assesses the individual on three constructs: Decision-Making Confusion, Commitment Anxiety, and External Conflict (Sampson et al., 1996b).
Decision-Making Confusion (DMC) assesses an individual’s inability to initiate or sustain the career decision-making process due to disabling emotions and/or a lack of understanding about the decision-making process itself (Sampson, Reardon, Peterson, & Lenz, 2004). The Commitment Anxiety (CA) scale measures an individual’s anxiety about the decision-making process and represents her or his inability to commit to a specific career choice. The final construct, External Conflict (EC), reflects the inability to balance self-perceptions with the input from significant others, “resulting in a reluctance to assume responsibility for decision making” (Sampson et al., 2004, p. 92).

Potential Bias in the Measure

The CTI was created to measure career thoughts that are common across groups, but the authors acknowledge the difficulty of creating an assessment that addresses differences in life experiences between group cultures. In developing the CTI, items that were significantly associated with gender or ethnicity were eliminated from the item pool, therefore reducing the potential for bias. A study of 75 Dutch and Belgian immigrants found that CTI total and subscale scores were not significantly different than the CTI norms (van Ecke, 2007). The readability of the CTI has been calculated to be at a 6.4 grade level (Sampson et al., 1996b).

Standardization

Adequacy and representativeness of normative groups. CTI normative data were collected for 396 11th- and 12th-grade high school students, 595 college students, and 571 adults from across the nation. Combined data on 376 college student clients and adult clients were also collected (Sampson et al., 1996b). In general, all groups were representative in terms of geographic distribution, gender, and ethnicity, with the exception that female adults were overrepresented, Hispanic American adults were underrepresented, and female clients were overrepresented.

Reliability

According to Sampson et al. (1996b), the internal consistency of the CTI total score ranges from .97 to .93 and the three construct scale alpha coefficients range from .94 to .74. Specifically, scores ranged from .94 to .90 for DMC, .91 to .79 for CA, and .81 to .74 for EC for the normative groups. A more recent study found coefficient alphas for each scale to be .92 for DMC, .85 for CA, and .72 for EC (Reed, 2005). Four-week test-retest reliability of college
students for the total score is .86 and for each subscale is: DMC=.82, CA=.79, and EC=.74 (Sampson et al., 1996b).

Validity

Content validity. The items on the CTI were created based on cognitive information processing theory. Construct scales were directly linked through the CIP dimensions self-knowledge, occupational knowledge, communication, analysis, synthesis, valuing, execution, and executive processing. The CTI Professional Manual (Sampson et al., 1996b) provides a list of all 48 CTI items grouped by content dimension and includes the corresponding criteria for developing each item.

Factorial validity. Factorial validity has been established through a series of factor analyses (Sampson et al., 1996b). The three constructs were identified in two different samples during CTI development and were replicated for 11th- and 12th-grade high school students, college students, and adults. An analysis to extract the factor structure of the instrument confirmed the three factor model for the college population, the combined normative sample, and the client comparison group. Analysis of the adult data confirmed a two-factor model (DMC and EC) and a different two-factor solution (DMC and CA) was most interpretable for the high school students. The authors concluded that DMC, CA, and EC may be viewed as indicators of dysfunctional thinking that hinders cognitive information processing that is the backbone of career problem solving and decision making (Sampson et al., 1996b).

Convergent validity. The convergent validity of the CTI has been supported by correlations with the Identity scale and Occupational Information and Barriers categories on My Vocational Situation (Holland, Daiger, & Power, 1980; Strausberger, 1999); the Certainty and Indecision scales on the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1987); scales on the Career Decision Profile (Jones, 1989); and the Neuroticism domain on the NEO PI-R (Costa & McCrae, 1992). In addition, the CTI total and subscale scores have been correlated with the Career Decision-Making Difficulties Questionnaire (Gati, Krausz, & Osipow, 1996) total and subscale scores (Kleiman et al., 2004).

Criterion validity. The CTI was administered to numerous clients and nonclients at two universities to determine the criterion validity of the instrument. As predicted, the client population had significantly higher scores on the total scale, as well as the three construct scales (Sampson et al., 1996b).
Summary of Evidence of the Appropriateness of the Measure

In summary, adequate evidence exists that the Career Thoughts Inventory is an acceptable measure of dysfunctional thoughts in career problem solving and decision making. The inventory has been found to be consistent and stable in measuring the amount and nature of negative career thoughts. In addition, the CTI has adequate amounts of content, factorial, convergent, and criterion validity.

Self-Directed Search

Statement of Purpose

The Self-Directed Search (SDS; Holland, 1994) is career planning simulation that uses Holland’s RIASEC theory to classify an individual’s career personality type. The SDS with the resulting Professional Summary (Reardon & PAR, 2001) was used to determine participants’ secondary construct scores. The Self-Directed Search has been used in hundreds of prior research studies examining interest structure.

Development of the Measure

The SDS was created based on Holland's theory, which asserts that occupational success, satisfaction, and stability depends on how congruent an individual’s personality type is to a particular work environment. The paper-and-pencil version of the Self-Directed Search (SDS) was first published in 1970, and revisions were made in 1977, 1985, and 1994. The 1994 version of the SDS was developed using the items on the 1985 edition and administering 70 new items to a sample of 701 high school and college students and adults. Items that correlated highly with one code type, exhibited acceptable item-corrected total scale correlations for males and females, and were endorsed by at least 5% of males and females in the sample were kept.

Scales

The SDS is a self-administrated, self-interpreted, self-scored vocational assessment booklet. The SDS consists of items in five areas: occupational daydreams, activities, competencies, occupations, and self-estimates of abilities. In the occupational daydreams section, individuals write down the occupations that they have thought about pursuing during their life. The activities scales ask for Yes/No responses, while the competencies and occupations scales ask for Like/Dislike answers about various activities and occupations, with each RIASEC code represented. Finally, the self-estimates section allows individuals to rate their abilities twice on each RIASEC type.
Potential Bias in the Measure

Bias in the SDS has been questioned due to some gender differences various code types. Holland, Powell, and Fritzsche (1994) noted differences in the 1994 norm sample of high school students, with 39% of the males and only 2.7% of the females having a Realistic code. Bias in the SDS continues to be studied, but no consensus has been reached on whether gender differences are attributed to sex role socialization or instrumental bias.

Standardization

Norms for 1994 edition of the SDS were developed from a sample of 2,602 students and adults. The means and standard deviations for each section of the SDS for all norm groups is available in the SDS Technical Manual (Holland, Fritzsche, & Powell, 1994).

Adequacy and representativeness of normative groups. The normative group consisted of 2,602 individuals. The normative sample consisted of 1,600 females and 1,002 males and included individuals from 25 states. Community college and college/university students made up almost 43% of the sample. The sample appears to be adequate and representative of high school students, college students, and adults.

Reliability

The individual RIASEC scales for the activities, competencies, occupations, and summary scales for the SDS have internal consistency estimates of \( r = .72 \) to .93 for female and male college students, indicating substantial reliability (Holland, Fritzsche, & Powell, 1994). Four- to twelve-week test-retest reliability ranges from .76 to .89.

Validity

Content validity. The SDS was developed utilizing Holland’s theory and propositions and the items measure both expressed and assessed vocational interests.

Concurrent validity. The concurrent validity for the 1994 version of the SDS is provided by comparing individuals’ highest assessed summary code with vocational aspirations and academic majors. The hit rates for college students range from 46.7% to 76.0% (Holland, Fritzsche, & Powell, 2004).

Predictive validity. The predictive validity of the SDS has been demonstrated with respect to occupational choice and college major in high school, college, and adult samples. The predictive validity over a period of one to seven years ranges from 39.6% to 79.3% (Holland et al., 1997).
**Summary of Evidence of the Appropriateness of the Measure**

In summary, evidence exists that the Self-Directed search is an appropriate tool to use with college-aged individuals to measure the indices of vocational interest structure, specifically congruence, consistency, differentiation, and profile elevation. The assessment has documented reliability and validity with a large number of individuals in various settings.

**Student Data Sheet**

A self-report Student Data Sheet regularly collected by class instructors at the beginning of each semester was used to gather information on participant sex, ethnicity, intended major, number of credit hours enrolled, and satisfaction with first occupational choice. In addition, the Student Data Sheet was utilized to identify first-generation college student status, defined as a “student whose parent(s) or legal guardian(s) did not attend college.”

**Data Analysis**

Data were entered into Statistical Package for the Social Sciences (SPSS) for analysis. Descriptive data were gathered from the student data sheet and means, standard deviations, and other descriptive statistics are presented in the results section. In addition, the Chronbach alpha coefficient was determined for each instrument, establishing the internal consistency for each scale in the present study. The following describes how data were analyzed for each hypothesis.

**Research Question 1**

What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?

**Hypothesis 1a**

First-generation college students will have higher levels of career indecision than other students.

**Hypothesis 1b**

First-generation college students will have higher levels of negative career thoughts than other students.

**Hypothesis 1c**

First-generation college students will have lower scores on indices of vocational interest structure (congruence, consistency, differentiation, and profile elevation) than other students.
A multivariate analysis of variance (MANOVA) was utilized to test the first research question. The MANOVA can be used to measure group differences across multiple dependent variables. In this case, first-generation college student status was the independent variable, with only two groups. The dependent variables were career indecision, negative career thoughts, and structure of vocational interests (consisting of congruence, consistency, differentiation, and profile elevation).

**Research Question 2**

Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?

*Hypothesis 2a*

First-generation college student status will contribute to career indecision among college students enrolled in a career planning course.

*Hypothesis 2b*

First-generation college student status will contribute to negative career thoughts among college students enrolled in a career planning course.

*Hypothesis 2c*

First-generation college student status will contribute to the structure of career interests (congruence, consistency, differentiation, and profile elevation) among college students enrolled in a career planning course.

Hierarchical multiple regression was utilized to examine the unique contribution of first-generation college student status to explain the variance in each dependent variable. Several hierarchical analyses were conducted and each variable’s main effect determined by examining the amount of additional significant variance that is accounted for in each step. The analyses were conducted in the following order:

*Hypothesis 2a*

In order to determine the unique contribution of first-generation college student status on career indecision, the variables were entered in three steps: indices of vocational interest structure (congruence, consistency, differentiation, profile elevation), negative career thoughts, and first-generation student status, respectively.
Hypothesis 2b

To examine the unique contribution of first-generation college student status on negative career thoughts, the variables were entered in three steps. Step 1 consisted of career indecision, indices of vocational interest structure (congruence, consistency, differentiation, profile elevation) were entered in step 2, and step 3 consisted of first-generation college student status.

Hypothesis 2c

Four analyses were conducted to examine the unique contribution of first-generation college student status on each of the indices of vocational interest. In each analysis, career indecision was entered in step 1, negative career thoughts in step 2, and first-generation student status in step 3.

Research Question 3

What is the relationship between first-generation college student status and career decision state?

Hypothesis 3

There will be a relationship between first-generation college student status and career decision state.

To test this hypothesis, a MANOVA was conducted with two levels of independent variables (first-generation and other) and two dependent variables (OAQ and Satisfaction with Choice). The Hotellings criterion was used to test the multivariate effect. \( R^2 \) served as an estimate of effect size accounting for the amount of shared variation between generational status and career decision state.

Procedures

The researcher obtained permission from the Program Director for Instruction, Research, and Evaluation, who manages the undergraduate career planning course, to use archival data from students previously enrolled in the course. Students completed consent forms at the time of data collection (Appendix A). In addition, the researcher received permission from the university Institutional Review Board (Appendix B) to conduct analyses on existing data obtained from an undergraduate career planning course during the fall 2007 and spring 2008 semesters.

Students were recruited to participate in the study during the first week of class in the fall 2007 and spring 2008 semesters by an individual reading a script (Appendix C). Potential
participants read over the consent form and were given an opportunity to voluntarily participate. At the time of data collection, students were made aware verbally and through written informed consent that choosing not to participate would in no way lower their grade in the course; although they were offered extra credit to participate. In addition, participants could withdraw without penalty during any part of the study. The following forms and measures were completed during the first week of class: informed consent, demographic student data sheet (Appendix D), and the Career Thoughts Inventory (Sampson et al., 1996a). Additional instruments, the Narcissistic Personality Inventory (NPI) (Raskin & Terry, 1988), Hypersensitive Narcissism Scale (HSNS) (Hendin & Cheek, 1997), and the Goal Instability Scale (GIS) (Robbins & Patton, 1985) were completed during data collection for use in separate studies.

In the third week of class, as part of the normal class procedure, students completed the paper and pencil version of the Self-Directed Search (SDS) (Holland, Fritzsche, & Powell, 1994). Data from the SDS were entered and scored using the computer software program Self-Directed Search Software Portfolio for Windows® (Reardon & PAR Staff, 2001) by course instructors. The Professional Summary report resulting from this software program was photocopied and securely filed for research purposes (Appendix E). Data from assessments were entered into a Microsoft Access database by the principal investigator of another study using the data. All identifying information was removed from the dataset to protect participant anonymity. The data were provided to the researcher only after approval was received from the university’s Institutional Review Board. At no point during the data collection process did the researcher have any way to connect individual responses to specific students.

Delimitations

The first-generation and other student groups were self-determined by how each individual interpreted item 12 on the Student Data Sheet. This item asked whether the student was a first-generation college student, defined as any “student whose parent(s) or legal guardian(s) did not attend college.” The other student group will be comprised of all those students whose parent(s) or guardian(s) did attend college. This group could consist of students with a wide range of parental education levels (e.g., only one parent who attended college for a semester or two parents who graduated from college). Not all levels of non-FGCS status will be analyzed in the results. Also, when responding to this item, students may have interpreted “college” differently. There is no distinction between vocational/technical school, community
college, or four-year university. Additionally, the assessment and demographic data collected in this study are perceptual in nature. Therefore, the levels of career indecision, negative career thoughts, and vocational interest structure, as well as first-generation student status, are the participants’ perception of themselves, as opposed to actual data.

This study used data obtained from students enrolled in a career planning course and did not utilize random sampling. These students may differ from the general university population; therefore, the results are generalizable only to other college students enrolled in a similar course. Another delimitation was the operational definition of vocational interest structure. Vocational interest structure was operationalized by examining congruence, consistency, differentiation, and profile elevation on the Self-Directed Search, as calculated by the Self-Directed Search Software Portfolio for Windows ® (Reardon & PAR Staff, 2001). Other vocational interest assessment tools may define these constructs differently, which were not taken into account in this study. Similarly, negative career thoughts were measured using the Career Thoughts Inventory. This construct may be defined and measured differently by other research and assessments. Finally, history is a possible threat to internal validity, as financial aid assistance for special populations of students was more readily available at the point in time when the data were collected. This situation may have affected the characteristics of the first-generation college students participating in the study as well as the number of FGCS in the sample.
CHAPTER 4
RESULTS

To explore the differences among first-generation college students and other students on constructs of career indecision, negative career thoughts, and structure of vocational interests, both correlational and regression analyses were performed. This chapter presents the results of the analyses, including the means and standards deviations for each measure and the hypotheses and results for each research question proposed.

Data Analyses

The internal consistency for the Career Thoughts Inventory was calculated to be .96, consistent with internal consistency from previous studies. Scale reliabilities for the Self-Directed Search (SDS) were not calculated, as individual item responses were not available. The means and standard deviations were derived for the instruments used in this study. These data are included in Table A. Means for the Self-Directed Search were calculated for congruence, consistency, differentiation, and interest profile elevation. Means for the CTI were calculated for the total score and satisfaction with career choice and career indecision means and standard deviations were calculated from scores on the Student Data Sheet.

Table 3. Means and Standard Deviations of Measures by FGCS Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>FGCS (N=83)</th>
<th>Other (N=160)</th>
<th>Total (N=243)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Negative Career Thoughts</td>
<td>49.46</td>
<td>24.05</td>
<td>49.2</td>
</tr>
<tr>
<td>Vocational Interest Structure</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Congruence</td>
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<td>2.20</td>
</tr>
<tr>
<td>Consistency</td>
<td>2.59</td>
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<tr>
<td>Differentiation</td>
<td>2.08</td>
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<td>2.03</td>
</tr>
<tr>
<td>Profile Elevation</td>
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<td>134.88</td>
</tr>
<tr>
<td>Satisfaction with Career Choice</td>
<td>3.16</td>
<td>2.21</td>
<td>3.77</td>
</tr>
<tr>
<td>Career Indecision</td>
<td>2.37</td>
<td>0.71</td>
<td>2.47</td>
</tr>
</tbody>
</table>

aLow=1, Average=2, High=3
Table 4. Correlations Between Negative Career Thoughts, Structures of Vocational Interest, and Career Indecision

<table>
<thead>
<tr>
<th></th>
<th>Negative Career Thoughts</th>
<th>Congruence</th>
<th>Consistency</th>
<th>Differentiation</th>
<th>Profile Elevation</th>
<th>Satisfaction with Career Choice</th>
<th>Career Indecision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Career Thoughts</td>
<td>1.000</td>
<td>-.062</td>
<td>.028</td>
<td>-.117</td>
<td>-.053</td>
<td>-.287*</td>
<td>.283*</td>
</tr>
<tr>
<td>Congruence</td>
<td></td>
<td>1.000</td>
<td>.319*</td>
<td>.174*</td>
<td>.078</td>
<td>.010</td>
<td>-.002</td>
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<tr>
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*p<.01

Research Questions and Hypotheses

Research Question 1

What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?

Hypothesis 1a

First-generation college students will have higher levels of career indecision than other students.

Hypothesis 1b

First-generation college students will have higher levels of negative career thoughts than other students.

Hypothesis 1c

First-generation college students will have lower scores on indices of vocational interest structure (congruence, consistency, differentiation, and profile elevation) than other students.
Hypothesis 1

The MANOVA analysis assumes the observations in each group are sampled from normal distributions. Visual examination of histograms suggested no departures from normality. The test of the assumption of homogeneity of covariance matrices in the two groups (first-generation college students and other college students) resulted in a fail to reject decision (Box’s M = 18.725, F[15,114236] = 1.216, p=.250), indicating there was no violation of this assumption. The analysis resulted in a fail to reject of the multivariate null hypothesis of equality of the means overall groups for all variables at the 0.05 level (Wilk’s Lambda = 0.991, F[5,237] = 0.428, p>0.05; Pillai’s Trace statistic = 0.009, F[5,237] = 0.428, p>0.05; Hotelling’s Trace statistic = 0.009, F[5,237] = 0.428, p>0.05; and Roy’s Largest Root statistic = 0.009, F[5,237] = 0.428, p>0.05).

Research Question 2

Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?

Hypothesis 2a

First-generation college student status will contribute to career indecision among college students enrolled in a career planning course.

Hierarchical multiple regression analysis using an order of entry of structure of vocational interests, negative career thoughts, and first-generation college student status resulted in a rejection of the hypothesis. The results of the hierarchical multiple regression are shown in Table 5. Structure of vocational interests, as the first variable entered into the regression equation, accounted for 1.6% (p>.05) of the variance in the criterion career indecision variable. In the subsequent two steps, R was significantly different from zero only after the variable negative career thoughts was entered into the equation (R²=.092, p<.05), accounting for 7.6% of the variance in career indecision. Overall, after controlling for structure of vocational interests and negative career thoughts, first-generation college student status accounted for 0.4% (p>.05) of incremental variation in career indecision.
Table 5. Hierarchical Regression of Career Indecision and First-generation College Student Status

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**Hypothesis 2b**

First-generation college student status will contribute to negative career thoughts among college students enrolled in a career planning course.

Hierarchical multiple regression analysis using an order of entry of structure of vocational interests, career indecision, and first-generation college student status resulted in a rejection of the hypothesis. The results of this hierarchical multiple regression are shown in Table 6. As the first step in the regression equation, structure of vocational interests accounted for 2.4% ($p>.05$) of the variance in the criterion negative career thoughts variable. The subsequent step, entering career indecision, resulted in a significant change in $R^2$ ($p<.05$). In this step, career indecision accounted for 7.5% of incremental variation in negative career thoughts.
Finally, entering first-generation college student status resulted in no significant change in \( R \) square. Overall, after controlling for structure of vocational interests and career indecision, first-generation college student status accounted for 0.1% of incremental variation in negative career thoughts.

Table 6. Hierarchical Regression of Negative Career Thoughts and First-generation College Student Status

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**Hypothesis 2c**

First-generation college student status will contribute to the structure of vocational interests (congruence, consistency, differentiation, and profile elevation) among college students enrolled in a career planning course.

Hierarchical multiple regression analysis using an order of entry of career indecision, negative career thoughts, and first-generation college student status resulted in a rejection of the hypothesis that first-generation college student status will contribute to the construct of
congruence. The results of the hierarchical multiple regression are shown in Table 7. Career indecision accounted for 0.0% of variance in congruence \((p > .05)\), negative career thoughts accounted for 0.4% of variance in congruence \((p > .05)\), and first-generation college student status accounted for 0.1% of the variance in congruence \((p > .05)\).

Table 7. Hierarchical Regression of Congruence and First-generation College Student Status

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<th>Adj R²</th>
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Hierarchical multiple regression analysis using an order of entry of career indecision, negative career thoughts, and first-generation college student status resulted in a rejection of the hypothesis that first-generation college student status will contribute to the construct of consistency. The results of the hierarchical multiple regression are shown in Table 8. Career indecision accounted for 1.3% of variance in consistency \((p > .05)\), negative career thoughts accounted for 0.0% of variance in consistency \((p > .05)\), and first-generation college student status accounted for 0.0% of the variance in consistency \((p > .05)\).

Table 8. Hierarchical Regression of Consistency and First-generation College Student Status

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Hierarchical multiple regression analysis using an order of entry of career indecision, negative career thoughts, and first-generation college student status resulted in a rejection of the hypothesis that first-generation college student status will contribute to the construct of differentiation. The results of the hierarchical multiple regression are shown in Table 9. Career indecision accounted for 0.0% of variance in differentiation ($p > .05$), negative career thoughts accounted for 1.4% of variance in differentiation ($p > .05$), and first-generation college student status accounted for 0.3% of the variance in differentiation ($p > .05$).

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Hierarchical multiple regression analysis using an order of entry of career indecision, negative career thoughts, and first-generation college student status resulted in a rejection of the
hypothesis that first-generation college student status will contribute to profile elevation. The results of the hierarchical multiple regression are shown in Table 10. Career indecision accounted for 0.0% of variance in profile elevation ($p > .05$), negative career thoughts accounted for 0.3% of variance in profile elevation ($p > .05$), and first-generation college student status accounted for 0.1% of the variance in profile elevation ($p > .05$).

**Research Question 3**

What is the relationship between first-generation college student status and career decision state?

**Hypothesis 3**

There will be a relationship between first-generation college student status and career decision state.

The construct of career decision state is made up of two variables, career indecision and satisfaction with career choice. The MANOVA analysis assumes the observations in each group are sampled from normal distributions. Visual examination of histograms suggested no departures from normality. The test of the assumption of homogeneity of covariance matrices in the two groups (first-generation college students and other college students) resulted in a fail to reject decision (Box’s $M = 4.674$, $F[3,729625] = 1.542$, $p = .201$), indicating there was no violation of this assumption. The analysis resulted in a fail to reject of the multivariate null hypothesis of equality of the means overall groups for all variables at the 0.05 level (Wilk’s Lambda $= 0.976$, $F[2,240] = 2.946$, $p > 0.05$; Pillai’s Trace statistic $= 0.024$, $F[2,240] = 2.946$, $p > 0.05$; Hotelling’s Trace statistic $= 0.025$, $F[2,240] = 2.946$, $p > 0.05$; and Roy’s Largest Root statistic $= 0.025$, $F[2,240] = 2.946$, $p > 0.05$).

**Additional Findings**

Additional analyses were conducted to examine the differences between upper division (juniors and seniors) and lower division (freshmen and sophomore) students on the career variables. A univariate ANOVA found a significant difference ($p < .001$) between the two groups’ level of negative career thoughts, with the upper division group having lower levels of negative career thoughts than the lower division students. A MANOVA revealed a significant difference ($p < .05$) between the two groups on the construct of profile elevation, with upper division students having higher profile elevation than the lower division students. Further
examination revealed that these differences were not moderated by first-generation college student status.
CHAPTER 5
DISCUSSION

The purpose of this study was to explore differences between first-generation college students and other students on constructs of career problem solving and decision making. Assessment instruments utilized in this study were the Self-Directed Search (Holland, Fritzsche, & Powell, 1994), Career Thoughts Inventory (Sampson et al., 1996a), and the Occupational Alternatives Question (Zener & Schuelle, 1976; modified by Slaney, 1980). The SDS was used to measure interest congruence and secondary constructs (consistency, differentiation, and profile elevation). The CTI was used to measure negative career thoughts, which were operationalized as an individual’s total score on the CTI. The OAQ was utilized to measure career indecision and career decision state. This chapter includes a summary of the findings as they relate to each research question, a discussion of the results, a review of study limitations, implications of the results for further research and practice, and recommendations for future research.

Research Question 1

What differences exist between first-generation college students and other students enrolled in a career planning course in terms of career indecision, negative career thoughts, and structure of vocational interests?

A MANOVA was used to explore the differences between first-generation and other students on the constructs of career indecision, negative career thoughts, and indices of vocational interest structure. The analysis resulted in no significant differences between the two groups. Differences might have been expected given past reports of greater attrition rates among FGCS (Chen & Carroll, 2005; Ishitani, 2006) and the relationship of career constructs to college retention. For example, students with high and medium consistency have been found to persist in college at a higher rate than low consistency students (Wiley & Magoon, 1982), congruence is related to satisfaction with college (Allen, 1996; Nafziger, Holland, & Gottfredson, 1975), and career decidedness was found to have a negative relationship with intention to withdraw from college (Lounsbury, Saudargas, & Gibson, 2004). Chen and Carroll (2005) reported that 24% of FGCS completed a bachelor’s degree, compared with 68% of students whose parents had graduated from college, indicating that there are differences between these groups that affect their persistence in college.
The finding that first-generation and other college students do not differ on career indecision, negative career thoughts, or indices of vocational interest structure are consistent with other studies that have found no differences between FGCS and their peers. Specifically, FGCS have been found to have the same amount of overall knowledge of college as other students (York-Anderson & Bowman, 1991) and comparable levels of global self-worth, job and scholastic competence, and social relationships (McGregor et al., 1991).

The finding that these two groups do not differ on the assessed career constructs may be explained by the sample used in this study, specifically students enrolled in a career development course. These students are likely to have more career decision-making difficulties, creating a more homogenous sample, which may have hidden the differences between the FGCS and other students groups. Finally, career and personal motivation have been found to be strongly related to college adjustment (Dennis et al., 2005). First-generation and other college students enrolled in a career planning course may have higher amounts of career motivation than non-enrolled peers. Therefore, this sample may not have captured the students who have increased risk factors for dropping out of college.

Research Question 2

Does first-generation college student status contribute to career indecision, negative career thoughts, and structure of vocational interests among college students enrolled in a career planning course?

Hierarchical multiple regression was used to explore the relationship between first-generation college student status and career indecision, negative career thoughts, and structure of vocational interests. Analyses revealed that first-generation college student status did not account for a significant amount of variation in any of the models. A relationship was found between negative career thoughts and career indecision in two of the analyses. Negative career thoughts accounted for a significant amount of variance (7.6%) in career indecision and career indecision accounted for a significant amount of variance (7.5%) in negative career thoughts. This regression is consistent with the Wright (2000) study that found no significant correlations between CTI and SDS secondary construct scores.

One possible explanation for non-significant differences is that data were collected in a career planning course; therefore, this population of students may have similar levels of career indecision, negative career thoughts, and structures of vocational interests, leading to them being
referred to the course or seeking to take the course. In addition, FGCS are more likely to drop out of college during their freshman or sophomore year (Brooks-Terry, 1988; Ishitani, 2006; Riehl, 1994), indicating that first-generation students who were struggling with career decisions may have dropped out prior to enrolling in a career planning course. Another explanation relates to the work experiences of FGCS that may affect their options knowledge. Options knowledge includes one’s knowledge of occupations and possession of a schema for the organization of the world of work (Sampson et al., 2004). Because FGCS are more likely to work during college (Pascarella et al., 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) and, thus, learn more about various occupations and personal values, interests, and skills, their knowledge domains in the Pyramid of Information Processing Domains (Sampson et al.) may be more developed than their peers’.

Research Question 3

What is the relationship between first-generation college student status and career decision state?

A MANOVA was used to explore the relationship between first-generation college student status and career decision state. The analysis resulted in no significant differences between the two groups. Holland, Gottfredson, and Nafziger (1975) found that satisfaction with occupational choice was negatively correlated with father’s level of education in high school females. This study’s findings are not consistent with the proposition that a parent’s education is correlated with job choice satisfaction. However, the results of the first research question indicate that this sample of FGCS had no more career decision-making difficulties than other students. A 2004 study (Kleiman et al., 2004) found that career decision-making difficulties were negatively correlated with satisfaction with occupational choice. Therefore, the results of the first research question would indicate that the two groups would not differ on their career decision state. In addition, decided individuals have reported less parental control than individuals in a chronically undecided group (Guay, Ratelle, Senecal, Larose, & Deschenes, 2006) and FGCS have reported less parental involvement and support (Bartels, 1995; Horn & Nunez, 2000). Although this may appear to be a negative factor for FGCS, less parental involvement may provide FGCS with the independence to make an occupational choice with which they are satisfied.
Limitations of the Study

There are several foreseeable threats to internal and external validity that may impact the validity of this study. Specifically, data were collected from a criterion sample of college students enrolled in all five sections of an introductory career development course at a southeastern research university over fall and spring semesters. This limits the generalizability of the study results to college students enrolled in a career planning course, which influences both selection validity and population validity. There are two areas of potential sample bias in this study, all of which may lead to a population of students that is more homogenous than college students in the general population. First, the data were collected from a career planning course. The nature of students who enroll in this type of course is likely more homogenous on constructs of career development than college students in the general population. Second, the sample consisted of 53.1% seniors. This group of individuals, having completed three years of coursework and college experiences, is more likely to be a homogenous group than lower-students with respect to their career development.

Another potential threat to internal validity relates to programs offered to at-risk students at the university where data were collected. Like many post-secondary institutions, this university provides preparation, orientation, and academic support for students who may face unique challenges in college because of economic, cultural, or educational circumstances, including first-generation students. The program offers assistance to students in their academic and social adjustment in college. These services include assistance with career planning. According to the website for the program, there are 160 first-generation undergraduate students participating in the program (0.5% of the university population). It is unknown whether the FGCS in this study were involved with this student support program. Participation in a program that offers career services might affect students’ levels of career indecision, negative career thoughts, and structure of vocational interests.

Environmental factors may be a threat to internal and external validity because all the participants are registered for an introductory career development course. However, this was controlled by collecting data in the first week of the semester so that course knowledge would not influence the results. Experimenter reactivity was controlled by having a research assistant who did not know the hypotheses of the study administer the measures to the participants. Finally, although sought, information regarding enrollment of FGCS at the research university
was not available to the researcher. Therefore, it is unclear whether the sample percentage of FGCS is comparable to the percentage of FGCS at the research university.

**Implications for Future Research**

As Bartels (1995) stated, “the research comparing students on certain demographic features (ethnicity, gender, SES) has been extensive, compared to the paucity of research on generation status differences” (p. 83). This exploratory study of generation status differences on several career decision-making constructs found no significant differences between the groups. However, further research with these populations on career constructs and other variables continues to be warranted. The implications for future research relate to the effects of various career interventions on FGCS, replication of this study with a different population, and other potentially relevant constructs.

FGCS are less likely than other students to complete their degree programs in a timely manner (Ishitani, 2006) and are less likely to even graduate (Billson & Terry, 1982; Brooks-Terry, 1988; Chen & Carroll, 2005; Ishitani, 2006; Riehl, 1994) than their peers. Folsom, Peterson, Reardon, and Mann (2002) found that students in a career planning course had higher rates of graduation than similar students who did not take the course. The same researchers found, in a comparison of students enrolled in a CIP-based career planning course with those not enrolled, that enrolled minority students took fewer credit hours to graduate and enrolled females graduated in fewer months. Therefore, examining the effects of a career planning course on the time to graduation and retention of FGCS may provide information helpful to improving the retention rate of these individuals.

Replication of this study with a different population of students would be important to expand the research on first-generation college students. As mentioned, this study utilized a criterion sample that led to sample bias that may have affected the outcome of the analyses. Obtaining more lower division students in future research, as well as participants from other post-secondary institutions (e.g. community colleges, less selective universities) would likely provide a sample more representative of the first-generation college student group as a whole.

This study utilized the Occupational Alternatives Question and a satisfaction with career choice item to determine career decision state. Many types of indecision and career decision states have been identified, including developmental indecision and chronic indecision (Dysinger, 1950) and the categories of decided, undecided, and indecisive decision states.
proposed by cognitive information processing theory (Peterson, Sampson, & Reardon, 1991; Sampson, Reardon, Peterson, & Lenz, 2004). By making the construct of career decision state more specific, differences may be found between or within the first-generation and other college student groups. This study looked at vocational behavior among first-generation and other college students. Future research on first-generation college students may also examine more diverse psychological variables, including family dynamics and coping styles.

Considerable variability exists in how first-generation college students are defined. It would be useful for researchers and post-secondary institutions to explicitly define first-generation versus other college students and consistently apply that definition across studies. A potential method of addressing this may be to define first-generation status in a more dynamic fashion, as opposed to viewing FGCS as a nominal, yes/no construct. The concept of first-generation student status may contain an array of factors, including the amount of school one or both parents received, which parent attended college, expectations placed on the individual during high school, and other factors that affect an individual’s perception of and exposure to post-secondary education. As with many other studies examining FGCS, this study did not take into account other family members or close friends who may have attended college and impacted students’ knowledge of college. In addition to between group differences, future research should look at within group differences of career constructs based on ethnicity, socioeconomic status, and whether significant others attended college.

Conclusion

This study explored the relationship between first-generation college student status and career indecision, negative career thoughts, and structure of vocational interests. These variables were examined with the first-generation and other college student populations due to greater attrition rates among FGCS and the relationship of career constructs to college persistence. Data analyses showed no significant differences between these two populations on the career constructs. This may be a result of no true differences between the groups, sampling limitations, or the nature of students in a career planning course. The population of first-generation college students is one that continues to warrant further research in areas of career development, as well as other constructs.
Informed Consent Form

Relationships Among Personal Characteristics, Vocational Interests, And Career Thoughts of College Students Enrolled in a Career Development Course

Dear SDS 3340 Student,

We are doctoral students under the direction of Professor Robert Reardon and Professor James P. Sampson, Jr. in the Department of Educational Psychology and Learning Systems in the College of Education at Florida State University. We are conducting a research study to examine the relationships among personal characteristics, career thoughts, and vocational interests.

Your participation today will involve completing four different paper-based assessments about personal characteristics. Completion of all four of these forms should take about 45 minutes. The name field on each assessment will be blocked out and each form will be identified with a number only. Also, information from class demographic forms and the Self Directed Search, which you will complete later in the semester will be matched to these assessments by the researchers using the number provided. The demographic forms, Self Directed Search data, and these consent forms will be stored separately from the questionnaires. Finally, you will be asked to complete a follow-up questionnaire on the last day of class at the end of the semester. After the conclusion of data collection for the study you can elect to participate in a short debriefing over the study’s purpose. You will not be offered individual feedback from the assessments you take today.

Information obtained from you during the course of this study will remain confidential, to the extent allowed by law. You responses to the questionnaires, demographic form, and consent form will be stored in locked cabinets, out of public view and under the control of the principal investigators and/or faculty advisors. Data collected from this study will be retained in a secure manner until December 30, 2014, after which time it will be destroyed. The results of the research study may be published, but your name will not be used, and the results will be presented in group format only.

Your participation in this study is voluntary. You will not be paid for your participation. If you choose not to participate or to withdraw from the study at any time, there will be no penalty; it will not reduce your grade in SDS 3340. Participants in the study will receive 5 points extra credit added to their total points earned in the course. Other opportunities for extra credit will also be available throughout the semester.

The discomfort and risk reasonably expected by your participation in this project is that you may become more aware of personal characteristics that relate to career decision making. This awareness may engender mild sadness, anxiety, or thoughts and feelings of depression. If you experience such a reaction after participating in this study, please contact the Career Center (850-644-6431) or the University Counseling Center (850-644-2003) to discuss your situation.

Although there may be no direct benefit to you, a possible benefit of your participation is that you may gain a better understanding of factors influencing you career decision making. This information also has the potential to improve the ability of counselors and advisors to address issues that may interfere with career problem solving and decision making. It may also help future SDS 3340 students and instructors improve their skills and knowledge in this area.

If you have any questions concerning this research study, please call Sara Berchot or Darrin Carr (or their faculty supervisors Robert Reardon, Ph.D., or James P. Sampson, Jr. Ph.D., respectively) at (850) 644-6431. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Vice President for the Office of Research at (850) 644-8633.

Sincerely,

Sara Berchot, M.S., Ed.S. & Darrin Carr, M.S.

I give my consent to participate in the above study.

(signature) (date)

(Print Your Name Here)

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 08/20/2008. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 8/19/2009 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.
Cc: James Sampson, Advisor
HSC No. 2008.1506
**Data Collection Script**

1. Hello, I am (principal investigator’s name here). As a part of this SDS 3340 class, we are conducting a research study of students’ personal characteristics, thoughts, and vocational interests with respect to their career decisions. We believe this project will help us obtain a better understanding of the career-decision making process.

2. Participation involves reading and signing the Consent Form, and then completing four questionnaires using the papers provided in the order they are presented in your folder. When I give you your folder please leave them closed on your desk.

3. *Pass out folders to participants, making sure each folder is given to the correct student.*

4. Please open your folder and read the Informed Consent Form with me.

5. *Read informed consent form.*

6. *Ask the following questions and provide appropriate feedback to participant responses.*
   a. What are the risks of participating in this research?
   b. What are the benefits of participating in this research?
   c. Who can you contact if you have further questions or concerns?

7. If you choose to participate in the study, please sign the informed consent form and print your name below the signature.

8. Now please complete the assessments in the order they are presented in your folder. Please read the directions for each instrument carefully. Notice that each assessment has your unique code number. Make sure the code written on the label of your folder and the code on each answer sheet matches. Do not fill in any other identifying information on the answer sheets other than your answers.

9. Please begin. Once you have completed the survey forms, return your folder to me. Leave the signed copy of your informed consent in the folder and take your copy with you.

10. As participants leave check that
   a. Informed Consent is signed and dated
   b. Instruments are complete
APPENDIX D
STUDENT DATA SHEET WITH OCCUPATIONAL ALTERNATIVES QUESTION
SDS 3340 STUDENT DATA SHEET

Name ________________________________ Date __________________

Soc. Sec. No. (last 4 digits) ___________ Expected Graduation Date ___________

FOR QUESTIONS 16-17 AND 20-27, PLACE THE NUMBER IN THE SPACE IN THE RIGHT MARGIN WHERE INDICATED:

1. Major (print major or “undecided”) ________________________________

2. First major declared at FSU (print major) ________________________________

3. Advisor (Name) ________________________________

4. Campus Address ________________________________

5. Local Telephone ________________________________

6. E-mail Address ________________________________

7. Permanent Address ________________________________

8. Are you active in campus organizations? Which? ________________________________

9. Outline your previous employment or work experience. ________________________________

10. How did you learn of this course? ________________________________

11. What are your objectives in taking this course? ________________________________

12. Are you a first generation college student? (1=Yes 2=No) ________________________________

(A first generation college student is a student whose parent(s) or legal guardian(s) did not attend college)

13. Number of Hours This Semester ________________________________

14. Age (in years) ________________________________

(continue over →)
15. Sex (1 = Male 2 = Female) ................................................................. 15. __________

   5. Caucasian

17. Year in school (write in number) .......................................................... 17.
   1. Freshman  3. Junior  5. Graduate Student
   2. Sophomore  4. Senior  6. Other

18. List all the occupations you are considering right now.

   ____________________________
   ____________________________
   ____________________________

19. Which occupation is your first choice? (If undecided, write “undecided.”)

   ____________________________

20. How well satisfied are you with your first choice? (write in number) .......... 20. __________
   1. Well satisfied with choice  4. Dissatisfied and intend to remain
   2. Satisfied, but have a few doubts  5. Very dissatisfied and intend to change
   3. Not sure  6. Undecided about my future career

Mark a rating number from 1 (Strongly Disagree) to 7 (Strongly Agree) that best responds to items 21-27.

21. Decisions about my career tend to directly affect my health.

22. Decisions about my career create a great deal of tension.

23. I have felt fidgety or nervous as a result of having to make career decisions.

24. If I did not worry about my career, my health would probably improve.

25. Problems associated with my career decisions have kept me awake at night.

26. I have felt nervous before attending classes that made me think about my career.

27. I often think about my career even when I am doing other things.
APPENDIX E
SELF-DIRECTED SEARCH PROFESSIONAL SUMMARY
The Self-Directed Search Professional Summary

Client Name:  
Client ID: (not specified)  
Reference Group: College

Age: 20  
Gender: Female

Education: (not specified)

Test Date:

SDS Scores:

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<th>Occupations</th>
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<th>Self-Estimates II</th>
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Summary Scores

Summary Scores: 29 34 23 39 47 33

Percentiles

Percentiles: 94 90 58 71 ≥ 99 82

OF Selection Codes: ESI, EIS, SEI, SIE, IES, ISE

Diagnostic Signs:

Congruence: High (Iachan Index = 27)

Summary Code: ESI

Aspirations Summary Code: ESR

Coherence of Aspirations: Low

Consistency: High

Differentiation: Average (Iachan Index = 5.50)

Commonness: Average

Aspirations Listed:

- Sales-Service Promoter
- Teacher, Elementary School
- Production Planner
- Human Resource Advisor
- Health Care Facility Administrator

Aspirations Summary Code: ESR
REFERENCES


Folsom, B., Peterson, G. W., Reardon, R. C., & Mann, B. A. (2002). The impact of a career course on retention and academic performance (technical report No. 34). Tallahassee, FL: Florida State University.


BIOGRAPHICAL SKETCH

Sarah Lucas Hartley pursued her Ph.D. in the Combined Doctoral Program in Counseling Psychology and School Psychology, with an emphasis in counseling psychology, at Florida State University in Tallahassee, FL. She is originally from Newport, VA and received her bachelor’s degree in Psychology from Wake Forest University in Winston-Salem, NC. She completed her Master of Science and Specialist in Education degrees in Counseling and Human Systems, with an emphasis in career counseling and mental health counseling, at Florida State University. Currently, Sarah is a predoctoral medical psychology intern at the Carl T. Hayden VA Medical Center in Phoenix, AZ and will complete her postdoctoral fellowship in Integrated Primary Care Psychology at the Salem VA Medical Center in Salem, VA.