Career Counseling for First-Year College Students: Outcomes and Process

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Abstract

This study investigated first-year college students’ experiences in individual career counseling. A quasi-experimental design using mixed methods was employed. Survey data was used to measure outcomes, including changes in career decision-making self-efficacy and perceptions of career barriers over time. Interview data was used to explore influential components of the career counseling process. Survey and interview data were collected at three times over the course of a full academic year: (a) prior to the intervention, (b) two to four weeks following the intervention, and (c) five to six months following the intervention. A total of 130 students persisted in the study. Findings indicated that treatment group participants experienced a variety of outcomes that may be reasonably attributed to career counseling, such as progress on key tasks that contribute to career choices, increased career decision-making self-efficacy, and decreased perceptions of career barriers. Components of career counseling that emerged as particularly influential in bringing about positive outcomes included: (a) resource and information delivery; (b) career counselor-client relationships that were marked by a sense of openness, attentiveness to students’ needs, and invitations to return for further assistance; and (c) student engagement in performance accomplishment activities related to making and implementing career choices.

Based on both demonstrated outcomes and student reflections on the process-oriented elements of individual career counseling, suggestions were made for a potential new theoretical connection regarding ways in which career counseling may influence students. Implications are offered for practice and research.

Keywords: career counseling, career intervention outcomes, career decision-making self-efficacy, career barriers, social cognitive career theory
Career Counseling for First-Year College Students: Outcomes and Process

Today’s college students face difficult academic and career choices with many potential career barriers along their paths. They can become stymied by indecision and perceived career barriers, “floundering” from one major to the next and slowing their progress to degree (Betz, 2004, p. 344). Experiencing “prolonged uncertainty” in regards to college goals “often leads students to call into question the reasons for their continued presence on campus” (Tinto, 1993, p. 172), and can ultimately reduce the likelihood of students persisting to their higher education goals and accessing the personal and societal benefits of a college degree (Gordon, 1985).

Decades of career development research has shown that career interventions generally support college students in making transitions, as well as defining, setting, and creating plans to reach academic and career-related goals (e.g., Baker & Popowicz, 1983; Diegelman & Subich, 2001; Fretz, 1981; Myers, 1986; Oliver & Spokane, 1988; Ryan, 1999; Whiston, Brecheisen, & Stephens, 2003; Whiston, Sexton, & Lasoff, 1998). However, few conclusions can be drawn regarding the types of interventions that are particularly helpful or meaningful to college student participants, due to the scarcity of research that examines the process of making career choices and limitations in research designs of available studies (Brown & Ryan Krane, 2000; Hughes & Karp, 2004; Oliver & Spokane, 1988; Whiston et al., 1998). For instance, career intervention outcomes studies often employ short-term data collection that does not offer a great enough temporal lag for student development to occur and be observed (e.g., Hughes & Karp, 2004; Luzzo, Hasper, Albert, Bibby, & Martinelli, 1999). In addition, the primarily quantitative approaches taken may show changes before and after an intervention, yet they do not provide insights regarding why or how these changes occurred. It is as if the experience of participating
in the career intervention is hidden within a black box. What happens within these interactions? How do students experience career interventions? How could career interventions be improved to meet students’ needs so fewer become stymied or lost in the academic pipeline, leaving college without achieving their goals?

**Past Understandings of Outcomes and Process**

Meta analyses of career intervention outcomes studies (e.g., Oliver & Spokane, 1988; Whiston et al., 1998, 2003) indicate ample research evidence to suggest that many different types of career interventions (e.g., individual counseling, career courses, computer-assisted career guidance programs), designed for a wide variety of people across the lifespan (e.g., college students, K-12 students, adults in career transition), are “moderately effective” (Whiston et al., 1998, p. 160) in assisting clients to make and implement career choices, as evidenced by study effect sizes. This led to the conclusion that “career counseling has generally been shown to have positive effects, and the question of whether career counseling works is no longer needed” (Oliver & Spokane, 1988, p. 447). However, beyond this broad conclusion, these scholars offer little regarding what aspects of career counseling and career interventions are particularly effective or for whom they are effective. What can be determined regarding specific treatment characteristics and populations has been minimal and sometimes conflicting. For example, examining treatment type, Oliver and Spokane (1988) concluded that class-based interventions had the largest effect size (d = 2.05), followed by workshops (d = 0.75), and individual counseling (d = 0.74). Whiston et al. (1998), however, found individual counseling to have the highest overall effect size (d = 0.75), with workshops (d = 0.22) and class-based interventions (d = 0.15) lagging considerably behind. Conflicting and limited findings such as these have led
many scholars to “lament that although we know that career interventions are effective, we know little about how, why, and for whom they work” (Brown & Ryan Krane, 2000, p.740).

Providing an early and unique examination of process-oriented elements of career interventions that contribute to outcomes, Ryan (1999) conducted a meta-analysis which included coding for intervention components in regression analyses. Five intervention components were identified as contributing significantly to effect sizes beyond that accounted for by the study and methods characteristics. These “critical components” included: (a) workbooks and written exercises, (b) individualized interpretations and feedback, (c) world of work information, (d) modeling opportunities, and (e) attention to building support. Moreover, the greater the number of these critical components included in an intervention, the greater the resulting effect size.

Despite numerous calls made over the past two decades for process-oriented research on career counseling (e.g., Heppner & Heppner, 2003; Savickas, 2003; Swanson, 1995a; Whiston, 2003), very few studies examine the application of process models for tests of the effectiveness of career interventions. Diegelman and Subich (2001) Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) to examine whether a career intervention based on verbal persuasion could influence students’ intent to pursue a particular career path. Analyses of pretest and posttest data demonstrated significant increases in outcome expectations, interests in psychology, and intent to pursue a psychology degree all occurred following the intervention. Luzzo et al. (1999), relying on Bandura’s (1977, 1986, 1997) Social Cognitive Theory as a theoretical foundation, discovered similar findings in a study examining a career intervention designed to enhance math and science self-efficacy that incorporated performance accomplishment and vicarious learning components. Four weeks after the intervention,
participants' interest in math/science careers were significantly higher for students in the treatment that provided both the vicarious learning and performance accomplishment conditions (effect size = 1.40) than in any other experimental group.

Based on evidence from past research, it is tempting to conclude that career interventions are a part of a support system that facilitates the career choice process – essentially to say that career interventions work. However, much remains to be understood about the mechanisms through which career interventions support students. What aspects of these interventions create the opportunity for development to occur? Further research would benefit from addressing some of the current weaknesses in the available literature, such as employing standardized measures from previous studies and collecting data over longer periods of time (e.g., a traditional academic school year) to provide sufficient temporal lag for student development to occur. Based on a deeper understanding of students’ experiences, career professionals could more clearly distinguish the meaningful contribution that they make in clients’ lives and career interventions could be tailored and improved to increase their ability to meet clients’ needs.

**Theoretical Frameworks for Examining the Process of Career Interventions**

Lent et al.’s (1994) Social Cognitive Career Theory (SCCT) has been recognized as a promising approach for examining the process through which people make and pursue career choices (e.g., Albert & Luzzo, 1999; Ali & McWhirter, 2006; Chartrand & Rose, 1996). Through the lens of SCCT, career interventions may be viewed as one example of an environmental support that strives to facilitate the process of engaging, making, and implementing career choices. This section provides a brief overview of SCCT’s hypotheses regarding the influence of environmental supports on an individual’s career choice process. Bandura’s theories regarding
Self-efficacy are also introduced, as both SCCT and past career intervention outcomes research have both drawn upon this work in discussions of the career choice process.

**Self-efficacy.** The current study, much like SCCT, draws upon Bandura’s (1977, 1986, 1997) theories regarding self-efficacy beliefs. Bandura (1986) defined self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p. 391). Self-efficacy beliefs relate to specific tasks or behaviors, such as solving calculus problems, creating a painting, or making a career choice. Bandura suggested four sources through which self-efficacy could be acquired and modified over time. Performance accomplishments refer to a direct, hands-on experience performing a task, resulting in a perception of success or failure. Vicarious learning relates to observations of another’s performance of a task, which influences one’s personal assessment of his/her capabilities in relation to others. Verbal persuasion occurs as an expression of encouragement or support from significant others, which influences one’s view of his/her capabilities of successfully a task. Finally, affective states refer to the emotional arousal experienced in regards to a behavior, which influences one’s perceptions of the task. Recognition of performance accomplishments is thought to be the most powerful self-efficacy source because it is based in authentic, hands-on experiences. In addition, Bandura suggested three behavioral consequences that are influenced by perceptions of self-efficacy: (a) performance on specific tasks, (b) persistence in spite of encountered challenges, and (c) approach versus avoidance behaviors. Higher levels of self-efficacy encourage successful performances, increased persistence in the face of challenges, and approach behaviors. Betz (2000) suggested that, in the context of career development, approach behaviors relate to what an individual would be willing to try, while avoidance behaviors relate to what an individual would not be willing to try.
Social Cognitive Career Theory and environmental influences. SCCT is grounded in cognitive psychology’s understanding of the relationship between self-efficacy beliefs, environmental cues, and human behavior. Modifying these ideas to address career-specific actions, SCCT describes how career interests, intentions, goals and performance develop over time, as well as how environmental factors may influence an individual’s process (Lent et al., 1994). Readers are advised to review Lent et al. (1994) for an overview of the career choice process that is internal to individuals, which relates the constructs of self-efficacy, outcome expectations, interests, intentions or goals, selection of performance activities, and assessments of performance attainment. This study focuses on environmental influences, particularly those that act as a direct facilitators or deterrents of career choices.

Career interventions may be viewed as environmental supports that strive to assist, reinforce, and encourage students during the process of making academic and career choices (Buescher, Johnston, Lucas, & Hughey, 1989). Considering career interventions in light of Lent et al.’s (1994) SCCT, programs and services offered by college career centers would be anticipated to influence an individual’s internal career choice processes by helping to (a) connect interests to potential personal goals, (b) select personal goals, (c) connect personal goals to potential performance accomplishment activities, and (d) select performance accomplishment activities. These expectations are evidenced in hypotheses set forth by Lent et al., where career interventions can be viewed as an instrumental support system which assists students to uncover and use beneficial opportunities in ways that diminish the influence of career barriers.

Purpose of the Study

This study examined first-year, undecided, college students’ perceptions of and experiences in individual career counseling, which was conceptualized as an environmental
support designed to help students transition to college and to explore academic major and career options. Changes in student perceptions were examined over a full academic year, specifically regarding academic major and career choices, career decision-making self-efficacy, perceptions of career barriers, and perceptions of environmental supports. The study aimed to demonstrate outcomes of participation in individual career counseling, drawing connections to past career intervention outcomes literature. It also aimed to move beyond past outcomes studies, identifying specific, process-oriented aspects of individual career counseling that were influential in supporting college students in making and implementing career choices.

Methods

Participants. Participants were recruited for this study via an eight-week, one-credit university transition course required for all first-year students who identified as undecided regarding a college or academic major upon entering a large, four-year, public university. A total of 847 students (49% of all first-year undecided students) were enrolled in 12 sections of this course during the first half of the semester. While 305 students initially agreed to participate in the study, 130 (42.6% of initial participants) persisted in the study for a full academic year. These 130 students made up the study sample. Participants ranged in age from 18 to 20 years (M = 18.2, SD = 0.47); 63.8% were female and 36.2% were male. Of the participants, 79.2% were White/Caucasian, 16.9% were Asian/Pacific Islanders, 2.3% were Hispanic/Latino(a), and 1.5% were African American.

Procedures. This study used a time-extended, before-and-after, quasi-experimental design (Reichardt & Mark, 1998) to examine student perceptions of individual career counseling. Survey and interview data were collected at three times within the course of the study: (a) at the beginning of students’ first college semester and prior to the intervention, (b) at the end of the
students’ first college semester and two to four weeks following the intervention, and (c) near the end of the students’ second college semester and approximately five to six months after the intervention. All participants were invited to complete the surveys, whereas a purposefully-selected subset of 15 treatment group members and 9 control group members participated in interviews. Selection for interviews was based on the results of the pretest survey. Students’ pretest total scores on the CDSE Scale and CBI-R were graphed on a scatter plot. The researcher then focused on participants with scores on the fringes of the plot, representing four categories: (a) high CDMSE, low perceived barriers; (b) high CDMSE, high perceived barriers; (c) low CDMSE, low perceived barriers; and (d) low CDMSE, high perceived barriers. Variety in gender, ethnicity, and academic majors being considered was also sought across interview participants. This strategy was employed to find a group of students who could bring a wide variety of perceptions and experiences to the interview conversations.

Invitations to participate in the study were extended during weeks 2 and 3 of students’ first college semester. The pretest survey was administered electronically within 48 hours of the study invitation. Pretest interviews were conducted immediately following the surveys. The treatment occurred between weeks 5 and 12 of the first college semester. Posttest surveys were conducted during week 14, and posttest interviews were conducted between weeks 14 and 17 at the end of the first college semester. Delayed posttest surveys and interviews were conducted during the last month of the second college semester.

Of the 305 students who initially agreed to participate in the study, 60 (the maximum possible within resource constraints) were randomly selected to participate in the individual career counseling treatment. The remaining 245 students were assigned to the control group. Of
the 130 participants who persisted in the study for a full academic year, 33 were in the treatment group and 97 were in the control group.

**Career intervention.** The structured career intervention for this study consisted of (a) an initial individual career counseling appointment; (b) a performance accomplishment activity related to the particular student’s unique career development needs; followed by (c) a second individual career counseling appointment to reflect on progress and next steps. Individual career counseling was selected due to its consistent emergence in the literature as an effective intervention strategy for achieving desired outcomes (Hughes & Karp, 2004; Ryan, 1999; Whiston et al., 1998). The inclusion of a performance accomplishment activity was based on research demonstrating that this strategy is capable of enhancing the self-efficacy of career counseling clients (e.g., Bandura, 1986; Diegelman & Subich, 2001; Luzzo & Day, 1999; Luzzo et al., 1999), thereby supporting an individual in making career choices (Betz, 2004, 2007; Lent et al., 1994). Basing the career intervention on components that were shown to be effective in the past was expected to increase the likelihood of observing desired outcomes following the treatment. This facilitated the connections to past career intervention outcomes research, while advancing the literature by examining students’ evolving interpretations of the processes that contribute to those outcomes.

While each individual career counseling appointment was tailored to the individual participant, two of Brown and Ryan Krane’s (2000) critical components of career interventions were present in all of these interactions – individualized interpretations and feedback, and world of work information. The one-on-one interactions between student and career counselor created an environment that allowed discussions and feedback to be tailored to each student. Carrying out performance accomplishment activities encouraged active engagement with resources that
provided information on aspects of the world of work, such as academic majors, classes, career opportunities, and occupational information. Based on student needs, the specific topics covered within individual career counseling appointments varied, and can be considered in the broad categories of: (a) self knowledge, (b) options knowledge, (c) decision making, (d) implementing choices, (e) external pressures and supports, and (f) additional resources and services.

The performance accomplishment activities were designed to encourage participants to get actively involved in career exploration, decision making, or implementation. Sample performance accomplishment activities discussed with the career counselors who offered the treatment for this study included:

- Attending a major- or career-related student organization meeting
- Contacting an alumnus for an information interview about their career
- Talking to a professor or a graduate school representative about educational plans
- Talking with a junior or senior student in a major of interest
- Using an online database to research potential careers
- Reading the job adds in a major newspaper, clipping out everything that sparks his/her interests, and noting the trends in the collection
- Finding a list of employers in a particular field, going to their websites to see what type of entry-level jobs exist and what skills/educational-background they require
- Looking at an internship opportunity and preparing a resume tailored to that position

Some activities commonly recommended by career counselors were not considered strong performance accomplishment activities for this study. For instance, career counselors were discouraged from relying on interest inventories that required counselors to score the results because there would be no opportunity for participants to view results before their second career counseling appointment and, therefore, little opportunity to apply or reflect on the experience. If a counselor-scored interest inventory was deemed the most appropriate next step for a participant, this resource was not withheld. Rather, career counselors were encouraged to suggest both the interest inventory and another activity that actively involved participants in the process of making academic major and career choices.
Survey instruments and data analyses. This study used a demographic questionnaire and two survey instruments, including the Career Decision Self-Efficacy Scale (CDSE Scale; Betz & Taylor, 2001) and the Career Barriers Inventory-Revised (CBI-R; Swanson, 1995b). This section provides an overview of the survey instruments, as well as a discussion of survey data analysis techniques.

Demographic questionnaire. The demographic questionnaire created for this study collected information on the background characteristics of age, gender, citizenship, and ethnicity, as well as the academic majors that students were currently considering. These data were primarily used to describe the sample, as well as to frame the sample within the population.

Career Decision Self-Efficacy Scale-Short Form. The Career Decision Self-Efficacy Scale – Short Form (CDSE Scale) “measures an individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions” (Betz & Taylor, 2006, p. 6). The CDSE Scale has been used in several studies designed to evaluate career development interventions (e.g., Fukuyama, Probert, Neimeyer, Nevill, & Metzler, 1988; Luzzo & Taylor, 1994; Sullivan & Mahalik, 2000; Uffelman, Subich, Diegelman, Wagner, & Bardash, 2004). The scale contains 25 items, which are evenly divided into 5 subscales: self-appraisal, gathering occupational information, goal selection, making plans, and problem solving. Respondents were asked how much confidence they have to complete each of the career decision-making tasks presented. A five-point scale was provided for each item, with possible responses ranging from 1 (no confidence at all) to 5 (complete confidence). Betz, Ham mond, & Mul ton (2005) reported internal reliability scores ranging from .78 to .87 for each subscale, as well as alphas for the full 25-item instrument ranging from .93 to .95. In this current study, across the three survey
administrations, internal reliability scores ranged from .70 to .87 for each subscale, and from .92 to .94 for the full 25-item instrument.

Content validity studies relying on factor analysis have only marginally supported the existence of the five subscales (e.g., Taylor & Betz, 1983; Taylor & Popma, 1990). Betz and Taylor (2006) contend that, despite these findings, the connection of the five factor structure to theory (e.g., career maturity as discussed by Crites, 1969, 1978) has important implications for the design of career development interventions and should therefore remain a part of the instrument. In regards to construct validity, the CDSE Scale has been found to correlate with related constructs such as career indecision (Betz, Klein, & Taylor, 1996; Taylor & Betz, 1983; Taylor & Popma, 1990) and vocational identity (Betz et al., 1996).

**Career Barriers Inventory-Revised.** The Career Barriers Inventory-Revised (CBI-R; Swanson, 1995b) measures the barriers that individuals perceive to their academic and career goals. These barriers are conceptualized as the “external conditions or internal states that make career progress difficult” (Swanson, Daniels, & Tokar, 1996, p. 236). The CBI-R contains 70 possible career barriers that individuals may face, which are divided into 13 subscales. Internal reliability for the subscale items, as reported by Swanson et al., ranges from .64 (disapproval by significant others scale, difficulties with networking / socialization scale) to .86 (sex discrimination scale). Similar scale reliability results have been found in other studies which use this instrument (e.g., Lent et al., 2001; Rivera, 2002; Rivera et al., 2007).

This study used 7 of the 13 CBI-R scales, including: decision-making difficulties (8 items), difficulties with networking or socialization (5 items), disapproval by significant others (3 items), dissatisfaction with career (5 items), inadequate preparation (5 items), job market constraints (4 items), and lack of confidence (4 items). These scales were selected based on a
review of published studies in which some of the subscales were removed from this instrument (e.g., Lent et al., 2001; Quimby & O’Brien, 2004), as well as based on findings from the pilot study for this work which included all 13 subscales. The 7 subscales selected represent those which were determined to be the most relevant and salient to the population for this study, as well as to the intervention being evaluated. A single-response, likelihood scale, format of the CBI-R was used, making the same rating scale choice as Lent et al. (2001), Luzzo & McWhirter (2001), and Rivera et al. (2007). Participants were asked to indicate their expected likelihood of encountering each barrier listed, with possible responses falling on a 7-point scale, ranging from 1 (not likely at all) to 7 (extremely likely). Likelihood scale scores were calculated by summing the response on all scale items and then dividing by the number of items in a scale. In this study, across the three survey administrations, internal reliability scores ranged from .51 to .89 for each subscale, and from .94 to .96 for the total score based on the 7 selected subscales.

Survey data analyses. All survey data were imported into SPSS 18.0 for analyses. For analyses of both the CDSE Scale and the CBI-R, one-way ANOVA with repeated measures were conducted to determine whether statistically significant differences existed between (a) experimental groups – treatment and control; and (b) survey times – pre-test, post-test, and delayed post-test; as well as to (c) identify interactions between experimental groups and survey time. The Greenhouse-Geisser correction was applied when violations of sphericity were detected. Significant differences were further explored via simple effects analyses calculated with t-tests using a Bonferroni adjusted significance level (.05/3 = .017) to account for spurious findings resulting from multiple comparisons (Girden, 1992). For the CDSE Scale, the post-hoc analyses were conducted one-tailed at the .05 level of significance, exploring a potential increase in CDMSE. For the CBI-R, post-hoc analyses were conducted two-tailed at the .05 level of
significance, exploring potential changes in perceived likelihood of encountering career barriers. Finally, for all statistical tests, Cohen’s $d$ effect sizes were calculated to evaluate the size of observed differences. Determinations of small ($d = .2$), medium ($d = .5$), and large ($d = .8$) effects were made based on Cohen’s (1988) conventional definitions.

**Interview procedures and analyses.** The interviews for this study were designed to “describe and understand the meanings of central themes” (Kvale, 1996, p. 31) in participants’ lives as they relate to academic major and career choices. At the beginning of each interview, the researcher reviewed the study purpose and steps taken to protect confidentiality and anonymity with the participant. Permission was sought to audio tape the conversation.

A general interviewing guide set the foundation for the relevant topics to be covered, so that similar inquiry areas were addressed with each participant (Patton, 2002). Considerable flexibility was allowed during each interview to follow the flow of the conversation and topics that sparked interest for the participant. Providing space to follow such emergent topics recognized and valued the expertise that participants brought to the conversation from their unique experiences and ways of constructing meaning (Rubin & Rubin, 2005).

Audio recordings of interviews were transcribed and uploaded into the NVIVO 8.0 qualitative data analysis software package for coding and analysis. The first round of coding transcriptions, conducted concurrently with data collection, was carried out in an emergent fashion, noting primary themes as they evolved within discussions. These emergent codes were used to write contact summary narratives that addressed the primary themes of each interview as generated by each participant (Miles & Huberman, 1984), such as current academic major and career options, perceived career barriers, experiences with support services, and expectations for next steps to explore majors and careers.
At the beginning of each follow-up interview, participants reviewed the contact summary narratives of the previous interview and were encouraged to offer feedback, corrections, and expansions on the themes presented there. The summaries not only served as a resource for member checking initial analyses (Lincoln & Guba, 1985), but also as a prompt for deepening understandings of issues when themes were revisited to consider changes in participants’ interpretations of events and influences over time (Wolcott, 2005). Minor clarifications and revisions were integrated into 7 of the 71 (9.9%) of summaries that were shared with interview participants. The remaining 90.1% of summaries were deemed accurate as originally prepared.

At the completion of data collection, the full interview transcripts were re-coded from a holistic perspective using the coding guide developed based on previous analyses, reflection, and memoing. The coding guide was continuously revised during the analysis process to find an adequate fit with the data from this particular sample of students.

Peer review. At the completion of the data analysis, proposed findings were shared in a three-hour peer review session with the career counselors who provided the treatment for this study. This session provided background information on the study, findings, and interpretations based on the data. The career counselors were encouraged to discuss which findings were surprising and which were expected. They were also asked what the findings meant for them as career counselors and for their work with future students. This session provided an opportunity for career counselors to ask questions, offer their own interpretations of the data, and to elaborate on their experiences as partners in the research study.

Findings

Findings are first presented regarding the career counseling intervention outcomes, specifically examining statistical analyses regarding changes in CDMSE and perceptions of
career barriers. This is followed by an examination of the process elements of career counseling that facilitated the observed outcomes.

**Outcomes.** Table 1 provides a summary of sample sizes, means, and standard deviations found for the total scores on each of three administrations of the CDSE Scale and CBI-R. Results of the ANOVA analyses are provided in Table 2, demonstrating significant main effects and interaction effects found on both inventories. For the CDSE Scale total score, significant main effects were found for the experimental groups, $F(1, 127) = 12.72, p = .001$, and survey time, $F(1.83, 232.46) = 10.03, p = .000$, as well as for the interaction between experimental groups and survey time, $F(1.83, 232.46) = 3.16, p = .049$. For the CBI-R total score, a significant main effect was found for survey time, $F(2, 252) = 7.86, p = .000$, as well as for the interaction between experimental groups and survey time, $F(2, 252) = 3.21, p = .042$. No significant main effect was found for experimental groups for the CBI-R total score. Further post hoc analyses and interpretations of results are discussed in the following subsections.

**Career decision-making self-efficacy.** Post hoc analyses for the experimental groups main effect demonstrated no significant differences on the pretest survey. This indicated that the Table 1

<table>
<thead>
<tr>
<th>Sample Sizes, Means, and Standard Deviations for Instrument Total Scores</th>
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<tbody>
<tr>
<td>Instrument Total Score</td>
</tr>
<tr>
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<tr>
<td>CDSE Scale Total Score</td>
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<tr>
<td>All Participants</td>
</tr>
<tr>
<td>Treatment</td>
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<tr>
<td>Control</td>
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<tr>
<td>CBI-R Total Score</td>
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<td>All Participants</td>
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## Table 2

**ANOVA Analyses for Instrument Total Scores**

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<th>Variable</th>
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<th>MS</th>
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<td></td>
<td>Experimental Groups</td>
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<tr>
<td></td>
<td>Within Subjects a</td>
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<tr>
<td></td>
<td>Survey Time</td>
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<td>1.56</td>
<td>10.03</td>
<td>.000  ***</td>
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<td>0.49</td>
<td>3.16</td>
<td>.049  *</td>
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<td>CBI-R Total Score</td>
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<tr>
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<tr>
<td></td>
<td>Survey Time × Experimental Groups</td>
<td>1.71</td>
<td>2</td>
<td>0.85</td>
<td>3.21</td>
<td>.042  *</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>67.01</td>
<td>252</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Mauchly’s Test indicated that the sphericity assumption was violated. Greenhouse-Geisser test applied.

## Table 3

**Comparisons of Control and Treatment Group Career Decision Self-Efficacy Scale Total Scores for Each Survey Administration**

<table>
<thead>
<tr>
<th>Survey</th>
<th>df</th>
<th>T</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>128</td>
<td>1.85</td>
<td>.022</td>
<td>0.43</td>
</tr>
<tr>
<td>Posttest</td>
<td>127</td>
<td>3.07</td>
<td>.002 **</td>
<td>0.63</td>
</tr>
<tr>
<td>Delayed Posttest</td>
<td>128</td>
<td>3.73</td>
<td>.000 ***</td>
<td>0.79</td>
</tr>
</tbody>
</table>
treatment and control groups began the study expressing similar levels of overall CDMSE. However, significant differences existed between the experimental groups on the posttest survey, \(t(128) = 3.07, p = .002, d = 0.63\), and the delayed posttest survey, \(t(127) = 3.73, p = .000, d = 0.79\), (see Table 3). In both cases, the treatment group reported higher overall CDMSE than the control group. The Cohen’s \(d\) effect size calculations show a medium to large difference between the groups, suggesting the presence of a substantive difference.

Table 4 shows examinations of changes across survey times. The survey time main effect is presented first, demonstrating a significant increase in the CDSE Scale total score across all participants between the pretest and posttest only, \(t(128) = 3.53, p = .001\), but the effect size for this comparison is small (\(d = 0.26\)). This provides limited evidence of an increase in CDSE Scale total scores over the first academic semester. Examining the interaction effects (also shown in Table 4) provides a more nuanced understanding of these changes than the main effects.

A significant increase in the CDSE Scale total score was found for the treatment group between the pretest and posttest, \(t(31) = 3.04, p = .003, d = 0.54\), as well as the pretest and delayed posttest, \(t(32) = 4.00, p = .000, d = 0.66\), both of which were accompanied by medium effect sizes offering compelling evidence of a substantive difference following the treatment. No Table 4

**Paired Samples T-Tests Examining Career Decision Self-Efficacy Scale Total Scores Across Survey Times**

<table>
<thead>
<tr>
<th>Group</th>
<th>Survey Comparison</th>
<th>Mean Difference</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Participants</td>
<td>Pre vs. Post</td>
<td>0.15</td>
<td>0.49</td>
<td>128</td>
<td>3.53</td>
<td>.001</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>Pre vs. Delayed Post</td>
<td>0.00</td>
<td>1.27</td>
<td>127</td>
<td>-0.04</td>
<td>.486</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Post vs. Delayed Post</td>
<td>0.01</td>
<td>0.50</td>
<td>128</td>
<td>0.19</td>
<td>.426</td>
<td>0.01</td>
</tr>
<tr>
<td>Control</td>
<td>Pre vs. Post</td>
<td>0.12</td>
<td>0.49</td>
<td>96</td>
<td>2.38</td>
<td>.010</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>Pre vs. Delayed Post</td>
<td>0.09</td>
<td>0.63</td>
<td>96</td>
<td>1.45</td>
<td>.076</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>Post vs. Delayed Post</td>
<td>-0.03</td>
<td>0.48</td>
<td>96</td>
<td>-0.55</td>
<td>.293</td>
<td>0.04</td>
</tr>
</tbody>
</table>
significant differences were found for the treatment group between the posttest and delayed posttest, suggesting that gains observed immediately following the intervention were maintained, but did not increase, over the second college semester.

A significant increase in the CDSE Scale total score was found for the control group between the pretest and posttest only, \( t(96) = 2.38, p = .010 \), however, the effect size for this test is considerably smaller for the control group \( (d = 0.20) \) as compared to the treatment group \( (d = 0.54) \). Also note that no significant differences were found for the control group between the posttest and delayed posttest, suggesting that gains observed at the end of the first college semester were not maintained through the student’s first college year.

These analyses suggest that some increase in the CDSE Scale total score may be due to maturation in the first college semester, however the treatment group experienced additional CDSE Scale total score increases beyond maturation and maintained those increases throughout their first college year. As indicated by comparisons to the control group, the treatment groups’ gains in overall CDMSE can be reasonably attributed to the treatment.

**Career barriers.** Table 5 shows examinations of changes in perceived career barriers across survey times. The survey time main effect is presented first, demonstrating significant decreases in perceived likelihood of encountering career barriers across all participants between (a) the pretest survey and delayed posttest survey, \( t(127) = -3.90, p = .000, d = 0.27 \); and (b) the posttest survey and delayed posttest survey, \( t(127) = -2.88, p = .005, d = 0.20 \). The effect sizes, however, were small in both cases. This provided limited evidence of a decrease in perceived
career barriers over the second college semester. Examining the interaction effects provided a more nuanced understanding of these changes than the main effects alone.

Table 5

*Paired Samples T-Tests Examining Career Barriers Inventory-Revised Total Scores Across Survey Times*

<table>
<thead>
<tr>
<th>Group</th>
<th>Survey Comparison</th>
<th>Mean Difference</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p(^a)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Participants</td>
<td>Pre vs. Post</td>
<td>-0.03</td>
<td>0.72</td>
<td>129</td>
<td>-0.49</td>
<td>.623</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Pre vs. Delayed Post</td>
<td>-0.25</td>
<td>0.71</td>
<td>127</td>
<td>-3.90</td>
<td>.000***</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>Post vs. Delayed Post</td>
<td>-0.20</td>
<td>0.78</td>
<td>127</td>
<td>-2.88</td>
<td>.005**</td>
<td>0.20</td>
</tr>
<tr>
<td>Control</td>
<td>Pre vs. Post</td>
<td>0.07</td>
<td>0.72</td>
<td>96</td>
<td>0.93</td>
<td>.353</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Pre vs. Delayed Post</td>
<td>-0.20</td>
<td>0.72</td>
<td>94</td>
<td>-2.67</td>
<td>.009**</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Post vs. Delayed Post</td>
<td>-0.25</td>
<td>0.81</td>
<td>94</td>
<td>-2.96</td>
<td>.004**</td>
<td>0.25</td>
</tr>
<tr>
<td>Treatment</td>
<td>Pre vs. Post</td>
<td>-0.32</td>
<td>0.63</td>
<td>32</td>
<td>-2.95</td>
<td>.006**</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>Pre vs. Delayed Post</td>
<td>-0.39</td>
<td>0.69</td>
<td>32</td>
<td>-3.24</td>
<td>.003**</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>Post vs. Delayed Post</td>
<td>-0.06</td>
<td>0.68</td>
<td>32</td>
<td>-0.53</td>
<td>.600</td>
<td>0.07</td>
</tr>
</tbody>
</table>

A significant decrease in the CBI-R total score was found for the treatment group between the pretest and posttest, \(t(32) = -2.95, p = .006, d = 0.36\), as well as the pretest and delayed posttest, \(t(32) = -3.24, p = .003, d = 0.45\), both of which were accompanied by small-to-medium effect sizes offering evidence of a substantive difference in perceptions of career barriers following the treatment. No significant differences were found for the treatment group between the posttest and delayed posttest, suggesting that gains observed immediately following the intervention were maintained, but did not change, over the second college semester.

A significant decrease in the CBI-R total score was found for the control group between the pretest and delayed posttest, \(t(94) = -2.67, p = .009, d = 0.21\), as well as the posttest and
delayed posttest, $t(94) = -2.96, p = .004, d = 0.25$, however the effect sizes were considerably smaller for the control group as compared to the treatment group. Also note that no significant differences were found for the control group between the pretest and posttest, suggesting that decreases in perceptions of career barriers for the control group occurred during the second college semester, rather than the first college semester, as was the case for the treatment group.

These analyses suggest that some decreases in the CBI-R total score occurred during the second college semester due to maturation. However, the treatment group experienced their decreases in perceived career barriers during the first college semester. Significant differences in perceived barriers were not found between the treatment and control groups on any single survey administration (no main effect for experimental groups), suggesting that the experimental groups started and ended with similar perceptions regarding the likelihood of encountering career barriers. However, based on the interaction effects analysis, it seems that the treatment group participants experienced decreases in perceived career barriers earlier in their first college year than did control group participants, and those earlier decreases can be reasonably attributed to the treatment.

**Process.** Analyses regarding the process of career counseling interventions are presented from two standpoints. First, the components of career counseling that emerged as particularly influential for interview participants are explored. This is followed by an examination of interview participants’ expressions of where in the career choice process the influence of career counseling was experienced.

**Influential components of career counseling.** Three components of career counseling emerged as particularly influential for participants: (a) resources and world of work information, (b) career counselor-client relationships, and (c) performance accomplishment activities.
Resources and world of work information. Treatment group participants unanimously discussed their career counseling experiences in terms of the resources and world of work information they gained. They made sense of their experiences via the concrete resources that they could reference. These resources came in a wide variety of formats (e.g., print materials, websites, events and programs on campus) and covered an array of topics (e.g., information on academic majors, recommended courses, linking majors to careers, internship and job postings, networking contacts). For example, Gina spoke of the print resources that she gathered:

I got a sheet of the breakdown of – that this is where you wanna go and this is the classes you should take. And then I – there was the major fair – like the majors and minors fair which I attended. And I picked up a bunch of sheets from bio and chem. And I looked at – I think I even looked at maybe psychology... I have a lot of sheets that I could go through and see what I like.

However, resources alone were not sufficient for bringing about positive outcomes from participating in career counseling. In fact, as demonstrated in conversations with Gina, resources alone could have a negative influence, leaving students more overwhelmed and less confident in their abilities to make career choices than prior to their individual career counseling experiences. In her immediate posttest interview, Gina described her experiences as being primarily resource-focused. She said that her career counseling appointments, which were scheduled for 45-minutes, lasted:

Maybe about 15 minutes I’d say... I was in and out. I got the sheet with the pre-med stuff, and then a little – explain here, “Most people go into bio and have a chem minor,” and stuff like that. That’s what most pre-med students do. I got the basics.

By the end of her first college year, Gina was left feeling more overwhelmed and less confident in her abilities to make career choices than prior to their individual career counseling experiences. She expressed that: “I have a lot of information, but it doesn't seem to soak in. I'm aware of it, but I don't know what to do with it. I don't know what I'm supposed to do with it.”
Relationships and rapport building. The relationship established between the career counselor and student emerged as a central component of the process, both in what participants desired from individual career counseling (shared in pretest interviews) and in their reflections on their experiences (shared in posttest and delayed posttest interviews). Prior to their career counseling experiences, participants often framed their expectations for interactions with career counselors within an interpersonal relationship. Adam was motivated to find “somebody to help direct me where I’m going…someone to talk it through with” in a confidential and casual environment. He liked the idea of talking through his thoughts and options in a low-pressure interaction – “they’re there to help me. It’s not like I need to impress them or anything.” – which provided a sense of freedom to explore his developing, unfinished ideas. Similarly, Kari sought a relationship with “someone who knows what they’re talking about;” she desired personalized information regarding “where I would be good at, what I would be good at” that a one-on-one interaction would facilitate. Grant viewed his relationship with a career counselor as an interaction with “a third party that could just shoot me straight… unbiased sources,” as opposed to departmental advisors and representatives who may be “trying to sell you on why you should try this major out.”

Following their career counseling experiences, participants generally described how their major and career exploration was facilitated by relationships with career counselors that were marked by openness, attentiveness to students needs, and invitations to return for additional assistance. Beth described an open, flexible, easy-going conversation with her career counselor – “she had a really good personality and was easy to talk too, really friendly… I think it was a really good experience just talking with her and exploring all the avenues that I have.” Denise
was impressed by the environment created by her career counselor in which she felt comfortable and invited to address any needs that were on her mind:

[The career counselor] was pretty open. He was like, “Is there anything else you want to talk about? Is there anything,” you know, because it wasn’t like okay, well, we’re just gonna discuss this and that’s it. He was definitely asking me, “Is there anything else you want?”

For Denise, this invitation communicated that the career center was a safe space to seek support and assistance. Invitations such as this were supported by a sense of counselors being genuinely interested in and attentive to participants’ stories. Jennifer, who had a number of lackluster experiences with academic and career advisors in the past, expressed relief at finding a career counselor that took time to get to know her:

[The career counselor] made sure that everything was kind of settled and then talked about what we were going to do next time... he actually listened to what I was talking about and made sure, he had everything together when I came in and actually took time to hear what I was saying.

Jennifer felt validated and heard by the career counselor, which set a foundation for her to derive other benefits from the experience. Finally, several students mentioned appreciating the opportunity to connect with a career counselor who knew their personal story and actively invited them to return in the future. For instance, Kari stated, with a hint of surprise in her voice, that her career counselor “actually gave me her card and said she's available if I needed another appointment, so yeah, very helpful. I'm gonna take her up on it definitely.” Invitations to return suggested to students that their needs were important, they were valued as individuals, and as described by Derek, “gave me hope in the sense that there’s help. So if I ever need more help, I know where to look.”

Performance accomplishment activities. Of the 15 treatment group members who participated in interviews, 11 made direct references to engaging in performance accomplishment activities when discussing the contributions of individual career counseling to
their ability to confidently engage in career decision making. For example, Hailey appreciated the push from her career counselor to take an active role to explore options:

I liked that she kind of gave me homework to go to different meetings and do some exploring and stuff. I really liked that she didn’t just tell me things. She kind of led me to do some soul searching, I guess, and I liked that. As Hailey embraced major exploration tasks in ways that felt personally meaningful and relevant, her confidence in her ability to select a major also grew. By the end of her first college year, Kari expressed enthusiasm regarding her choice of a psychology major: “something clicked this semester, and I got really excited…. This is my goal… I'm ready for it.”

Approximately half of the treatment group participants acknowledged that the most helpful aspect of their career counseling experience was engaging in activities designed to help them explore academic majors and career options. Denise described the performance accomplishment activity of creating a college resume as the most meaningful part of her career counseling experiences:

The best part [of career counseling was] probably the resume. Doing that and just kind of going over and not only seeing everything that I’ve done, but just kind of like realizing that there’s still a lot more that I can do and how to build a resume. And just like knowing, okay, now I have something good that when I turn it in I can feel confident when I hand it over instead of I hope this is good enough…

It wasn’t just the product of it; it was more of like “okay, these are my experiences,” and just reminded me of what I’ve done and also let me know what I should do or if I want to join more programs or just do more within the program I’m in, that kind of thing.

While Denise appreciated the product of a completed resume that she could feel confident about, the process of actively working with the career counselor on her resume “made the difference” due to the reflections and learning opportunities that helped her recognize strengths and plan next steps to pursue major and career options.

When applicable, interview participants’ discussions of sources of CDMSE were also considered in relation to the types of environmental supports that students engaged. When
interview participants reflected on career counseling experiences in relation to beliefs in their ability to confidently engage in academic and career choice tasks, 69% of the CDMSE reflections included reference to performance accomplishment activities. In contrast, only 5% of CDMSE reflections drawn from campus support services other than career services (e.g., academic advising, departmental advising, residence life) contained references to performance accomplishment activities. This finding is particularly striking in light of the types of support services that participants relied on and found salient to their major exploration. While all treatment group interviewees discussed engagement with career services, only 1 (11%) interviewee from the control group engaged career services during her first college year. On the other hand, more control group interviewees (89%) reflected on support services other than career services than did treatment group interviewees (73%). The prevalence with which students reflected on performance accomplishment activities in relation to environmental supports stood out as a prominent difference between individual career counseling and other support services.

Areas of influence. Interview participants indicated that they understood their individual career counseling experiences to influence them in ways that are outlined by SCCT. This is demonstrated in the first three subsections below, including discussions of influences on (a) connecting interests and skills to options, (b) decision making and goal setting, and (c) selecting and implementing performance accomplishment activities. Participants’ reflections also went beyond the influences emphasized by SCCT. The final subsection explores situations in which individual career counseling helped students interpret past experiences with performance accomplishment activities in ways that led to new insights that influenced their major and career choice processes.
Connecting interests and skills to options. Nearly all of the treatment group participants shared how their career counseling experiences helped them to gain a deeper understanding of personal interests and skills, as well as an expanded understanding of major and career options. Kari provided a thought-provoking example of a genuine partnership with her career counselor which began with an exploration of self that was later connected to options. Note the use of “we” as Kari describes her experiences, indicating the integral role of the career counselor in the way that Kari processed information. Kari stated that “we went through how I am as a person and really applied it to what’s out there career-wise... the characteristics and stuff that I need, the skills I have.” As Kari narrowed her options down to a major in kinesiology, she reflected that “we just pinpointed my interest in it.” She was further motivated by the variety of potential careers that a kinesiology major could lead to – “we found that there’s more that I could look at through kinesiology” than she originally expected. Kari viewed her experience as one of joint discovery between the career counselor and herself. As Kari looked up potential classes, student organizations, job shadowing opportunities, and internships, the career counselor helped Kari to put the information into perspective for her own life. As a result, Kari expanded her view of viable career options. Whereas previously she only thought of pursuing a career in physical therapy, she came to see alternative opportunities in areas such as radiology and training. This led to a “bigger connection” to the thought of pursuing a kinesiology major because it could lead to several “ways I can go with it if something doesn’t go as I planned.”

Decision making and goal setting. A third of the treatment group participants who participated in interviews stated that their career counseling experiences directly contributed to their choice of an academic major, whereas others focused on how career counseling helped them to set goals to reach desired milestones. For example, Nikki shared that she had previously
been wavering between a major in architecture or mathematics. Through individual career counseling, Nikki came to see that she “likes building things” more than working with abstract numbers. As a result, she decided to apply to the architecture program during her second semester. Nikki reflected that without attending individual career counseling in her first semester she would not have been ready for the architecture program’s application deadline.

Jennifer’s performance accomplishment activity was to gather information on potential careers associated with the majors she was considering. She was surprised to find out “how many different areas you can go with your majors. I didn’t know there were that many options.” Jennifer found it easier to cross potential careers off her list than it was to narrow down a list of potential majors without that context. The results were quite informative:

- All the stuff for history, all I would want to do would be teach and then in art, it would be art education and working in a museum or something, like archiving. And then religious studies wasn’t on the website, so nothing was really there. And communications – everyone was talking about how they loved communications and I didn’t like any of the areas so that whole major was gone. And then there was another one – like psych, I crossed off a bunch of the areas over there except for like counseling and group work… Even sociology, not all the stuff on there I wanted to do.

However, Jennifer found a connection when she came across careers related to social work – “all of them I wanted to do.” With this information about options, Jennifer and her career counselor then discussed “what I liked to do and what I was good at and what I didn’t like to do and basically what I never wanted to do,” comparing Jennifer’s understanding of her interests and skills to opportunities in fields related to social work. Together with her career counselor, Jennifer outlined a number of goals to lead her to a career in social work, including: (a) pursuing an undergraduate major in psychology, (b) seeking internship experiences in “a group home or a mission and then get some hands on experience in social work,” and (c) pursuing a master’s degree in social work.
Selecting and implementing performance accomplishment activities. Nearly all of the treatment group interviewees reflected on the role that career counseling played to help them select next step activities to further explore majors and careers beyond the career intervention within this study. The selected activities varied widely, from writing or updating a resume, to attending information sessions on academic majors, to selecting classes to explore major options, to getting involved in academically-related student organizations, to seeking job shadowing and internship opportunities.

Jacob provided an example of how discussions with career counselors led to new understandings of areas to expand their experience and involvement:

Once you get to sophomore year I think it is, none of the high school stuff is even looked at, which kind of stinks because I was involved in a lot and I was hoping that would help towards college, but I guess that’s just another reason to get more involved in everything…Once I get up to the next level I'm gonna have to have a resume if I want to have an internship or an actual job in something that's involved with my major.

Recognizing this need early in his first college semester gave Jacob “another good step toward the future” as he understood the importance of continuous action and involvement. During his second semester, Jacob sought internship opportunities for the summer by directly emailing and calling a few architecture firms. While he was not enthusiastic about his chances of finding a position (“I haven’t heard anything back yet. I don’t know. I probably won’t get it now because I am the first year and I hadn’t really had any classes underneath my belt.”), he developed a back-up plan to work with a contractor to get more hands-on experience in an area related to his field of interest.

Interpretations of performance accomplishment activities. Three interview participants expressed that their individual career counseling experiences played an important role in helping interpret past activities that they engaged for major and career exploration. Emily described how
her career counselor helped her find patterns in her past experiences, while Denise and Adam benefited from the broad perspective that their career counselors provided regarding their current progress on career-related tasks.

Emily came to college debating between majors in business and engineering. For her, the common denominator between the two paths was her natural understanding and enjoyment of mathematics and working with numbers. As a part of her individual career counseling experiences, Emily created her first professional resume including experiences from both high school (e.g., president of the debate club) and college (e.g., newsletter editor for a Chinese students’ association). Through this activity her career counselor helped her to draw connections between her past experiences and potential majors:

Emily: [The career counselor] kind of give me a support for – I'm pursuing [a business] major because from my former experiences in high school and my leadership in high school something, he think I should major in business.

Interviewer: I see. So what kinds of things were on your resume?

Emily: Something like peer leaders and the club president for before I was in high school and something like the debate club and something. Yeah. It's pretty good because most of the things are focused on communication and for the business stuff. So it's like prerequisite. So it's pretty good.

Emily’s selection of a business major stemmed from her experiences with a career counselor who helped her interpret how her past experiences and successes connected to potential future directions.

Denise and Adam expressed an increased sense of security and confidence derived from their experiences in which career counselors provided context for their progress by drawing comparisons to other first-year students. Adam expressed initial concern about being “underprepared” to participate in career counseling, stating: “I don’t even know what I should go
in to it thinking.” However, he was pleasantly surprised to discover how well he could articulate his thoughts on interests and skills, as well as the majors he was considering. Adam boasted that he made the appointment “pretty easy on [the career counselor]… it was really easy because I had such good ideas.” Additionally, he was pleased with the feedback that he received from his career counselor. He reflected that:

She basically told me that I was in a real good position compared to a lot of people who still aren’t sure. And she basically gave me confidence, and I know what I’m doing now. I have my options. I know what I want to get into. I know what classes I need to take. So since I have that under my belt, she was like I’m going in a good direction. So that’s why I feel more comfortable now.

Adam left his individual career counseling experiences feeling “reassured” that he was “on the right path.” Similarly, Denise expressed relief to hear that, after talking about her work experiences and resume, her career counselor felt she was “on track” for her freshman year:

[The career counselor] said he thinks I’m pretty much on track, so I think that was pretty good to hear because I was worrying. But he said as a freshman I’m doing pretty well… It felt good to hear that. Sometimes you just kind of doubt yourself, especially in a large university like this.

Giving Denise some basis for comparison to her peers allowed her to normalize her worries and experiences, as well as to develop a sense of confidence to push forward.

**Discussion**

The study aimed to understand the aspects of individual career counseling that were particularly influential in facilitating desirable outcomes. To that end, it first demonstrated the achievement of outcomes based on established measures including the CDSE Scale and the CBI-R. Then, a qualitative exploration of process offered insights into key intervention components, as well as where in the career choice process career counseling made a difference. This section connects the findings of the current study to past research, in addition to acknowledging limitations and suggesting implications for practice and future research.
Outcomes. In many ways, this study found outcomes of participating in individual career counseling with performance accomplishment activities that are consistent with past research. For example, the survey data analyses found that treatment group participants experienced an increase in CDMSE beyond that expected due to maturation. Past studies examining CDMSE with the exact career intervention of individual career counseling with performance accomplishment activities had not been reported in past literature for comparison to this study. However, this study’s findings complimented past studies that reported increases in CDMSE related to career interventions with similar components, including individual career counseling (e.g., Krieshok, Ulven, Hecox, & Wettersten, 2000; Luzzo & Day, 1999; Luzzo & Taylor, 1994; Uffelman et al., 2004) and examination of Bandura’s theorized sources of self-efficacy (e.g., Foltz & Luzzo, 1998; Foss & Slaney, 1986; Krieshok et al., 2000; Luzzo & Taylor, 1994; O’Brien et al., 2000; Sullivan & Mahalik, 2000). This confirming evidence suggests that individual career counseling, which incorporates performance accomplishment tasks, helps increase students’ confidence in their ability to successfully complete tasks necessary to make and implement career choices.

Examining changes in career barriers perceptions as an outcome of career counseling interventions has rarely been addressed in the literature, making this analysis an important contribution of the current study. McWhirter, Rasheed, & Crothers (2000) examined the outcomes of a 9-week career education class for high school sophomores, finding no difference between the treatment and control groups before or after the intervention. However, differences were found between the pre-test and post-test for the combined treatment and control groups. McWhirter et al. attributed the change to passage of time in the new school year, resulting in participants’ increased familiarity with their schedules and the expectations placed on them as
students. The current study’s observation of a significant decrease in CBI-R total scores during the second college semester found for the control group may be attributed to similar influences. Transitioning to college is a stressful time for many students, heightening concerns that may have been reflected in the participants’ pre-test surveys. By the end of the first college year, participants generally had a better sense of the academic environment and the expectations that would be placed upon them, as well as some successful college experiences to reflect upon. This may have decreased their concerns regarding potential career barriers. Results of this study also showed that the treatment group participants experienced a decrease in perceived career barriers earlier in the academic year than control group participants. Significant differences in the treatment groups’ CBI-R total scores were observed during the first college semester and those changes were maintained over the second college semester. These findings, although exploratory and limited, suggest that individual career counseling may, in fact, influence students’ perceptions of career barriers in ways that lessen the perceived likelihood of encountering struggles as they worked toward achieving their goals.

Components of career counseling. Confirming Ryan (1999) and Brown and Ryan Krane’s (2000) key components for career interventions, treatment group participants unanimously described their individual career counseling experiences in terms of the resources and information that they gained. These resources came in a wide variety of formats (e.g., print materials, websites, events and programs on campus) and covered an array of topics (e.g., information on academic majors, recommended courses, linking majors to careers, internship and job postings, networking contacts). However, resources alone were not sufficient for bringing about positive outcomes.
Career counselor-participant relationships that were marked by perceived qualities of openness, attentiveness, willingness to listen, and ongoing invitations offering assistance, facilitated major and career exploration. Within these relationships, participants looked to career counselors as experts who could help them break the challenging process of choosing a major and career into manageable tasks, apply new knowledge and resources to their own lives, and explain options and strategies for achieving goals. Strong relationships with career counselors often facilitated participants’ desired feelings such as validation, hope, excitement, and motivation. Though building a strong relationship and rapport with clients is a foundational component of many counseling and career development approaches (see, for example, Corey, 2001; Harris-Bowlsbey, Suddarth, & Reile, 2005), relationship qualities such as those that emerged in this study have not had a strong presence in literature evaluating career interventions, and may offer interesting directions for scholarship.

This study also found support for including performance accomplishment activities as a component of career interventions, complementing the work of Luzzo et al. (1999) and Luzzo and Day (1999). The majority of treatment group interviewees made direct references to engaging in performance accomplishment activities when discussing the contributions of individual career counseling to their ability to confidently engage in career decision making. Approximately half of the treatment group participants acknowledged that the most helpful aspect of their career counseling experience was engaging in activities designed to help them explore academic majors and career options. Participants appreciated both the “extra push” to try a career-related task (e.g., exploring careers that relate to majors, writing a resume, attending a meeting of an academic student organization) and the opportunity to discuss their experiences with a career counselor afterwards. This structure of embedding performance accomplishment
activities within the individual career counseling experiences provided students with two types of feedback on their actions: (a) personal reflections on their performance and experiences, and (b) insights from a career counselor who could help deepen their understanding of their experience, make comparisons to peers, and discuss potential next steps. Additionally, participants discussed performance accomplishment activities with much greater prevalence when reflecting on individual career counseling experiences (69% of examples) than when reflecting on interactions with other campus-based support services (5% of examples). This finding stood out as the prominent difference between individual career counseling and other support services. Noting that performance accomplishment activities have been theorized to be the most powerful self-efficacy source due to their basis in authentic, hands-on experiences (Bandura, 1986, 1997), this environmental characteristic of career counseling experiences emerged as a possible contributor to the observed differences in CDMSE between the treatment and control groups on the post-test and delayed post-test surveys.

**Areas of influence.** Within the research interviews, treatment group participants shared their perspectives regarding how individual career counseling contributed to their career choices. Many of the connections made by students were congruent with areas of influence theorized by SCCT (Lent et al., 1994). Individual career counseling helped students connect interests and skills to options, set goals, and select and implement performance accomplishment activities. An additional path of influence, not present in Lent et al.’s original model, was also uncovered in participants’ discussions. Of the 15 treatment group members who participated in interviews, 3 participants shared situations in which their career counselor helped them reflect on past performance accomplishment activities, interpreting those experiences in a broader context and reinterpreting the successful nature of those actions. These reinterpretations became embedded in
the students’ career choice process as additional sources of self-efficacy and outcome expectations. As such, it appears possible that an additional path exists in which environmental supports may influence an individual’s career choice process. Following Lent et al.’s structure of hypotheses regarding environmental influences, an additional hypothesis may be presented as follows: “The relation of performance attainment to self-efficacy and outcome expectations may be moderated by environmental supports, which can influence interpretations of performance attainment activities as successes or failures.” Additional research is needed to test this proposed hypothesis.

**Limitations.** Focusing on a single, purposefully-selected institution facilitated the implementation of this study. The university that served as the location for this study is a large, public, selective, and predominantly white institution. Findings may be expected to differ if this study were carried out at another institutional type.

Participation in this study was voluntary and self-selected. Participants dedicated a considerable amount of time and persistence over a full academic year, and attrition was recognized as an issue. Additionally, it would not have been ethical to deter students in the control group from using career services or to deter students in the treatment group from using career services beyond those provided by the study’s intervention. Use of career services outside of the study could potentially skew the results. To assist with this limitation, career center usage was tracked for all participants and few concerns were raised by these data (see Makela, 2011). Interviews with both treatment and control group members assisted in identifying other sources of environmental supports that may influence major and career choices.

Finally, a single career intervention type consisting of individual career counseling appointments with accompanying performance accomplishment activities was selected for this
study. This selection was made based on intervention components that have facilitated achievement of relevant outcomes in past research (e.g., Brown & Ryan Krane, 2000; Luzzo et al., 1999; Oliver & Spokane, 1988; Whiston et al., 1998). This design decision was expected to increase the likelihood of observing desired outcomes following the treatment, thus allowing this study to connect to past career intervention outcomes research, while advancing the literature by examining students’ interpretations of the processes that may contribute to those outcomes. It is important to recognize that this is a time- and counselor-intensive intervention choice. Caution is recommended in making generalizations to other types of career interventions (e.g., workshops, computer assisted career guidance, self-directed approaches).

Implications for practitioners. Career professionals are encouraged to recognize the importance of incorporating resources and world of work information into career interventions as concrete tools that students can use to understand their experiences and career progress. Yet, it is also important to acknowledge that resources, in many cases, are not sufficient on their own. Focusing on building relationships and rapport with students, encouraging active involvement via performance accomplishment activities, and offering opportunities to reflect on past experiences are also key components of delivering career interventions that lead to favorable outcomes. Finally, providing assistance with developing support networks, both within and beyond career centers, can help students to maintain gains made during career interventions and to build upon those gains in the future.

Directions for future research. This study points to several interesting topics for future exploration. Evidence emerged to suggest that career counseling helped participants reflect on past performance accomplishment activities, interpreting these experiences in a broader context and reinterpreting the successful nature of students’ actions. These reinterpretations became
embedded in the students’ career choice processes as additional sources of self-efficacy and outcome expectations. As such, the data analyses suggested an extension of current theoretical understandings described by SCCT, showing an additional path of influence between environmental influences and the individual career choice process. If reflection opportunities with an environmental support do, in fact, signal a space for influence, this new theoretical connection could affect the way that researchers and practitioners think about engaging college students. It would signal a need to focus on follow-up interactions that allow space for guided reflection, such as return appointments, journaling, and written exercises for career exploration. Further research is recommended to explore this connection.

This study also offers evidence of the importance of considering environmental supports in the career choice process. While this topic has not sustained a research focus in the past (Lent, Brown, & Hackett, 2000), the limited research that is available has shown environmental supports to be consistently influential in the career choice process (Brown & Ryan Krane, 2000). As suggested by many scholars (e.g., Borgen & Maglio, 2007; Brown & Ryan Krane, 2000; Lent & Brown, 2006; McWhirter, Torres, Salgado, & Valdez, 2007), examining support networks, and the role of career counseling in developing these networks, is a promising area for future research.

Additionally, there remains a great need to diversify the research available regarding career intervention outcomes and process, a suggestion offered by several other scholars (e.g., Bernes, Bardick, & Orr, 2007; Whiston et al., 1988). In this sense, this current study was limited (focusing on one client population at one university, addressing one type of career choice via one intervention type, etc). Some possible directions for diversifying research include (a) examining the outcomes and process of multiple career intervention types (e.g., workshops, career classes),
(b) focusing on different career choices (e.g., finding a job, making mid-career changes), (c) including in a variety of environments (e.g., community colleges, liberal arts colleges), and (d) focusing on diverse populations (e.g., age, gender, race, ethnicity, socioeconomic status, geographic location).

Finally, this study contributed to the career intervention literature by not only demonstrating the outcomes of individual career counseling, but by seeking elements of the counseling process that contributed to observed outcomes. The design of this study can serve as a template for future research to consider integrating qualitative methods, mixed methods, and longitudinal elements into research projects and agendas. While this study provided an intriguing start, a great need remains for additional nuanced understandings of the process by which career interventions influence clients in order to help career professionals in higher education understand how to best support students to make career choices and persist to their academic and career goals.
References


