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The Decision Space Worksheet, the Career Thoughts Inventory, and the Beck Depression Inventory-II as Measures of Mental Health in the Career Decision-Making Process

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THE DECISION SPACE WORKSHEET, THE CAREER THOUGHTS INVENTORY, AND
THE BECK DEPRESSION INVENTORY-II AS MEASURES OF MENTAL HEALTH IN
THE CAREER DECISION-MAKING PROCESS

By

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This dissertation is dedicated to my daughters, Taylor, Courtney, and Halle. My journey started with the birth of my first baby girl. It was my love and commitment to make a better life for the three of you that led me down this path. What I did not realize was the gift I would receive was far greater than anything I could ever give to the three of you. Thank you for making me always strive to be a better person and mother.
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<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables ................................................................. viii</td>
</tr>
<tr>
<td>List of Figures ................................................................. ix</td>
</tr>
<tr>
<td>ABSTRACT ................................................................................ x</td>
</tr>
<tr>
<td>CHAPTER I: INTRODUCTION .............................................................. 1</td>
</tr>
<tr>
<td>Social Problem ........................................................................... 2</td>
</tr>
<tr>
<td>Professional Problem ............................................................... 2</td>
</tr>
<tr>
<td>Study, Research Questions, and Hypotheses ................................. 3</td>
</tr>
<tr>
<td>Decision Space Worksheet ......................................................... 4</td>
</tr>
<tr>
<td>BDI-II ..................................................................................... 5</td>
</tr>
<tr>
<td>CTI ....................................................................................... 5</td>
</tr>
<tr>
<td>Readiness ................................................................................. 6</td>
</tr>
<tr>
<td>Occupational Alternatives Question .......................................... 6</td>
</tr>
<tr>
<td>Theory ...................................................................................... 6</td>
</tr>
<tr>
<td>Definitions ............................................................................... 9</td>
</tr>
<tr>
<td>Assumptions ........................................................................... 11</td>
</tr>
<tr>
<td>Delimitations ........................................................................ 12</td>
</tr>
<tr>
<td>Significance of Study ............................................................. 12</td>
</tr>
<tr>
<td>CHAPTER II: LITERATURE REVIEW .............................................. 13</td>
</tr>
<tr>
<td>Career Counseling Theories ....................................................... 13</td>
</tr>
<tr>
<td>Career Counseling Assessment ................................................ 14</td>
</tr>
<tr>
<td>Career Counseling Intervention ............................................... 15</td>
</tr>
<tr>
<td>Decision Space Worksheet ......................................................... 17</td>
</tr>
<tr>
<td>Cognitive Assessment .............................................................. 18</td>
</tr>
<tr>
<td>DSW Assessment Procedures .................................................... 19</td>
</tr>
<tr>
<td>Cognitive Information Processing Theory ................................... 20</td>
</tr>
<tr>
<td>Two-Dimension Model of Readiness ............................................ 21</td>
</tr>
<tr>
<td>Career Decision State .............................................................. 23</td>
</tr>
<tr>
<td>Mental Health Issues/Depression and Career Decision .................. 23</td>
</tr>
<tr>
<td>Depression ............................................................................. 24</td>
</tr>
<tr>
<td>Critical Analysis of the Literature ............................................. 25</td>
</tr>
<tr>
<td>Research Question</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Specific Research Questions and Hypotheses</td>
</tr>
<tr>
<td>CHAPTER III: METHODOLOGY</td>
</tr>
<tr>
<td>Participants</td>
</tr>
<tr>
<td>Procedure</td>
</tr>
<tr>
<td>Instruments</td>
</tr>
<tr>
<td>Cognitive Thoughts Inventory</td>
</tr>
<tr>
<td>Demographic Questionnaire</td>
</tr>
<tr>
<td>Occupational Alternatives Question</td>
</tr>
<tr>
<td>Beck Depression Inventory II</td>
</tr>
<tr>
<td>Decision Space Worksheet</td>
</tr>
<tr>
<td>Research Design and Analyses</td>
</tr>
<tr>
<td>Research Design</td>
</tr>
<tr>
<td>Statistical Analyses</td>
</tr>
<tr>
<td>CHAPTER IV: RESULTS</td>
</tr>
<tr>
<td>Research Question One</td>
</tr>
<tr>
<td>Research Question Two</td>
</tr>
<tr>
<td>Research Question Three</td>
</tr>
<tr>
<td>Research Question Four</td>
</tr>
<tr>
<td>Research Question Five</td>
</tr>
<tr>
<td>Additional Findings</td>
</tr>
<tr>
<td>CHAPTER V: DISCUSSION</td>
</tr>
<tr>
<td>Summary of Findings</td>
</tr>
<tr>
<td>Research Question One</td>
</tr>
<tr>
<td>Research Question Two</td>
</tr>
<tr>
<td>Research Question Three</td>
</tr>
<tr>
<td>Research Question Four</td>
</tr>
<tr>
<td>Research Question Five</td>
</tr>
<tr>
<td>Additional Findings</td>
</tr>
<tr>
<td>Limitations of the Study</td>
</tr>
<tr>
<td>Implications</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1. Participant Demographics........................................................................................................30
Table 2. Classification Code of Thoughts, Feelings, Events, Circumstances, and Individuals
Listed on the Decision Space Worksheet.............................................................................................37
Table 3. DSW Means, Standard Deviations, and Ranges - Including Zero Data.................................41
Table 4. DSW Means, Standard Deviations, and Ranges - Excluding Zero Data.................................42
Table 5. Correlations between Overall DSW Map and BDI-II .........................................................44
Table 6. Correlations between DSW Domains and BDI-II ..............................................................45
Table 7. Bivariate Correlations.......................................................................................................46
Table 8. Linear Regression Analysis with CTI, DSW, and OAQ as Predictors of the BDI-II..............46
Table 9. BDI-II High and Low groups and DSW Domain Means and Standard Deviations ..........47
Table 10. OAQ Undecided and Decided groups and DSW Domain Means and Standard
Deviations ........................................................................................................................................49
Table 11. DSW Non-Classifiable Statements..................................................................................50
LIST OF FIGURES

Figure 1. Pyramid of Information Processing Domains .................................................................7
Figure 2. The Five Stages of the CASVE Cycle of Decision Making Skills Used in Career Decision Making .................................................................................................................9
Figure 3. Two-Dimensional Model of Readiness for Career Decision Making .........................22
Figure 4. DSW Domains Mean Circle Representation of Space Utilized .................................43
ABSTRACT

At the outset of career counseling, clarifying the nature of an individual’s career problem is vital in order to ascertain the appropriate initial steps of the career intervention (Sampson, Peterson, Reardon, & Lenz, 2000; Spokane, 1991). Identifying and assessing client needs at the beginning of the career service delivery process ensures that services are appropriately aligned with these needs (Gati, Gadassi, Saka, Hadadi, Ansenberg, Friedmann, & Asulin-Peretz, 1996; Sampson et al., 2000; Sampson & Reardon, 1998; Savickas, 1996; Super, 1983). During the initial client assessment, it is also important to address mental health issues, as prior research has shown clients having difficulty making career decisions often endorse items related to depression or anxiety (Saunders, Peterson, Sampson, & Reardon, 2000). The Decision Space Worksheet (DSW) is a projective assessment technique that assists clients in understanding the social and emotional context involved in the career decision-making process. In addition, the DSW may also function as a possible indicator of mental health issues out of which a career problem arises (Peterson, Leasure, Carr, & Lenz, 2009). Utilizing the DSW, Career Thoughts Inventory (CTI), and Occupational Alternatives Question (OAQ) at the outset of career counseling could be useful in identifying individuals who are experiencing mental health issues (Lenz, Peterson, Reardon, & Saunders, 2010; Peterson et al., 2009; Walker & Peterson, 2011).

This study examines the social and emotional context as portrayed by the DSW, in addition to career thoughts and career decidedness, as possible indicators of mental health issues in career counseling. Specifically, the question addressed by this study was, “What is the relationship between responses on the DSW and the presence of depressive symptomology?”

To answer this question, data were collected for a co-relational study from a sample of 131 participants enrolled in 8 sections of an undergraduate general psychology course (PSY2012) or psychology of personal and social adjustment course (CLP1001) at a southeastern community college in a mid-sized city within the United States. No significant positive relationship was found between the DSW total score and the Beck Depression Inventory II (BDI-II) score as well as between the respective DSW domains and the BDI-II score. However, there was a contradictory significant inverted relationship between the DSW domain Self-doubt and the BDI-II. Contrary to expectation, Self-doubt statements were negatively associated with depression. The best predictors of depression were found to be the CTI subscales External Conflict (EC) and Commitment Anxiety (CA). There were no significant differences between
moderate/severely depressed and non-depressed/mild groups on the BDI-II and DSW responses and no significant differences between the OAQ decided and undecided groups and DSW responses.

These findings contribute to the understanding of the DSW’s value in assessing the social and emotional context for individuals as they relate to mental health issues, such as depression. Suggestions for modification of the DSW to capture the positive, neutral, or negative value of each statement were provided. The findings of this study implicate other CTI subscales (EC and CA) as significantly capturing unique variation in depression. In addition, these findings support the relationship among the overall CTI and BDI-II scores. Lastly, this study suggests that non-client populations, who elicit statements on the DSW Self-doubt domain, are less likely to be depressed. Implications for the use of the DSW in non-client populations and recommendations for future research are discussed.
CHAPTER I
INTRODUCTION

At the beginning of career counseling, clarifying the nature of an individual’s career problem is important in order to ascertain the appropriate initial steps of the career intervention (Sampson, Peterson, Reardon, & Lenz, 2000; Spokane, 1991). Identifying and assessing client needs at the beginning of the career service delivery process ensures that services are appropriately aligned with these identified needs (Gati, Gadassi, Saka, Hadadi, Ansenberg, Friedmann, & Asulin-Peretz, 1996; Sampson et al., 2000; Sampson & Reardon, 1998; Savickas, 1996; Super, 1983). During the initial client assessment it is also important to address mental health issues, as prior research has shown clients having difficulty making career decisions often endorse items related to depression or anxiety on the Beck Depression Inventory (BDI-II) and State-Trait Anxiety Inventory (Saunders, Peterson, Sampson, & Reardon, 2000). The Decision Space Worksheet (DSW) is a projective assessment technique that assists clients in understanding the social and emotional context involved in the career decision-making process. In addition, the DSW may be a possible indicator of mental health issues, out of which a career problem arises (Peterson, Leasure, Carr, & Lenz, 2009). Utilizing the DSW, Career Thoughts Inventory (CTI), and Occupational Alternatives Question (OAQ) at the outset of career counseling could be useful in identifying individuals who are experiencing mental health issues (Lenz, Peterson, Reardon, & Saunders, 2010; Peterson et al., 2009; Walker & Peterson, 2011).

Research has shown mental health issues impede the ability to make career decisions (Saunders et al., 2000; Zunker, 2008). Career counseling is more complex than helping a client select a career from a list of possibilities (Balistrieri, 1982; Peavy, 1996). A typical “counseling” setting should address a variety of psychological issues that impact career decisions (Balistrieri, 1982). Therefore, understanding and assessing the contextual factors and disabling emotions that interfere with career problem solving and decision-making are important. Disabling emotions and negative thoughts present at the outset of career counseling may interfere, inhibit, or distort perceptions of self-knowledge, occupational knowledge, the formulation of plausible occupational alternatives, and the level of decidedness (Saunders et al., 2000).

Prior literature points to the need for a more comprehensive approach to counseling that combines career and mental health issues (Blustein, 2006, 2008; Chopra, 2009; Krumboltz, 1993; Zunker, 2008; Lenz et al., 2010). Using a holistic or comprehensive approach of
counseling implies the integration of career counseling and mental health counseling, as they are
divisible and intertwined (Krumboltz, 1993; Zunker, 2008).

Social Problem

Career counselors and vocational psychologists have a unique opportunity to provide
interventions that enhance individuals’ abilities to work in meaningful ways (O’Brien, 2001). In
addition, research has shown that the fit between person and work environment plays a vital role
in an individual’s satisfaction (Holland, 1991; Roelen, Koopmans, & Groothoff, 2008; Scarpello
& Campbell, 1983; Takase, Maude, & Mantas, 2005). Enhancing job satisfaction for individuals
is important as decreased job satisfaction can result in burnout, lowered productivity, lowered
motivation, and increased mental health concerns (Boston, 2009; Zunker, 2008). Thus, career
counselors and vocational psychologists play a pivotal role in helping individuals realize their
potential and make career decisions while considering all life events and factors. Counselors
have an opportunity to provide assistance, so that individuals use “a balance of rational and
intuitive processes to create a meaningful understanding of the ongoing choices they make while
encouraging an awareness of the positive and negative social forces, including significant others,
that influence their decisions” (Sampson, 2009, p. 92).

In addition to providing counseling to individuals to enhance life and work, it is
important to address mental health issues as it relates to other costs for our society (Marcotte &
Wilcox-Gök, 2001). Bartel and Taubman (1979) found an estimated 20% loss of earnings
associated with poor mental health. Benham and Benham (1981) found approximately 30% loss
of earnings due to mental illness. Ettner, Frank, and Kessler (1997) reported consequences such
as negative employment and negative earnings related to mental illness. Ettner and colleagues
(1997) specifically stated that mental illness reduces the probability of employment. Berdt,
Finkelstein, Greenberg, Howland, Keith, Rush, Russell, and Keller (1988) found evidence of
decreased performance in the workplace due to depression.

Professional Problem

Initial identification of an individual's career problem is a vital step in delivering career
interventions (Spokane, 1991). During the initial evaluation, it is important to assess and
diagnose client needs to ensure that individuals receive services that are congruent with their
needs (Amundson, 1996; Gati, Krausz, & Osipow, 1996; Heppner & Johnston, 1993; Osborne,
Brown, Niles, & Miner, 1997; Sampson & Reardon, 1998; Savickas, 1996; Super, 1983; Watts,
During this initial evaluation, mental health concerns or psychological problems (Zunker, 2008) are potential issues for clients engaging in the career decision-making process. Prior research has identified several issues typically associated with career problems, such as personal and family relationships, finances, physical health, academic or work stress, and distressing emotional states (Peterson et al., 2009; Dik & Duffy, 2009; Osborn & Zunker, 2005; Peterson, Sampson, & Reardon, 1991; Saunders et al., 2000; Zunker, 2008).

It is beneficial to understand and assess mental health issues, utilizing cost effective measures, in order to ascertain which clients may benefit from individual counseling or further exploration of mental health issues that may impact making career decisions. It is also important to identify any mental health issues as they arise/impede the clients’ ability to make career decisions throughout the process. Dagenhart (2005) found that career counselors and counseling psychologists should consider the influence of career thoughts and depression throughout the career decision-making process. However, not all career counseling centers focus on the assessment of mental health issues (Lenz et al., 2010; Zunker, 2008). Yet, various authors have stressed the importance and need for a more holistic approach to counseling that combines career and mental health issues (Blustein, 2006, 2008; Lenz et al., 2010; Krumboltz, 1993; Zunker, 2008). Therefore, this study explored the relationship between mental health and career issues.

Study, Research Questions, and Hypotheses

This study will examine the social and emotional context as portrayed by the DSW in addition to career thoughts and career decidedness as possible indicators of mental health issues in career counseling. Below are the research questions and hypotheses for this study based on a review of the selected literature.

1. What are the attributes of the DSW?
   A. Derive the distribution of the number of circles (mean, standard deviation, range).
   B. Derive the average area explained by the circles.
   C. Derive the frequency distribution of associations by each domain (mean, standard deviation, range).
   D. Derive the average area per domain.

2. What is the relationship between the number of elicitations/productions per domain on the DSW and the BDI-II?
H2: There is a positive relationship between the number of thoughts, feelings, circumstances, people, or events per domain on the DSW and scores on the BDI-II.

3. What are the relationships among the DSW domains, CTI subscales, and OAQ with respect to the BDI-II?

H3: The DSW domains, CTI, and OAQ will capture significant unique variation in the BDI-II.

4. What are the differences between high and low BDI-II scores with respect to the associations in eight DSW domains?

H4: It is hypothesized that there will be differences between those earning high scores on the BDI-II (moderate and severe depression) and those earning low scores (non-depression and mild) on the BDI-II with respect to the number of associations on each of the eight DSW domains.

5. What are the differences between high and low OAQ scores with respect to the number of associations on each of the eight DSW domains?

H5: It is hypothesized that there will be differences between those who are decided on the OAQ and those who are undecided on the OAQ with respect to the number of associations on each of the eight DSW domains.

**Decision Space Worksheet**

The Decision Space Worksheet (DSW) consists of two sheets of 8.5 by 11 inch paper that includes a problem mapping exercise utilized in career counseling to assist clients in understanding the social and emotional context involved in the career decision-making process (Peterson et al., 2009). On the first sheet (see Appendix A), clients are instructed to record the career decision they are considering and to list all thoughts, feelings, circumstances, people, or events that impact the career decision they are considering (Peterson et al., 2009). On the second sheet (see Appendix A), clients are instructed to draw circles within a large circle to represent each item on their list and label them with the corresponding number from page one. They are also asked to use the size of the circles they draw to represent the relative importance of each item (Peterson et al., 2009). The intention of the DSW is to assist clients in identifying, partitioning, and prioritizing important contextual issues in order to facilitate their career decision-making process (Peterson et al., 2009).
Beck Depression Inventory-II

Research has indicated a significant positive relationship between the BDI-II and the CTI (Dagenhart, 2005; Walker & Peterson, 2011). The BDI-II is frequently used as a rapid assessment for depression (Beck & Steer, 1988; Beck, Steer, & Brown, 1996; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Eack, Singer, & Greeno, 2008). The BDI-II was developed primarily for assessing the severity of depressive symptomatology and is a low cost and efficient method for screening depressive disorders (Sprinkle, Lurie, Insko, Atkinson, Jones, Logan, & Bissada, 2002). The BDI-II has been subjected to extensive psychometric evaluations, and has been observed to be a highly reliable and valid measure of depressive symptomatology (Beck & Steer, 1984; Beck & Steer 1998).

Career Thoughts Inventory

The Career Thoughts Inventory (CTI) is based on the “cognitive information processing theoretical approach to career development and career services and a cognitive therapy theoretical approach to mental health and mental health services” (Sampson, Peterson, Lenz, Reardon, & Saunders, 1999, p. 2; Sampson, Peterson, Lenz, Reardon, & Saunders, 2004). The CTI is intended to improve the quality of career decisions and career services delivered to these individuals. The CTI is a “self-administered, objectively scored measure of dysfunctional thinking in career problem solving and decision making” (Sampson et al., 1999, p. 1). Based on CTI scores and interview data, individuals are defined as having a high, moderate, or low level of readiness, which guides the level of service and intervention individuals receive, utilizing the Two-Dimensional Model of Readiness for Career Decision Making (Sampson et al., 2004; Peterson, Sampson, Lenz, & Reardon, 2002). Capability refers to “the cognitive and affective capacity of an individual to engage in effective career problem solving and decision making” (Sampson et al., 2000, p.157; Sampson et al., 2004) and complexity refers to “…the contextual factors, originating in the family, society, employing organizations, or the economy, that make it more difficult to process information necessary to solve career problems and make career decisions” (Sampson et al., 2000, pg. 158, Sampson et al., 2004). Research has identified the DSW as an effective measure of gaining insight into the complexity dimension (Peterson & Leasure, 2004). In assessing an individual’s capability level, it is important to explore his or her willingness to learn and engage in tasks associated with the self-knowledge and occupational
domains, motivation to acquire information, and awareness of negative thoughts and feelings as measured by the CTI (Sampson et al., 2004).

**Readiness**

Research has shown that individuals vary in their capability to make career decisions (Sampson et al., 2004). Therefore, an integral component of the initial appointment or intake process should include assessing the client’s readiness for making a career decision (Sampson, et al., 2000; Savickas, 1990; Super, Osborne, Walsh, Brown, & Niles, 1992; Toman & Savickas, 1997). Readiness assessments can be utilized during various phases of career counseling (e.g., screening, intervention and program planning, outcome evaluation) (Sampson et al., 2000). At the outset of career services, assessing readiness is useful for the practitioner to assist in identification of the individual’s needs and level of support necessary (Gati et al., 1996; Sampson, et al., 2000).

In addition to examining an individual’s readiness level, it is important to assess career indecision, as it is has been shown to be positively and significantly related to dysfunctional career thoughts (Saunders, 1998). Career indecision is “the state of being unsure about one’s choice of a college major or future career” (Lucas & Wanberg, 1995, p. 315). Career indecision will be examined utilizing the Occupational Alternatives Question.

**Occupational Alternatives Question**

The Occupational Alternatives Question (OAQ) will be utilized to measure students’ level of career decision (Zener & Schnuelle, 1972; modified by Slaney, 1980). The OAQ consists of two questions: (1) “list all the occupations you are considering right now” and (2) “which occupation is your first choice? If undecided, write undecided.”

**Theory**

This study will utilize the cognitive information processing theory and Beck’s theory on depression as the theoretical bases (Beck, 1967; Peterson et al., 1991; Peterson et al., 1996; Sampson et al., 2004; Sampson, Lenz, Reardon, & Peterson, 1999). Cognitive information processing theory specifies that effective career problem solving and decision-making is needed to process information in the domains of self-knowledge, occupational knowledge, decision-making skills, and executive processing (Sampson et al., 2004) as represented in the Pyramid of Information Processing Domains (Figure 1).
Figure 1. Pyramid of Information Processing Domains


Within the decision-making skills domain is the Communication, Analysis, Synthesis, Valuing, and Execution (CASVE) Cycle (Figure 2), depicts an approach to the process associated with career problem and decision-making (Sampson et al., 2004). During the communication phase, individuals identify the gap between the existing and desired state (Peterson, Sampson, Lenz, & Reardon, 2002). In this phase, the individual identifies all facets (e.g., thoughts, feelings, circumstances, people, events) pertaining to the career decision (Peterson, Sampson, Lenz & Reardon, 2002). Assessments administered at the outset of counseling offer valuable insight into the decision space. For example, the OAQ helps to identify the career decision state, the CTI measures dysfunctional thinking in career problem solving and decision-making, and the DSW measures various contexts that may be associated with the career problem (Peterson, Sampson, Lenz, & Reardon, 2002; Sampson et al., 2000). The outcome of the communication phase is an Individualized Learning Plan (ILP), which is a
set of goals and activities developed with the client that assists in planning the completion of the service delivery (Peterson, Sampson, Lenz, & Reardon, 2002; Sampson et al., 2004).

In the analysis phase, causes of the problem are identified and relationships among those components are conceptualized in a mental framework (Cochran, 1994; Peterson, Sampson, Lenz, & Reardon, 2002; Sampson, Peterson, Lenz, Reardon, & Saunders, 1998). The outcome of the analysis phase is a clear understanding of self-knowledge and occupational knowledge (Peterson, Sampson, Lenz & Reardon, 2002). In the synthesis phase, alternative actions are formalized through elaboration and crystallization (Peterson, Sampson, Lenz, & Reardon, 2002). During elaboration, the individual generates a plethora of solutions and then narrows down these solutions to a set of manageable options in crystallization (Peterson, Sampson, Lenz, & Reardon, 2002). In the valuing phase, options generated in the previous stage are considered by evaluating and prioritizing them according to values, while incorporating an analysis of the costs and benefits (Peterson, Sampson, Lenz, & Reardon, 2002). The end result of this phase is that the individual will identify a first choice and alternate choices (Peterson, Sampson, Lenz, & Reardon, 2002). In the execution phase, a plan is completed for implementing the first choice (Peterson, Sampson, Lenz, & Reardon, 2002). In addition, the individual will return to the communication phase to determine if the original gap is successfully closed/resolved (Peterson, Sampson, Lenz, & Reardon, 2002).

Theoretical concepts from cognitive therapy specify that dysfunctional cognitions impact have a damaging influence on both behavior and emotions (Beck, 1976; Beck, Rush, Shaw, & Emery, 1979; Beck, Emery, & Greenberg, 1985). Beck’s theory of depression suggests that thinking negatively about oneself, the world, and the future (i.e., the negative triad) is the principal risk factor associated with depression (Beck, 1967). Beck (1987) posited additional causal and descriptive elements to his original theory, arguing that depression was caused by the endorsement of dysfunctional beliefs, such as, the tendency to exclude positive cognitions in favor of automatic and unrealistic negative ones (Haaga, Dyck, & Ernst, 1991). If individuals can learn to alter these dysfunctional cognitions, positive changes in behavior and emotions will likely ensue (Sampson et al., 1998).
**Figure 2.** The Five Phases of the CASVE Cycle of Decision Making Skills Used in Career Decision Making


**Definitions**

Throughout this study, terms may be used that have various meanings and applications. The following definitions are provided to support an understanding of the literature review, methodology, results and analyses, and discussion.

**Analysis:** a phase in the CASVE cycle where “causes of the problem are identified and relationships among problem components are placed in a conceptual framework” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 324).

**Capability:** “…the cognitive and affective capacity of an individual to engage in effective career problem solving and decision making” (Sampson et al., 2000, p. 157).

**Career decision-making:** “a process that not only encompasses career choice but involves making a commitment to carrying out the actions necessary to implement the choice” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 316).

**Career problem solving:** “a complex set of thought processes involving the acknowledgment of a state of career indecision, an analysis of the causes, the formulation and clarification of alternative courses of action, and the selecting of one of these alternatives to achieve a more
integrated state of decidedness. A career problem is solved when a career choice is made from among viable alternatives” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 316).

**Communication**: a phase in the CASVE cycle where individuals identify the gap between the existing and desired state (Peterson, Sampson, Lenz, & Reardon, 2002, p. 324).

**Complexity**: “…the contextual factors, originating in the family, society, employing organizations, or the economy, that make it more difficult to process information necessary to solve career problems and make career decisions” (Sampson et al., 2000, p. 158).

**Crystallization**: “is the narrowing of potential options to a manageable set of viable alternatives through the application of relevant personal or provided constructs (Peterson, Sampson, Lenz, & Reardon, 2002, p. 325)

**Decision-making skills**: “generic information processing skills used by individuals to solve problems and make decisions” (Sampson et al., 2000, p. 156).

**Depression**: “maladaptive appraisal of events involving loss or deprivation which lead to an individual’s appraisal of current negative circumstances related to self, the world, and the future as pervasive, global, and irreversible, accompanied by persistent withdrawal from activities, lack of motivation, problem solving deficits, and reduced desire to provide for one’s welfare (Beck, Emery, & Greenberg, 1985; Kovas & Beck, 1986; Saunders, 1998, p. 7).

**Elaboration**: “involves the creative generation of a wide range of possible solutions, even unlikely ones, through techniques such as brainstorming, creating analogies or metaphors, and engaging in mental relaxation to free the mind of reality constraints” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 325).

**Execution**: a phase in the CASVE cycle “a plan or strategy for implementing the first choice is formulated through a means-ends analysis” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 326).

**Executive processing**: “includes metacognitions that control the selection of sequencing of cognitive strategies used to solve a career problem” (Sampson et al., 2000, p. 156).

**Decision Space Worksheet (DSW)**: a cognitive problem mapping exercise on two worksheets that assist the client in understanding the components of the social and emotional context relative to a career decision (Peterson et al., 2009).

**Individualized Learning Plan**: a set of attainable goals developed collaboratively by the counselor and client that identifies a sequences “of resources and activities to help the client
Mental health: “state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life” (American Heritage Dictionary, 2007).

Occupational knowledge: “includes both knowledge of specific options (i.e., occupations, programs of study, or jobs) and schemata for how the world of work is organized” (Sampson et al., 2000, p. 156; Sampson et al., 2004).

Problem space: “all cognitive and affective components contained in working memory as individuals approach a career problem-solving task. The problem space entails the career problem at hand, in addition to all real-life issues associated with it, such as marital and family relationships, financial, spiritual, and leisure considerations, and prior life experiences, as well as a wide range of emotional states embedded in them” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 316).

Readiness (career): “…the capability of an individual to make appropriate career choices, taking into account the complexity of family, social, economic, and organizational factors that influence an individual’s career development” (Sampson et al., 2000, p. 156).

Self-knowledge: “includes one’s perceptions of one’s own values, interests, and skills…” (Sampson et al., 2000, p. 156).

Synthesis: a phase in the CASVE cycle alternative actions are formalized through elaboration and crystallization (Peterson, Sampson, Lenz, & Reardon, 2002).

Valuing: a phase in the CASVE cycle where “each viable course of action is evaluated and prioritized according to one’s value system to estimate its likelihood of removing the gap and its probable costs and benefits for oneself, significant others, cultural group, and society” (Peterson, Sampson, Lenz, & Reardon, 2002, p. 326).

Assumptions

It was assumed that individuals in the study answered the instruments truthfully, while putting forth an optimal level of effort and motivation. It was also assumed that the DSW is a valid and accurate indicator of the individual’s social and emotional state, as related to career decision-making. In addition, it was assumed that the circles drawn on the DSW are
representative of the career decision space. Further, it was assumed that the relationships between the DSW and the BDI-II can be represented by a linear paradigm.

**Delimitations**

This study did not include or represent all variables associated with assessing mental health. For the purposes of this study, mental health was only measured by one indicator, the Beck Depression Inventory (BDI-II). Furthermore, this study is limited by its measures (Career Thoughts Inventory, Occupational Alternatives Question) of career decision-making and/or career decision state. The DSW assessment does not provide information in regards to the valence of the statement/item, nor does it indicate or reflect a positive or negative statement. Finally, the study’s findings will not be generalizable to all individuals, but only to those who typically enroll in a community college. This restriction of generalizability may also apply to the measurements of career decision-making and/or career decision state.

**Significance of Study**

It is important to further examine the significance of the relationship between mental health and the career decision-making process. Specifically, this study examined the social and emotional context as portrayed by the DSW, in addition to career thoughts and career decidedness, as possible indicators of mental health issues in career counseling. This study aimed to understand the context of the DSW, thereby providing a basis to train counselors or professionals to look for certain associations on the DSW as an indicator of mental health issues and concerns present in the career problem-solving process.
CHAPTER II
LITERATURE REVIEW

During the initial stages of career counseling it is important to identify an individual’s career problem and mental health issues in order to determine the appropriate steps of the career assessment and intervention (Sampson et al., 2000; Saunders et al., 2000; Spokane, 1991; Zunker, 2008). The Decision Space Worksheet (DSW) is a projective assessment technique that assists in understanding the social and emotional context involved in the career decision-making process. In addition, it may be a possible indicator of mental health issues out of which a career problem arises (Peterson et al., 2009). Utilization of the DSW, CTI, and OAQ at the outset of career counseling may be useful in identifying individuals who are experiencing mental health issues impeding the career decision process (Peterson et al., 2009; Walker & Peterson, 2011). This study examined the social and emotional context as portrayed by the DSW in addition to career thoughts and career decidedness as possible indicators of mental health issues in career counseling.

The literature review begins with a discussion on career counseling theories, career counseling assessment, and career counseling interventions. Then the theoretical underpinnings, administration, and interpretation guidelines of the Decision Space Worksheet will be described. Next, an overview of the CTI theory will be described, followed by an examination of depression and mental health in career counseling. Finally, the review concludes with an analysis of gaps in the literature.

Career Counseling Theories

Frank Parson’s *Choosing a Vocation* (1909) was a key step in establishing career counseling as a profession. Several theories or models have evolved from Parsons work, which include trait-factor, person-environment-correspondence (PEC), cognitive information processing, social learning, and social cognitive (Osborn & Zunker, 2005; Peterson & Lenz, 2011). Another approach to career counseling is the theory of circumscription and compromise (Osborn & Zunker, 2005; Peterson & Lenz, 2011). Trait-and-factor theory matches the individual’s traits with descriptions and requirements of a specific occupation (Osborn & Zunker, 2005). The key components or characteristics of this theory is the assumption that all individuals have unique patterns of abilities or traits that can be measured and correlated with requirements for a variety of jobs (Osborn & Zunker, 2005). Measures such as the Kuder Career
Planning System, the Strong Interest Inventory, the General Aptitude Test Battery, the Self-Directed Search, and card sorts are utilized to assist individuals in acquiring knowledge of job traits and characteristics (Peterson & Lenz, 2011). PEC theory emphasizes that individuals seek to achieve and maintain a positive relationship with their work environments, which includes human interaction, satisfaction, rewards, and other psychological variables (Osborn & Zunker, 2005). Social learning theory states the process of career selection is based on life events, which involves genetic endowments and special abilities, environmental conditions and events, learning experiences, and task approach skills (Osborn & Zunker, 2005; Peterson & Lenz, 2011). CIP theory is applied to career development in terms of how individuals make career decisions and use information in career problem solving and decision-making, along with cognitive processes (Osborn & Zunker, 2005; Peterson et al., 1991; Peterson et al., 1996; Sampson et al., 2004; Sampson et al., 1999). Social cognitive career theory (SCCT) emphasizes the importance of background and social context influences on self-efficacy and career choice (Osborn & Zunker, 2005; Peterson & Lenz, 2011). Theory of circumscription and compromise incorporates developmental and sociological perspectives of vocational choice by examining processes and experiences in childhood and adolescence that contribute to occupational aspirations (Gottfredson, 2005; Peterson & Lenz, 2011).

Career Counseling Assessment

Researchers found the majority of career research has been aimed at career development and career choice, but not the process of career counseling (Dagley & Salter, 2004; Niles, 2003; Whitson, 2003). Graff, Raque, and Danish (1974) assessed the practice of the largest career counseling centers at universities across the United States and found that the majority of centers utilize master’s degree level counselors or inexperienced counselors for vocational counseling, which does not typically include personal or social counseling. In addition, there continues to be a false dichotomy in training between the words career and counseling (Dagley & Salter, 2003). Special training programs for career development facilitators emphasize career development theory and research, whereas counselor degree programs usually provide excellent supervised counseling training (Dagley & Salter, 2003). However, there is little overlap among these two concepts; this dichotomized perspective does not allow for integration of an individual’s views of educational, vocational, and personal concerns (Dagley & Salter, 2003). It treats these issues
as separate entities rather than an integrated and holistic view of people as indivisible whole individuals (Dagley & Salter, 2003).

In career assessment, there are a wide variety of methods (e.g., tests, inventories, structured interviews) designed to identify interests, values, skills, personality, abilities, decision-making abilities, motivations, self-knowledge, and occupational knowledge (Armstrong & Rounds, 2010; Hartung, 2010). Standardized tests and inventories, as well as nonstandardized measures are used in various career counseling models (Zunker, 2008). The broader use of assessment (standardized and nonstandardized) is found in all career models as a part of assessing the client’s problem and needs, and is used in ongoing career counseling to identify appropriate intervention strategies (Osborn & Zunker, 2005). For example, trait-and-factor and PEC models use assessment to determine interests, values, and cognitive abilities (Osborn & Zunker, 2005). The learning theory model uses assessment to determine prior experiences and personal beliefs (Osborn & Zunker, 2005). In CIP theory, assessment is used to measure dysfunctional thinking and cognitive processes (Osborn & Zunker, 2005; Peterson et al., 1991; Peterson et al., 1996; Sampson et al., 2004; Sampson et al., 1999). Recently, nonstandardized measures have been utilized to gain information or assess content that is not readily assessed through standardized measures (Healy, 1990; Subich, 1996; Zunker, 2008).

One nonstandardized measure in career counseling is problem mapping, which is utilized to help individuals construct a spatial representation of the problem space (Larkin & Aimon, 1987; Pavio, 1986; Peterson et al., 2009; Sinott, 1989). The problem space or career decision space assists individuals in identifying the social and emotional context of the career problem and understand the complexity of the career and life situation (Peterson et al., 2009; Sampson et al., 2000).

**Career Counseling Intervention**

Armstrong and Rounds (2010) stated that traditional career counseling begins with an interest inventory, followed by ability or self-efficacy measures, and values and personality measures. Throughout the years career counseling has moved towards integration information models (Ackerman & Heggestad, 1997; Armstrong & Rounds, 2010; Lubinski, 2000). Brown, Krane, Brecheisen, Castelino, Budisin, Miller, and Edens (2003) conducted a meta-analysis of the literature focusing on career choice intervention and identified five key intervention ingredients associated with career choice outcome, which include: workbooks and written
exercises; interpretations and feedback; world-of-work information; career exploration and decision-making; and supporting clients’ career plans.

Computer-assisted career guidance (CACG) systems, such as DISCOVER, is an intervention that help individuals identify their interests, abilities, and values in exploring their career options (Peterson & Lenz, 2011). Other CACG systems, such as SIGI³, “introduce users to a decision-making paradigm, allowing them to compare occupations using a grid format, offers guidelines for coping with career transitions, taking the next steps to implement career goals, and provides strategies for securing jobs in the area of one’s vocational choice” (Peterson & Lenz, 2011, p. 7).

Some research has shown the most effective intervention in career counseling occurs when individuals spend more time in individual career counseling (Oliver & Spokane, 1988; Whiston, Sexton, & Lasoff, 1998). Oliver and Spokane (1988) examined the relationships between 240 treatment and control groups from 58 studies containing 7,311 subjects and found individual counseling produced more client gains (per hour) than any other intervention modality. Whiston and colleagues (1998) completed meta-analyses on studies published between 1983 and 1995 that examined the effectiveness of career interventions using 268 treatment and control groups from 47 studies containing 4,550 subjects. Individual career counseling was found to be the most effective and efficient treatment (Whiston et al., 1998).

Career counseling, regardless of the theoretical perspective, typically includes an intake interview. It is recommended that during the intake interview a more holistic counseling approach should be utilized that takes into account both personal and career concerns (Blustein, 2006, 2008; Lenz et al., 2010; Osborn & Zunker, 2005; Zunker, 2008). It is recommended that counselors evaluate clients’ based on internal and external factors (Osborn & Zunker, 2005). The internal factors are those such as emotion, mood, and cognitive functioning (Osborn & Zunker, 2005). The external factors are those such as contextual influences, ecological system, relationships, and interactions (Osborn & Zunker, 2005). Osborn and Zunker (2005) utilized various resources to develop an outline of an intake interview format, which includes: (1) Identifying information (e.g., gender, work history, school); (2) Presenting problems (i.e., reason for counseling); (3) Current Status information (e.g., mood, affect); (4) Health and medical information; (5) Family information (e.g., past history); (6) Social and developmental history (e.g., culture, religion, social interactions); (7) Life roles (e.g., work role, leisure role); (8)
Problems that can interfere with career choice (e.g., career maturity, information processing skills, faulty thinking); (9) Problems that interfere with career development (e.g., faulty cognitions, work psychopathology); (10) Clarifying problems (e.g., state problems clearly, client and counselor collaborate); and (11) Identify client goals (e.g., feasibility of goals, subgoals) (Brems, 2001; Brown, Brooks, & Associates 1990; & Cormier & Nurius, 2003).

Parmer and Rush (2003) articulated a need for a broader conceptualization of career counseling services that take into account mental health issues. Zunker (2006, 2008) proposed that career counseling should integrate career and personal counseling. When individuals suffer from one or more psychological disorders they are more likely to experience multifaceted and multidimensional problems.

There are numerous measures to assess internal and external factors involved in the career decision process (Osborn & Zunker, 2005). The Decision Space Worksheet (DSW) is a measure intended to assess the complexity of an individual’s career problem at the outset of career counseling.

**Decision Space Worksheet**

The Decision Space Worksheet (DSW) consists of two sheets of 8 ½ by 11 inch paper that is a problem mapping exercise utilized at the outset of career counseling to assist clients in understanding the social and emotional context involved in the career decision-making process (Peterson et al., 2009). The term “cognitive map” was coined by Tolman and is a methodological tool which provides a comprehensive mental representation of an individual at a particular moment in time (Chaney, 2010; Tolman, 1948). In addition to analyzing the way individuals think, cognitive mapping identifies the way in which thoughts are organized (Chaney, 2010; Fletcher & Huff, 1990).

Within the cognitive information processing (CIP) theory, the DSW problem mapping technique is employed in career counseling during the Communication phase of the CASVE Cycle (Peterson, Sampson, Lenz & Reardon, 2002). The DSW is a clear stimulus with an ambiguous response, that “requires individuals to perceive and interpret the task demands, to impose parameters on the range of potential responses, to judge the relevance and quality of possible responses, to formulate and optional response from long-term memory structures, and to communicate the response to another individual” (Peterson et al., 1991, p. 131). The DSW problem mapping exercise allows individuals to formulate their career problem space, which
consists of all factors presented in the career problem located in working memory (Newell & Simon, 1972; Peterson, 1998; Peterson et al., 2009; Sinott, 1989). Working memory consists of short-term and long-term memory, which contains constructs of the problems associated with the career decision process (Mayer, 1983). When individuals compile a list of all the factors associated with the career problem, “they draw associations from long-term memory, place them in working memory, and record them on the first page of the DSW” (Peterson et al., 2009, p. 5). The client then conceptualizes and diagrams a spatial representation of the career problem space on the second page of the DSW, where the relative magnitude of each element is represented (Peterson et al., 2009).

These tasks promote dual coding in which two distinct cognitive systems are referentially connected (Pavio, 1986; Peterson et al., 2009). The first task requires individuals to label thoughts, feelings, and circumstances, which engages the verbal system (Peterson et al., 2009). The second task requires individuals to construct a spatial representation, which engages the non-verbal system (Peterson et al., 2009). Utilizing these two systems, engaging two cognitive systems, the DSW becomes a powerful assessment technique that maps the career problem and provides useful information in regards to the social and emotional context (Peterson et al., 2009).

**Cognitive Assessment**

Cognitive assessment in psychology focuses on underlying cognitive schemas that operate at a tacit or unconscious level (Dowd, 1995). Cognitive structures, or schemata, “consist of tacit rules and assumptions that are the result of cognitive processing over time and involve a network and organization of meaning attached to past experiences and events” (Dowd, 1995, p. 3). These schemata are important as they contain information about one’s sense of personal identity and relation to the world (Dowd, 1995; Markus, 1997). Well-developed schemata facilitate the storage of information and guide retrieval and reconstruction of information stored in long-term memory (Anderson & Pearson, 1985; Neisser, 1967; Peterson et al., 1991; Taylor, Crocker, & D’agostrino, 1978).

Because schemata impact how people interpret events and solve problems, they have also been considered mental models (Shelby, 2010). Mental models are schemata that correspond to knowledge and “perceptions of task demands and task performances” (Shelby, 2010, p. 35). These mental models are schemata that guide and govern performances as individuals’ assess and interpret tasks or attempt to solve some problems (Driscoll, 2005; Shelby, 2010). “Examples
of schemata in CIP include elements of self-knowledge, occupational knowledge, world of work, sequences of stages in career problem solving and decision-making (i.e., cognitive strategies), and dysfunctional thoughts” (Shelby, 2010, p. 35).

Cognitive assessment techniques utilized in career assessment are typically interview based or questionnaire based (Dowd, 1995). Thought-listing, one of the most commonly used interview based cognitive assessment technique, asks individuals to list all thoughts that they may have for the problem situation (Cacioppo & Petty, 1981; Dowd, 1995). Once individuals’ lists thoughts related to the problem, they rate the relative intensity of each thought, which provides a salience measure (Dowd, 1995). The DSW utilizes this concept of list making by instructing individuals to list all thoughts, feelings, circumstances, people, or events that bear on the career decision they are considering (Peterson et al., 2009). Then they are instructed to draw circles within a large circle to represent the relative importance or intensity of each item and the spatial representation of the problem (Peterson et al., 2009). Therefore, the DSW identifies the key elements in the life or problem space as related to the career problem and the relationship among the elements spatially.

**DSW Assessment Procedures**

The DSW is administered and interpreted in five steps as outlined below.

**Step 1. Declaration of the problem.** Initially clients are directed to write on two lines the decision they are considering (Peterson et al., 2009).

**Step 2. Elicitation.** The client lists all elements of the career problem listed in Step 1. Clients are instructed to think about all thoughts, feelings, circumstances, people, or events that impact or influence the decision they are considering (Peterson et al., 2009). Clients are “encouraged to think aloud as they record the elements” (Peterson et al., 2009, p. 90).

**Step 3. Construction.** On the second page of the DSW, clients are instructed to draw circles within the larger circle, which represent the magnitude of importance of each item listed on the first page (Peterson et al., 2009). Clients then number each circle so that they correspond to the items listed (Peterson et al., 2009).

**Step 4. Elaboration.** The career counselor reviews and explores the complexity of the client’s problem by examining the following: the degree of influence of each item listed, the influence of each element with respect to each other, the relationship among the elements, how
the elements are related to other assessment, and elements that should be further examined (Peterson et al., 2009).

Step 5. Developing and Individualized Learning Plan (ILP). The information obtained from the problem-mapping task (Steps 1-3) and from elaboration (Step 4) is utilized to develop the ILP (Peterson et al., 2009). The ILP is a set of goals determined by the client in collaboration with a professional that lists interventions and/or learning activities needed to achieve each goal. In practice, it is recommended that information from other assessments should be integrated into the development (Peterson et al., 2009).

Cognitive Information Processing (CIP) Theory

Cognitive information processing (CIP) theory “provides a comprehensive approach to career problem solving and decision making” (Peterson et al., 1991, p. 7). CIP theory is concerned with the actual thought and memory processes involved in both career problem solving and decision-making (Peterson, Sampson, Reardon, & Lenz, 1996). Four key assumptions of CIP theory include: (1) career problem solving and decision-making involve emotional and cognitive processes, (2) the capability of career problem solving depends on the accessibility and use of cognitive operations and knowledge, (3) career development continually grows and changes (e.g., self-knowledge, occupational knowledge, schemata), and (4) the development of career problem solving and decision-making skills is accomplished through the enhancement of information processing capabilities and acquisition of knowledge (Peterson et al., 1996).

Cognitive information processing theory provides a parsimonious process for organizing career development interventions in terms of content and process for practitioners (Peterson, et al., 1991). The Pyramid of Information Processing domains (content of career decision-making) and the CASVE cycle (process of career decision-making) are two central concepts of the CIP theory. The Pyramid of Information Processing is composed of three hierarchical domains of knowledge that are required for the efficient processing of effective career problem solving and decision-making that ultimately lead to a career choice. These hierarchical domains include: (1) knowledge domains (self-knowledge, occupational knowledge); (2) decision-making skills domain; and (3) executive processing domain (Peterson et al., 1996).

Within the knowledge domains of self-knowledge and occupational knowledge individuals will examine their values, interests, skills, knowledge of individual occupations, and
develop a schema for how the world of work is organized (Peterson et al., 1996). Within the
decision skills domain information is transformed from the knowledge domains to
implementation of a solution (Peterson et al., 1996). Specifically, the decision-making skills are
generic information processing skills that make up the CASVE (Communication, Analysis,
Synthesis, Valuing, Execution) cycle (Peterson et al., 1996). The stages of this cycle include:
communication phase (awareness that a gap exists between an existing state and a desired state
as a result of external and internal cues), analysis phase (formation of a mental model of the
problem and relationships among the components), synthesis [(elaboration) and then narrowing
(crystallization) of alternatives], valuing (costs and benefits of each alternative), and execution
(formulation and commitment to an implementation plan for the first choice, which includes
preparation, reality testing and employment seeking) (Peterson et al., 1996). The executive
processing domain involves metacognitions (Flavell, 1979; Meichenbaum, 1977). “The
principal metacognitions include self-talk, self-awareness, and monitoring and control” (Peterson
et al., 1996, p. 438). The Career Thoughts Inventory (CTI), based on the cognitive information
processing theoretical approach, is intended to improve the quality of career decisions and career
services delivered to individuals (Sampson, Peterson, Lenz, Reardon, & Saunders, 1998). Based
on the CTI score and interview data, an individual is defined as having a high, moderate, or low
level of readiness, which determines the level of service and intervention the individual receives,
utilizing the Two-Dimensional Model of Readiness for Career Decision Making (Figure 3).

Two-Dimensional Model of Readiness

Within the CIP theory, readiness is defined as an individual’s capability to make
appropriate career choices, while also taking into consideration the complexity of family, social,
economic, and organizational factors (Sampson et al., 2000). These constructs are also viewed
as the internal factors (capability) and external factors (complexity) for the individual as it
impacts or influences one’s ability to engage in the career decision-making process (Sampson et
al., 2000).

Capability refers to “the cognitive and affective capacity of an individual to engage in
effective career problem solving and decision-making” (Sampson et al., 2000, p. 157).
Therefore, individuals who are at a high state of readiness have the cognitive capacity to engage
in problem solving and decision-making. In terms of capability, individuals must be willing to
explore self-knowledge (e.g., values, interests, skills), occupational knowledge (i.e., world of
work), engage in career problem solving and decision-making, and should be aware of their negative thoughts and feelings and how they influence the career decision-making process (Sampson et al., 2000).

Complexity refers to “…the contextual factors, originating in the family, society, employing organizations, or the economy, that make it more difficult to process information necessary to solve career problems and make career decisions” (Sampson et al., 2000, p. 158). Issues related to complexity are often categorized as family, social, economic, and organizational factors (Sampson et al., 2000). These factors may contribute to anxiety, depression, or other mental health issues, which interfere or impede the career decision-making process (Sampson et al., 2000). Therefore, individuals who have a high state of readiness have fewer family, social, economic, and organizational factors (Sampson et al., 2000).

The benefit of using the two-dimensional readiness model in career counseling centers is that it provides a guide for counselors to assess the needs of individuals and determine appropriate services (Sampson et al., 2000). Utilizing data from the CTI and DSW provides counselors with information regarding the individual’s capability and complexity (Sampson et al., 2000; Peterson & Leasure, 2004).

![Two-Dimensional Model of Readiness for Career Decision Making](image)

**Figure 3. Two-Dimensional Model of Readiness for Career Decision Making**

In addition to assessing an individual’s level of readiness, it is important to understand their level of career indecision (Leong & Chervinko, 1996; Lucas & Wanberg, 1995). A difference in the decision-making state also affects the amount and type of counseling the individual needs (Peterson et al., 1996).

**Career Decision State**

Peterson and colleagues (1991) identified three states of career decidedness as follows: decided, undecided, and indecisive. “Decided individuals have made a private or public commitment to a specific occupational choice” (Peterson et al., 1996, p. 446). Decided individuals may be characterized as more rational, vigilant, have lower levels of anxiety, and higher levels of self-esteem (Cohen, Chartrand, & Jowdy, 1995; Peterson et al., 1991).

Undecided individuals have not made a commitment to a specific occupational choice (Peterson et al., 1991). Individuals who are undecided may be considering several options, but have not yet declared a first choice (Peterson et al., 1991). Undecided individuals may be content being in this state of decision, especially if negative internal or external influences are not present (Peterson et al., 1991). In addition, undecided individuals may be lacking the necessary information to make a decision (Peterson et al., 1991).

Indecisive individuals have not made a commitment to a specific occupation (Peterson et al., 1991). Indecisive individuals may be characterized as having executive processing deficiencies, excessive negative self-talk, confused thought processes, and/or “having a maladaptive approach to problem solving in general that is accompanied by a dysfunctional level of anxiety” (Peterson et al., 1996, p. 448).

In order to assess individuals’ state of decisiveness, clients need to specify an occupational choice and alternative choices if necessary (Peterson et al., 1991). Asking clients to identify their current occupational choice using the Occupational Alternatives Question provides an effective method of differentiating those that are decided or undecided (Zener & Schnuelle, 1972; modified by Slaney, 1980).

**Mental Health Issues/Depression and Career Decision**

Several authors have called for a more comprehensive approach to counseling that combines career and mental health issues (Betz & Corning, 1993; Blustein, 2006, 2008; Krumboltz, 1993; Zunker, 2008). Research has suggested that faulty cognitions inhibit systematic, logical thinking and therefore interfere with the career choice process (Gelso &
Fretz, 2001; Osborn & Zunker, 2005; Spokane, 1989). Rottinghaus, Jenkins, and Jantzer (2009) examined links between participants' (388 university students) emotional life, including depression and positive/negative effect, and career decision status. Rottinghaus and colleagues (2009) found “participants who had made a career decision were significantly less depressed than those who were undecided about their career” (p. 280).

Prior research has shown that some individuals experiencing career decision-making difficulties may suffer from chronic difficulties, stemming from emotional problems or other personality characteristics (Betz & Serling, 1993; Callahan & Greenhaus, 1992; Cohen, Chartrand, & Jowdy, 1995; Gati, Gadassi, Saka, Hadadi, Ansenberg, Friedmann, & Asulin-Peretz, 2011; Kelly & Pulver, 2003; Leong & Chervinko, 1996; Meldahl & Muchinsky, 1997; Osipow, 1999; Saka & Gati, 2007; Saka, Gati, & Kelly 2008; Santos, 2001; Slaney, 1988). Saka and Gati (2007), examined emotional and personality-related aspects of career decision-making difficulties and found lower self-esteem was associated with higher emotional and personality-related aspects of career decision-making and anxiety was often associated with decision-making problems. Leong and Chervinko (1996) found negative personality traits (i.e., perfectionism, neuroticism) were associated with career decision-making difficulties.

Saunders and colleagues (2000) stated that individuals seeking assistance with career decision-making difficulties often have elevated scores or endorse items on assessments that suggest mental health issues (e.g., depression, anxiety). In addition, a depressed individual typically operates under a set of schemata that distort experiences about self, world, and future (Saunders et al., 2000). Depression is often associated with difficulty in concentration and decision-making (American Psychiatric Association, 1994). Tasks such as concentration, decision-making, and logical thinking are essential to effective problem solving and decision-making (Saunders et al., 2000). Therefore, the depressed individual’s inability to effectively engage in the problem-solving and decision-making process, needed in effectively approaching a career problem, is relevant to career decision-making (Saunders et al., 2000).

**Depression**

Depression is considered to be one of the most common mental health problems in the United States (National Institute of Mental Health, 2011). It is estimated that depression will be one of the most debilitating diseases in the world by 2030 (Young, Fang, & Zisook, 2010). The lifetime risk for depression is approximately 10% to 25% for females and 5% to 12% for males.
Young and colleagues (2010) stated depressive illnesses peak between 15 to 19 years, with an estimated 15% of college students suffering from depression. Depression is defined by the American Psychiatric Association (2000) in the *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision* as having five or more of the following symptoms present during the same 2-week period, which is different from previous functioning and must include either depressed mood or loss of interest or pleasure. Other symptoms may include: depressed mood most of the day, marked diminish interest or pleasure in activities, weight loss or weight gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or guilt, inability to concentrate, and/or thoughts of death or suicide (American Psychiatric Association, 2000).

Depression can alter thoughts, feelings, and behaviors (Rottinghaus et al., 2009). In addition, “depressed individuals experience maladaptive thoughts and cognitive distortions that affect views of the self, world, and future” (Beck, 1995; Rottinghaus et al., 2009, p. 272). These maladaptive, distorted, or negative cognitions often lead to passivity, a reduction in pleasure, and a decreased lack of motivation (Kovacs & Beck, 1986). These thoughts and distortions often coincide with symptoms and behaviors that affect overall functioning (Rottinghaus et al., 2009).

To assess depression in this study, the BDI-II was utilized. The Beck Depression Inventory-II (Beck et al., 1961) has been used to assess depression or depressive symptoms in over 500 published clinical studies (Steer, Beck, Kovacs, & Garrison, 1985) and has been evaluated psychometrically within a variety of psychiatric and normal populations (Beck & Beamesderfer, 1974, p. 151-169; Mayer, 1977).

**Critical Analysis of the Literature**

While there has not been a study that utilizes the BDI-II, DSW, and CTI collectively; there have been studies that examined the relationship between the BDI-II and CTI and the DSW and CTI. Leasure (2007) found that the DSW did not correlate with the CTI results. Leasure hypothesized the following: (1) that higher CTI total scores would be associated with higher amount of occupied space on the DSW, and (2) that higher scores on the EC subscale of the CTI would be associated with an increased amount of variables/endorsed items on the DSW. The correlations between the proportion of space utilized on the DSW and the CTI total score ranged from -.17 to +.25.
Dagenhart (2004) examined the relationships between the Strong Interest Inventory (SII), CTI, and BDI-II. He found that there was a significant positive relationship between the CTI and BDI-II, with a correlation coefficient of .41 (Dagenhart, 2004). Dagenhart (2004) found no significant differences between the BDI-II and the CTI total score with respect to gender. Saunders and colleagues (1999) investigated depression and dysfunctional career thinking as it relates to career decidedness as measured by the BDI-II and CTI. It was found that there was a positive correlation of .37 between the CTI and BDI-II (Saunders et al., 1999).

Walker and Peterson (2011) investigated the relationship between dysfunctional career thoughts and career indecision with respect to depression symptoms as measured by the CTI and BDI-II. There was a correlation of .42 between the CTI and BDI-II, which was consistent with previous studies (Dagenhart, 2004; Saunders et al., 1999). In addition, the relationship between the subscales of the CTI and BDI-II ranged from .39 to .51 (Walker & Peterson, 2011). Overall, Walker and Peterson (2011) concluded that the DMC scale on the CTI was the single best indicator of depressive symptoms as measured by the BDI-II. Walker and Peterson (2011) also examined gender differences and found significant gender differences for the CTI total score and for the Commitment Anxiety (CA) scale of the CTI, which contradicts the findings of Dagenhart’s study. However, Walker and Peterson (2011) found no significant differences between gender on the Decision-Making Confusion (DMC) subscale of the CTI and BDI-II, which was consistent with Dagenhart’s study.

As previously demonstrated, there have been a few studies that found a relationship between the existence of dysfunctional thinking that impairs or inhibits an individual’s ability to solve career problems and to make career decisions and depression studies (Dagenhart, 2004; Saunders et al., 1999; Walker & Peterson, 2011). However, no studies in the literature have directly examined the relationship between depression and career decision-making utilizing the Decision Space Worksheet. In addition, there are no studies that utilize projective measures as indicators of mental health concerns in the context of career decision-making. While research has examined mental health issues, career thoughts, and career readiness in regards to the career decision-making process, there is minimal research looking at the relationship of these collectively.
Research Question

Given the gaps in the findings in the literature noted above, the following research questions should be answered. What are the relationships among the social and emotional context involved in the career decision-making process, including career thoughts, career readiness, and mental health?

Specific Research Questions and Hypotheses

1. What are the attributes of the DSW?
   A. Derive the distribution of the number of circles (mean, standard deviation, range).
   B. Derive the average area explained by the circles.
   C. Derive the frequency distribution of associations by each domain (mean, standard deviation, range).
   D. Derive the average area per domain.

2. What is the relationship between the number of elicitations/productions per domain on the DSW and the BDI-II?
   H2: There is a positive relationship between the number of thoughts, feelings, circumstances, people, or events per domain on the DSW and scores on the BDI-II.

3. What are the relationships among the DSW domains, CTI subscales, and OAQ with respect to the BDI-II?
   H3: The DSW domains, CTI, and OAQ will capture significant unique variation in the BDI-II.

4. What are the differences between high and low BDI-II scores with respect to the number of associations on each of the eight DSW domains?
   H4: It is hypothesized that there will be differences between those earning high scores on the BDI-II (moderate and severe depression) and those earning low scores (non-depression and mild) on the BDI-II with respect to the number of associations on each of the eight DSW domains.

5. What are the differences between high and low OAQ scores with respect to the number of associations on each of the eight DSW domains?
H5: It is hypothesized that there will be differences between those who are decided on the OAQ and those who are undecided on the OAQ with respect to the number of associations on each of the eight DSW domains.
CHAPTER III
METHODOLOGY

The purpose of this study was to examine the social and emotional context as portrayed by the DSW in addition to career thoughts and career decidedness as possible indicators of mental health issues in career counseling. The methodology used to investigate the previously stated research questions and hypotheses is described in this chapter. Included in this section is information about the participants, procedures, instruments, research design, and data analyses.

Participants

The sample consisted of 131 subjects (N = 131) enrolled in 8 sections of an undergraduate general psychology course (PSY2012) or psychology of personal and social adjustment course (CLP1001) in a southeastern community college at a midsized city in the United States (Table 1). According to the power formula (Cohen, 1988) using an alpha of .05 and beta of .80 and effect size of .15 and up to 10 predictors requires a sample size of 118.

Following test administration, there were 196 participants. Forty cases were removed due to missing data on one or more variables and five cases were removed due to the participants withdrawing from the study. Twenty DSW profiles were not used due to participants indicating “none” on the profile (n = 8), drawing circles that were overlapping (n = 6), drawing pictures or figures instead of circles (n = 2), and not correctly labeling circles and/or sentences (n = 4). The final sample (N = 131) consisted of 61 males (n = 61, 46.6%) and 70 females (n = 70, 53.4%). Participants’ ages ranged from 18 to 57 years of age (M = 22.2, SD = 7.5). Four participants (3.1%) preferred not to respond to the age item. Participants’ self-identified as Asian (n = 2, 1.5%), African American/Black (n = 32, 24.4%), American Indian (n = 2, 1.5%), Caucasian/White (n = 74, 56.5%), Hispanic (n = 14, 10.7%), and Other (n = 4, 3.1%). Three participants (2.3%) preferred not to respond to the ethnicity item. The sample consisted of freshman (n = 48, 36.6%), sophomores (n = 56, 42.7%), juniors (n = 19, 14.5%), seniors (n = 4, 1.5%), and graduates (n = 2, 1.5%). Two participants (1.5%) preferred not to respond to the year in school item. According to Tallahassee Community College Fast Facts (2011) the gender distribution is 45% male and 55% female; the age range is 61% for ages 21 and under, 16% for ages 22-24, 15% for ages 25-35, and 8% for ages 36 and above; and the ethnicity distribution is 56% Caucasian, 32% African American, 7% Hispanic, 2% Asian, and 3% Other. Therefore, the sample was considered representative of the community college.
### Participant Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Participant Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 131)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61</td>
<td>46.6</td>
</tr>
<tr>
<td>Female</td>
<td>70</td>
<td>53.4</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>33</td>
<td>25.2</td>
</tr>
<tr>
<td>19</td>
<td>29</td>
<td>22.1</td>
</tr>
<tr>
<td>20</td>
<td>19</td>
<td>14.5</td>
</tr>
<tr>
<td>21</td>
<td>11</td>
<td>8.4</td>
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<tr>
<td>22</td>
<td>6</td>
<td>4.6</td>
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<td>23</td>
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<td>4.6</td>
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<td>1.5</td>
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<tr>
<td>26</td>
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<td>27</td>
<td>2</td>
<td>1.5</td>
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<tr>
<td>28</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>29</td>
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<td>.8</td>
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<tr>
<td>30 - 39</td>
<td>5</td>
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<td>40 - 49</td>
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<td>2.3</td>
</tr>
<tr>
<td>50 – 59</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>African American/Black</td>
<td>32</td>
<td>24.4</td>
</tr>
<tr>
<td>American Indian</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Caucasian/White</td>
<td>74</td>
<td>56.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>14</td>
<td>10.7</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>Year in School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>48</td>
<td>36.6</td>
</tr>
<tr>
<td>Sophomore</td>
<td>56</td>
<td>42.7</td>
</tr>
<tr>
<td>Junior</td>
<td>19</td>
<td>14.5</td>
</tr>
<tr>
<td>Senior</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>Graduate</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Procedure

In the 2011 summer and fall semesters, the researcher attended sections of undergraduate general psychology courses (PSY2012) and psychology of personal and social adjustment courses (CLP1001) at a southeastern community college. On the day designated for data collection, the researcher read a verbal consent script (Appendix B), which stated the researcher was asking participants to take part in a research study to look at the usefulness of various instrument/assessment items related to the career assessment process. Then the researcher distributed the packets containing the Informed Consent, Demographic Questionnaire, Decision Space Worksheet, Career Thoughts Inventory (CTI), and Beck Depression Inventory (BDI-II). To control for demand characteristics an a-priori sample of a DSW completed figure was not provided.

The participants were instructed to read and sign the Informed Consent form before proceeding (Appendix C). The researcher was present for the administrations of all instruments. The time of completion was approximately 30 minutes. In order to assure confidentiality all students were assigned numbers and all data was coded to ensure the protection and anonymity of all participants. Participants were provided contact information if they had any questions or concerns about the research. In addition, because this study required individuals to endorse items concerning depression, the researcher reviewed the results of the depression inventory (BDI-II) immediately to protect participants’ welfare. In the case of possible suicidality, the researcher contacted the supervising professor, and arranged for the necessary level of intervention. If participants indicated suicidal ideation, planning, or intent, the researcher immediately responded with open questions to assess the extent of their ideation and intent. If the participant indicated intent to commit suicide, the researcher notified the supervising professor immediately. In all cases, participants who expressed such thoughts were referred to the Counseling Center or other appropriate referrals were made. Additionally, all individuals were given information, both verbally and in written form (Appendix D), concerning where and how to obtain free counseling offered by the college. IRB approval was obtained from Florida State University (Appendix E).
Instruments

Career Thoughts Inventory

The Career Thoughts Inventory (CTI) is a self-administered (objectively scored) theory-based assessment consisting of 48 items which state career thoughts that many hinder or obstruct processing of information involving self-knowledge, occupational knowledge, decision-making skills, and executive processing (Sampson et al., 1996). The instrument uses a 4-point Likert type scale ranging from strongly disagree (0) to strongly agree (3). Higher scores indicate the existence of dysfunctional thinking that impairs or inhibits an individual’s ability to solve career problems and to make career decisions (Sampson et al., 1996). In addition to providing information about an individual’s level of negative thoughts (CTI total score), the CTI assesses the following constructs: Decision-Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) (Sampson et al., 1996).

Decision-Making Confusion assesses an individual’s inability to initiate or sustain the career decision-making process due to disabling emotions and/or lack of understanding about the decision-making process (Sampson et al., 2004). The Commitment Anxiety scale measures an individual’s anxiety about the decision-making process and represents his/her ability to commit to a specific career choice (Sampson et al., 2004). The External Conflict scale measures the inability to balance self-perceptions with the input from significant others (Sampson et al., 2004).

Reliability. The internal consistency coefficient alpha of the CTI total score was found to be $r = .96$ when administered to an undergraduate college student sample (Sampson et al., 1996). The three construct scale alpha coefficients range from .94 to .74 (Hartley, 2009). It was found that scores on the DMC scale range from .94 to .90, .91 to .79 on the CA scale, and .81 to .74 on the EC scale for normative groups (Hartley, 2009). One recent study found coefficient alphas for the DMC scale .92, CA scale .85, and EC scale .72 (Hartley, 2009; Reed, 2005). A four-week test-retest reliability of college students for the total score was found to be .86, with the subscales ranging from .82 to .74. Specifically, the DMC subscale was found to be .82, the CA subscale was .79, and the EC subscale was .74 (Sampson et al., 1996).

Validity. The content validity, factorial validity, convergent validity, and criterion validity for the CTI are listed below.

Content validity. Content validity of the instrument is based on the congruence of CTI items with the theoretical basis of a cognitive information-processing model of career decision-
making (Peterson et al., 1991, 1996). Eight content scales, six items each, measure the domains of the Pyramid, which include: self-knowledge, occupational knowledge, communication, analysis, synthesis, valuing, execution, and executive processing. The *CTI Professional Manual* provides a list of all 48 CTI items grouped by content dimension and includes the corresponding criteria for developing each item (Sampson et al., 1996).

**Factorial validity.** The CTI established factorial validity through exploratory factor analyses (EFA; Sampson et al., 1996). During the CTI development, three constructs were identified: DMC, CA, and EC. Based upon the factor analysis it was concluded that DMC, CA, and EC may be viewed as indicators of dysfunctional thinking that hinders cognitive information processing, which are the constructs of career problem solving and decision-making (Sampson et al., 1996).

**Convergent validity.** The CTI’s convergent validity has been supported by correlations with the Barriers categories on My Vocational Situation, the Vocational Identity scale and Occupational Information (Holland, Daiger, & Power, 1980; Strausberger, 1999); and the Certainty and Indecision scales on the Career Decision Scale (Osipow, Carney, Winder, Yanico, & Koschier, 1987). Further, the CTI total and subscale scores were also correlated with the Career Decision-Making Difficulties Questionnaire (Gati et al., 1996) total and subscale scores (Kleiman et al., 2004).

**Criterion validity.** The CTI was administered to clients and nonclients to determine the criterion validity of the instrument. As predicted, the client population had significantly higher scores on the total scales, as well as the three scales (Sampson et al., 1996).

**Demographic Questionnaire**

Descriptive data for participants was collected using a simple demographic form. Information on participant gender, age, ethnicity, year in school, and major was collected (Appendix F). This form contained a measure of career decidedness (OAQ) which is discussed below.

**Occupational Alternatives Question**

The Occupational Alternatives Question (OAQ) was utilized to measure students’ level of career decision (Zener & Schnuelle, 1972; modified by Slaney, 1980) (Appendix F). The OAQ scale is continuous and interval. The OAQ consist of two questions: (1) “list all the occupations you are considering right now” and (2) “which occupation is your first choice? If
undecided, write undecided.” The OAQ is scored on a scale of 1 to 4 (1=first choice listed with no alternatives, 2=first choice listed with alternatives, 3= no first choice listed/only alternatives, and 4=neither a first choice nor alternatives are listed). If a student scores a 1 on the OAQ the decision is decided, whereas if the student scores a 4 he/she is undecided.

**Reliability.** The test-retest reliability of a questionnaire that included the OAQ was .93 (Slaney, 1978). In another study Slaney (1978) found the responses to the OAQ measure to be stable over a 6-week period (Slaney, 1978, 1980), with a kappa coefficient of .83 and a comparison of the responses to the OAQ at the first and final session revealed that 55 subjects gave identical responses.

**Validity.** The convergent validity and criterion validity for the OAQ are listed below.

**Convergent validity.** The OAQ had a correlation coefficient of .34 with an early version of the CTI (Sampson et al., 1996). Kleiman et al., (2004) found individuals who indicated a first choice on the OAQ had lower scores on the CTI and Career Decision-Making Difficulties Questionnaire (Gati et al., 1996). In addition, 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, & Shanasarian, 1988).

**Criterion validity.** The OAQ may be useful in categorizing levels of career decidedness based on the finding that participants with greater indecision on the OAQ had lower satisfaction with their college majors (Hartley, 2007; Slaney, 1980).

**Beck Depression Inventory II**

The Beck Depression Inventory-II (BDI–II) is a 21-item self-report instrument designed to measure the severity of depression in adolescents and adults (Beck, Steer, & Brown, 1996; Beck et al., 1961). Each item on the BDI–II requires participants to endorse one of four options reflecting the severity of a given depressive symptom. Scores from 0 to 3 are applied to each item, with higher scores indicating more severe symptoms (Sprinkle et al., 2002). The total score for the measure is found by adding the item scores, with higher scores reflecting more severe depressive symptomatology.

Individual item scores are summed for a total score designed to indicate the severity of depression. The symptoms and attitudes include: (1) Mood; (2) Pessimism; (3) Sense of Failure; (4) Lack of Satisfaction; (5) Guilt Feelings; (6) Sense of Punishment; (7) Self-dislike; (8) Self-accusations; (9) Suicidal Wishes; (10) Crying; (11) Irritability; (12) Social Withdrawal; (13)
Indecisiveness; (14) Distortion of Body Image; (15) Work Inhibition; (16) Sleep Disturbance; (17) Fatigability; (18) Loss of Appetite; (19) Weight Loss; (20) Somatic Preoccupation; and (21) Loss of Libido (Beck & Steer, 1984).


**Validity.** The content validity, convergent validity, and criterion validity for the BDI-II are listed below.

**Content validity.** The BDI-II content validity was obtained by comparing the BDI with the DSM-III criteria (Sprinkle et al., 2002). Moran and Lambert (1983) concluded the BDI-II reflects six of the nine DSM-III criteria well.

**Convergent validity.** The BDI-II had a correlation coefficient of .84 with the Reynolds Adolescent Depression Scale (Kretetz, Steer, Gulab, & Beck, 2002). In addition, other validity studies using nonpsychiatric samples reported correlations ranging from .62 to .86 with the Zung Self-Rating Depression Scale and .56 to .75 with the MMPI Depression Scale (Beck, Steer, & Garbin, 1988; Saunders et al., 2000). Additionally, the BDI-II manual reported correlations of .68 and .71 (respectively) between the BDI-II and the Revised Hamilton Psychiatric Rating Scale for Depression (Hamilton, 1960) and the Beck Hopelessness Scale (Beck & Steer, 1988).

**Criterion validity.** The BDI-II manual (Beck, Steer, & Brown, 1996) reported correlations of .93 and .84 between the BDI-II and its predecessor in two samples of outpatients.

**Decision Space Worksheet**

The Decision Space Worksheet (DSW) consists of two sheets of 8 ½ by 11 inch paper and is a problem mapping exercise utilized in career counseling to assist clients in understanding the social and emotional context involved in the career decision-making process (Peterson et al., 2009). On the first sheet (see Appendix A), clients are instructed to record the career decision they are considering and to list all thoughts, feelings, circumstances, people, or events that impact or influence the career decision they are considering (Peterson et al., 2009). On the second sheet (see Appendix A), clients are instructed to draw circles within a large circle to
represent each item on their list and label them with the corresponding number from page one. They are also asked to use the size of the circles they draw to represent the relative importance of each item (Peterson et al., 2009). The DSW is used to assist clients in identifying, partitioning, and prioritizing important contextual issues in order to facilitate their career decision-making process (Peterson et al., 2009).

Once participants completed the DSW, the researcher identified usable and unusable assessments based on the following criteria. Any assessments that had circles on the second page that either (a) overlapped, (b) were drawn outside of the designated circle, (c) drew pictures or figures instead of circles, and/or (d) did not correctly label circles and/or sentences were defined as unusable. The researcher then quantified the area used by each of the circles for all usable assessments. Each of the participants’ DSW maps (second page) were scanned onto a computer disc and analyzed using Adobe Photoshop. For the purpose of visual representation of the data the pixels were converted into square centimeters. The number of pixels per circle were recorded and converted into square centimeters. The process for pixel conversion included finding the area \( A = \pi r^2 \) of 10 circles and dividing the pixel count by the area; the average of these 10 circles was calculated, resulting in 13000 pixels per cm\(^2\). Therefore, all pixel conversions into square centimeters were calculated by dividing each pixel count by 13000. Then each of these circles was categorized within a principle domain on the Classification Code of Thoughts, Feelings, Events, Circumstances, and Individuals Listed on the Decision Space Worksheet (Table 2). The principal investigator and two additional raters from the Florida State University American Psychological Association approved combined program in Counseling and School Psychology classified all sentences/statements on the first page. Any statements that were not agreed upon by two of the three raters were deemed unclassifiable and were not used.

**Interrater reliability.** This study was replicating Peterson and Leasure’s (2004) classification index for reliability, accuracy, and feasibility for participants, while adding a new mental health domain. All of the DSW statements were scored/coded by the principal investigator. In order to assess interrater reliability, an interval sample of every third assessment was utilized (47 assessments). Two additional raters were given the same classification categories as the principal investigator. The three raters scored/coded 10 DSW assessments that were not part of the sample population as part of the training process. Once the 10 DSW assessments were classified, the raters discussed the results and rationale for domain assignment.
All three raters then individually scored/coded all DSW assessments for the study. In this case, Kappa is a good non-parametric statistic to compute interrater reliability since the $\pi_e$ (proportion of ratings expected to exhibit agreement by chance alone) can be set to any level to protect for agreement only to chance. The specific formula utilized for reliability was $K = (\% \text{ agreement} - \% \text{ chance}) / (\% \text{ agreement})$.

Table 2

*Classification Code of Thoughts, Feelings, Events, Circumstances, and Individuals Listed on the Decision Space Worksheet*

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>CONSTRUCT DEFINITION</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life (Values)</td>
<td>The manifestation of values in the work environment to which an individual aspires.</td>
<td>-Satisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Prestige</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Leisure time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Travel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Variety</td>
</tr>
<tr>
<td>Money</td>
<td>Elements pertaining to the financial costs and benefits associated with a given career or employment choice.</td>
<td>-Salary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Benefit packages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Cost of education</td>
</tr>
<tr>
<td>Family</td>
<td>Issues surrounding members of the nuclear or extended family, individually or as a unit.</td>
<td>-Mother</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Parents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Uncle</td>
</tr>
<tr>
<td>Education</td>
<td>All factors relating to the acquisition of the knowledge necessary for a given career choice.</td>
<td>-Major</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Length of program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Difficulty of coursework</td>
</tr>
<tr>
<td>Interests</td>
<td>The emotional arousal associated with the career domain being considered.</td>
<td>-Interesting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Not boring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-I enjoy working with computers</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>Any statements that reflect individuals’ insecurity regarding their character or abilities. Statements tap into the concept of self-efficacy.</td>
<td>-Can I do the job?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Am I smart enough?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-I always change my mind</td>
</tr>
<tr>
<td>Employment</td>
<td>All statements referring to obtaining the desired career position.</td>
<td>-Job market</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Can I get a job after graduation?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Advancement opportunities</td>
</tr>
<tr>
<td><em>Mental Health</em></td>
<td>All statements that reflect mental health concerns or mental health adjectives. Statements allude to a state of being or a state of mind.</td>
<td>-Anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Fear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Depression/sadness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Worry</td>
</tr>
</tbody>
</table>

Interrater reliability for the classification code and content domains for this sample yielded Kappa coefficients of .96 for the principal investigator and rater 1, .87 for the principal investigator and rater 2, and .89 for rater 1 and rater 2. Prior research on the DSW identified a classification code and content domains. These classification codes resulted in Kappa coefficients of .83, .86, and .92 respectively (Peterson & Leasure, 2004).

Research Design and Analyses

Research Design

Descriptive statistics were collected for the DSW. A co-relational study was conducted to examine the strengths of the relationships among the DSW and the BDI-II (Marczyk, DeMatteo, & Festinger, 2005). This design was selected due to the limited research documented in the literature among the DSW utilized in career counseling to assess mental health concerns.

Statistical Analyses

Participant demographics (i.e., age, ethnicity, gender) mean scores and standard deviations for all measures were reported. In addition each of the hypotheses were analyzed.

1. What are the attributes of the DSW?

   DSW attributes were examined for the following: (a) mean, standard deviation, and range for the number of circles within the larger circle; (b) average area in square centimeters for the DSW total score; (c) mean, standard deviation, and range associations in each of the eight domains; and (d) average area in square centimeters for all eight domains and blank or unexplained areas.

2. What is the relationship between the number of elicitations/productions per domain on the DSW and the BDI-II?

   Pearson product correlations were examined between eight domain scores on the DSW, the total DSW score, and the BDI-II (Cohen & Cohen, 1983).

3. What are the relationships among the DSW domains, CTI subscales, and OAQ with respect to the BDI-II?

   The DWS, CTI, and OAQ as predictors of the BDI-II were examined; these significant variables were put into a linear regression analysis and the relative contributions of predictor variables to the BDI-II were obtained.

4. What are the differences between high and low BDI-II scores with respect to the associations in eight DSW domains?
A multivariate analysis of variance (MANOVA) was utilized to assess differences between high and low groups on the BDI-II with respect to the DSW domains. Post-hoc t-tests were conducted to ascertain significant pair-wise differences between these groups on the respective domains.

5. What are the differences between high and low OAQ scores with respect to the number of associations on each of the eight DSW domains?

A multivariate analysis of variance (MANOVA) was utilized to assess differences between high and low groups on the OAQ with respect to the DSW domains. Post-hoc t-tests were conducted to ascertain significant pair-wise differences between these groups on the respective domains.
CHAPTER IV
RESULTS

The research question addressed by this study was: *What is the relationship between responses on the DSW and the presence of depressive symptomology?* To answer this question and related hypotheses, Pearson product-moment correlations, linear regression, post-hoc t-tests, and MANOVAs were performed using a predetermined significance level of $p < .01$. The results of these analyses are documented in this chapter for each hypothesis by specific research question.

**Research Question One**

1. What are the attributes of the DSW?
   
   A. Derive the distribution of the number of circles (mean, standard deviation, range).
   
   B. Derive the average area explained by the circles.
   
   C. Derive the frequency distribution of associations by each domain (mean, standard deviation, range).
   
   D. Derive the average area per domain.

The attributes of the DSW were calculated for 131 DSW profiles. Twenty DSW profiles were not used due to participants indicating “none” on the profile ($n = 8$), drawing circles that were overlapping ($n = 6$), drawing pictures or figures instead of circles ($n = 2$), and not correctly labeling circles and/or sentences ($n = 4$). As shown in Table 3, the total circle mean score ($M = 5.20$), the standard deviation ($SD = 2.42$), and the range for the number of circles for the total DSW are listed. The average area explained by the circles was 100.69 square centimeters; with the total area of the circle measuring 188.00 square centimeters. In Table 3 the means, standard deviations, and ranges are provided for all circles within each domain, including zero data. In addition, the average area in square centimeters per domain is listed. Out of all domains, the largest average area was Quality of Life ($M = 26.99$ cm$^2$) and the smallest average area was Mental Health ($M = 3.01$ cm$^2$). In Table 4, the means, standard deviations, and ranges are provided for all circles within each domain, excluding zero data. In addition, the average area in square centimeters per domain is listed. Figure 4 shows a visual representation of the mean circle size per domain including zero data.
Table 3

DSW Means, Standard Deviations, and Ranges- Including Zero Data (n = 131)

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSW Total Score (Circles)</td>
<td>5.20</td>
<td>2.42</td>
<td>1-10</td>
</tr>
<tr>
<td>DSW Total Score</td>
<td>100.69 cm²</td>
<td>-</td>
<td>12.00 cm² - 309.00 cm²</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.40</td>
<td>1.37</td>
<td>0-7</td>
</tr>
<tr>
<td>Money</td>
<td>.52</td>
<td>.60</td>
<td>0-2</td>
</tr>
<tr>
<td>Family</td>
<td>1.08</td>
<td>1.16</td>
<td>0-5</td>
</tr>
<tr>
<td>Education</td>
<td>.28</td>
<td>.74</td>
<td>0-6</td>
</tr>
<tr>
<td>Interest</td>
<td>1.02</td>
<td>1.43</td>
<td>0-8</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>.33</td>
<td>.69</td>
<td>0-3</td>
</tr>
<tr>
<td>Employment</td>
<td>.42</td>
<td>.64</td>
<td>0-3</td>
</tr>
<tr>
<td>Mental Health</td>
<td>.15</td>
<td>.42</td>
<td>0-2</td>
</tr>
<tr>
<td>No Category</td>
<td>.27</td>
<td>.72</td>
<td>0-5</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>26.99 cm²</td>
<td>-</td>
<td>.00 cm² - 188.00 cm²</td>
</tr>
<tr>
<td>Money</td>
<td>10.85 cm²</td>
<td>-</td>
<td>.00 cm² - 122.00 cm²</td>
</tr>
<tr>
<td>Family</td>
<td>22.46 cm²</td>
<td>-</td>
<td>.00 cm² - 262.00 cm²</td>
</tr>
<tr>
<td>Education</td>
<td>3.48 cm²</td>
<td>-</td>
<td>.00 cm² - 70.00 cm²</td>
</tr>
<tr>
<td>Interest</td>
<td>17.27 cm²</td>
<td>-</td>
<td>.00 cm² - 188.00 cm²</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>4.29 cm²</td>
<td>-</td>
<td>.00 cm² - 77.00 cm²</td>
</tr>
<tr>
<td>Employment</td>
<td>6.95 cm²</td>
<td>-</td>
<td>.00 cm² - 95.00 cm²</td>
</tr>
<tr>
<td>Mental Health</td>
<td>3.01 cm²</td>
<td>-</td>
<td>.00 cm² - 74.00 cm²</td>
</tr>
<tr>
<td>No Category</td>
<td>3.41 cm²</td>
<td>-</td>
<td>.00 cm² - 99.00 cm²</td>
</tr>
</tbody>
</table>
Table 4

*DSW Means, Standard Deviations, and Ranges - Excluding Zero Data*

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSW Total Score (Circles)</td>
<td>5.20</td>
<td>2.42</td>
<td>1-10</td>
</tr>
<tr>
<td>DSW Total Score</td>
<td>100.69 cm²</td>
<td>-</td>
<td>12.00 cm² – 309.00 cm²</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.97</td>
<td>1.24</td>
<td>1-7</td>
</tr>
<tr>
<td>Money</td>
<td>1.11</td>
<td>.32</td>
<td>1-2</td>
</tr>
<tr>
<td>Family</td>
<td>1.71</td>
<td>1.03</td>
<td>1-5</td>
</tr>
<tr>
<td>Education</td>
<td>1.42</td>
<td>1.06</td>
<td>1-6</td>
</tr>
<tr>
<td>Interest</td>
<td>2.11</td>
<td>1.38</td>
<td>1-8</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>1.43</td>
<td>.68</td>
<td>1-3</td>
</tr>
<tr>
<td>Employment</td>
<td>1.22</td>
<td>.47</td>
<td>1-3</td>
</tr>
<tr>
<td>Mental Health</td>
<td>1.18</td>
<td>.39</td>
<td>1-2</td>
</tr>
<tr>
<td>No Category</td>
<td>1.50</td>
<td>1.02</td>
<td>1-5</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>38.43 cm²</td>
<td>-</td>
<td>1.00 cm² – 188.00 cm²</td>
</tr>
<tr>
<td>Money</td>
<td>23.68 cm²</td>
<td>-</td>
<td>1.00 cm² – 122.00 cm²</td>
</tr>
<tr>
<td>Family</td>
<td>36.79 cm²</td>
<td>-</td>
<td>1.00 cm² – 262.00 cm²</td>
</tr>
<tr>
<td>Education</td>
<td>19.83 cm²</td>
<td>-</td>
<td>1.00 cm² – 70.00 cm²</td>
</tr>
<tr>
<td>Interest</td>
<td>34.81 cm²</td>
<td>-</td>
<td>1.00 cm² – 188.00 cm²</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>21.61 cm²</td>
<td>-</td>
<td>1.00 cm² – 77.00 cm²</td>
</tr>
<tr>
<td>Employment</td>
<td>21.69 cm²</td>
<td>-</td>
<td>1.00 cm² – 95.00 cm²</td>
</tr>
<tr>
<td>Mental Health</td>
<td>26.33 cm²</td>
<td>-</td>
<td>5.00 cm² – 74.00 cm²</td>
</tr>
<tr>
<td>No Category</td>
<td>23.63 cm²</td>
<td>-</td>
<td>3.00 cm² – 99.00 cm²</td>
</tr>
</tbody>
</table>
Figure 4. DSW Domains Mean Circle Representation of Space Utilized (n=131)

Note. Data includes zero data among the domains.
Research Question Two

2. What is the relationship between the number of elicitations/productions per domain on the DSW and the BDI-II?

H2: There is a positive relationship between the number of thoughts, feelings, circumstances, people, or events per domain on the DSW and scores on the BDI-II.

The correlation matrix in Table 5 shows no significant positive correlation between the total number of elicitations/productions on the DSW and the BDI-II score and no significant positive correlation between the total area on the DSW and the scores on the BDI-II. Thus, hypothesis H2 was rejected for the total DSW score and the BDI-II score.

Table 5
Correlations between Overall DSWMap and BDI-II (n = 131)

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>M</th>
<th>SD</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area of All Circles</td>
<td>1315251.62a</td>
<td>764231.99</td>
<td>-.134 (p = .126)</td>
</tr>
<tr>
<td>Number of Circles</td>
<td>5.20</td>
<td>2.42</td>
<td>.166 (p = .059)</td>
</tr>
</tbody>
</table>

a = pixels (13000 pixels per cm²). Area (total circle) = 188 cm², Radius (total circle) = 7.5 cm
*p ≤ .05 two tailed, **p ≤ .01 two tailed, ***p ≤ .001 two tailed

Table 6 shows the findings for the DSW domains and the BDI-II score. There was a negative, but insignificant correlation, between the total area of circles on the DSW and scores on the BDI-II. There was a positive, but insignificant correlation, between the total number of circles on the DSW (r = .166, p < .059) and BDI-II scores. In addition, there was a positive, but insignificant correlation, between the Mental Health (r = .35, n = 15, p < .173) domain and the BDI-II score. In addition to analyzing the relationship between the number of elicitations/productions on the DSW and BDI-II, the relationship between an endorsed item per domain and the BDI-II was examined. It was found there was a significant difference between the Self-doubt (r = -.207, p < .05) domain and the BDI-II score. However, it was a negative correlation. This significant finding may be an artifact if the Bonferroni corrections formula is used. Thus, hypothesis H2 was rejected for all eight of the domains on the DSW and BDI-II.
Table 6

Correlations between DSW Domains and BDI-II (n = 131)

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>n</th>
<th>Elicitation Statement (Y/N) (n=131)</th>
<th>Area of Circle</th>
<th>Number of Elicitations per Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life</td>
<td>92</td>
<td>-.004</td>
<td>-.158</td>
<td>-.074</td>
</tr>
<tr>
<td>Money</td>
<td>61</td>
<td>-.080</td>
<td>-.118</td>
<td>-.165</td>
</tr>
<tr>
<td>Family</td>
<td>82</td>
<td>-.168</td>
<td>-.104</td>
<td>.079</td>
</tr>
<tr>
<td>Education</td>
<td>24</td>
<td>.110</td>
<td>.158</td>
<td>.179</td>
</tr>
<tr>
<td>Interest</td>
<td>65</td>
<td>-.021</td>
<td>-.133</td>
<td>-.048</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>28</td>
<td>-.207*</td>
<td>-.029</td>
<td>-.049</td>
</tr>
<tr>
<td>Employment</td>
<td>42</td>
<td>.051</td>
<td>-.206</td>
<td>.010</td>
</tr>
<tr>
<td>Mental Health</td>
<td>15</td>
<td>-.086</td>
<td>-.157</td>
<td>.347</td>
</tr>
<tr>
<td>No Category</td>
<td>23</td>
<td>-.054</td>
<td>-.341</td>
<td>-.093</td>
</tr>
</tbody>
</table>

*p ≤ .05 two tailed, **p ≤ .01 two tailed, ***p ≤ .001 two tailed

Research Question Three

3. What are the relationships among the DSW domains, CTI subscales, and OAQ with respect to the BDI-II?
   H3: The DSW domains, CTI, and OAQ will capture significant unique variation in the BDI-II.

A linear regression analysis was conducted to ascertain the best predictor of depression among the DSW domain Self-doubt, CTI subscales, and OAQ. Gender was included as a control variable in this analysis to partition any effects on the BDI-II (dependent variable). The results of the correlations among the variables are shown in Table 7. The results of the linear regression are shown in Table 8. The overall $R^2$ was $.349 (F = 11.06, p < .001)$, indicating about 35% of the variability of depression was explained by the model. Only the CA and EC subscales of the CTI captured unique significant variation to the model and had standardized regression coefficients of .242 and .292, respectively. It was hypothesized that the DSW domains, CTI, and OAQ would capture significant unique variation in the BDI-II; therefore, it was accepted for two of the variables.
### Table 7

**Bivariate Correlations (n = 131)**

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. BDI-II Total</td>
<td>.299**</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. CTIDMC</td>
<td>.104</td>
<td>.448***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CTICA</td>
<td>.179*</td>
<td>.503***</td>
<td>.765***</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CTIEC</td>
<td>.209**</td>
<td>.479***</td>
<td>.577***</td>
<td>.611***</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. OAQ</td>
<td>-.58</td>
<td>.048</td>
<td>.372***</td>
<td>.171*</td>
<td>.125</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>7. Self-doubt</td>
<td>-.039</td>
<td>-.207*</td>
<td>-.084</td>
<td>-.185*</td>
<td>.181*</td>
<td>.142</td>
<td>---</td>
</tr>
</tbody>
</table>

*p ≤ .05 two tailed, **p ≤ .01 two tailed, ***p ≤ .001 two tailed

### Table 8

**Linear Regression Analysis with CTI, DSW, and OAQ as Predictors of the BDI-II (n = 131)**

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>r</th>
<th>b</th>
<th>SE_b</th>
<th>β</th>
<th>t</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAQ</td>
<td>.048</td>
<td>.087</td>
<td>.928</td>
<td>.008</td>
<td>.093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC</td>
<td>.448***</td>
<td>.048</td>
<td>.129</td>
<td>.046</td>
<td>.370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>.503***</td>
<td>.311</td>
<td>.157</td>
<td>.242*</td>
<td>1.98*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>.479***</td>
<td>.804</td>
<td>.273</td>
<td>.292**</td>
<td>2.95**</td>
<td>.590***</td>
<td>.349***</td>
</tr>
<tr>
<td>Self-doubt</td>
<td>-.207*</td>
<td>-2.23</td>
<td>1.65</td>
<td>-.102</td>
<td>-1.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.229*</td>
<td>2.28</td>
<td>1.34</td>
<td>.127</td>
<td>1.71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p ≤ .05 two tailed, **p ≤ .01 two tailed, ***p ≤ .001 two tailed
Research Question Four

4. What are the differences between high and low BDI-II scores with respect to the associations in eight DSW domains?

H4: It is hypothesized that there will be differences between those earning high scores on the BDI-II (moderate and severe depression) and those earning low scores (non-depression and mild) on the BDI-II with respect to the number of associations on each of the eight DSW domains.

A multivariate analysis of variance (MANOVA) was utilized to assess differences between high and low groups on the BDI-II with respect to the DSW domains. As shown in Table 9, the means and standard deviations are reported. It was found there was no significant multivariate effect, Wilks’ $\lambda = .968$, $F(9,121) = .442$, $p = .910$. Since there was no significant multivariate effects, tests of significance regarding pair-wise differences between groups was not necessary. Therefore, hypothesis H4 was rejected. A word of caution in the interpretation the results, as many of the variables contained an appreciable skew. The skewed variables included: Quality of Life (1.38), Family (1.29), Education (4.54), Interest (1.90), Self-doubt (2.25), Employment (1.44), Mental Health (2.85), No Category (3.85), and BDI-II (1.80). This skewed data introduces the risk of a Type I or Type II error.

Table 9

<table>
<thead>
<tr>
<th>Variable/DOMAIN</th>
<th>Quality</th>
<th>Money</th>
<th>Family</th>
<th>Education</th>
<th>Interest</th>
<th>Self-doubt</th>
<th>Employment</th>
<th>Mental Health</th>
<th>No Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>BDI-II High</td>
<td>1.59</td>
<td>1.44</td>
<td>.50</td>
<td>.51</td>
<td>.52</td>
<td>.62</td>
<td>.27</td>
<td>.69</td>
<td>.14</td>
</tr>
<tr>
<td>(n = 22)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI-II Low</td>
<td>1.36</td>
<td>1.36</td>
<td>.50</td>
<td>.51</td>
<td>1.06</td>
<td>1.15</td>
<td>.27</td>
<td>.57</td>
<td>.45</td>
</tr>
<tr>
<td>(n = 109)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Research Question Five

5. What are the differences between high and low OAQ scores with respect to the number of associations on each of the eight DSW domains?

H5: It is hypothesized that there will be differences between those who are decided on the OAQ and those who are undecided on the OAQ with respect to the number of associations on each of the eight DSW domains.

A multivariate analysis of variance (MANOVA) was utilized to assess differences between high and low groups on the OAQ with respect to the DSW domains. As shown in Table 10, the means and standard deviations are reported. It was found there was no significant multivariate effect, Wilks’ $\lambda = .929$, $F (9, 121) = 1.027$, $p = .423$. Since there was no significant multivariate effects, tests of significance regarding pair-wise differences between groups was not necessary. Thus, hypothesis H5 was rejected. A word of caution in the interpretation the results, as many of the variables contained an appreciable skew. The skewed variables included: Quality of Life (1.38), Family (1.29), Education (4.54), Interest (1.90), Self-doubt (2.25), Employment (1.44), Mental Health (2.85), and No Category (3.85). This skewed data introduces the risk of a Type I or Type II error.
Table 10

OAQ Undecided and Decided groups and DSW Domain Means and Standard Deviations (n = 131)

<table>
<thead>
<tr>
<th>Variable/Domain</th>
<th>Quality</th>
<th>Money</th>
<th>Family</th>
<th>Education</th>
<th>Interest</th>
<th>Self-doubt</th>
<th>Employment</th>
<th>Mental Health</th>
<th>No Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>QAQ Undecided</td>
<td>1.40</td>
<td>1.50</td>
<td>.60</td>
<td>.63</td>
<td>1.09</td>
<td>1.16</td>
<td>.36</td>
<td>.99</td>
<td>.89</td>
</tr>
<tr>
<td>(n = 55)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAQ Decided</td>
<td>1.39</td>
<td>1.29</td>
<td>.46</td>
<td>.58</td>
<td>1.08</td>
<td>1.16</td>
<td>.22</td>
<td>.48</td>
<td>1.12</td>
</tr>
<tr>
<td>(n = 76)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

* p < .05

**Additional Findings**

In addition to the stated research questions, this study found a significant positive correlation between the CTI and BDI ($r = .55$, $p < .001$). Also, there was a positive, but insignificant correlation between the total number of circles on the DSW and the BDI-II (non-depressed and severe depressed only) score when groups of non-depressed and depressed individuals were formed ($r = .193$, $p = .082$). There was a positive, but insignificant correlation between the DSW and CTI ($r = .141$, $p < .109$). In addition, the DSW, OAQ, and CTI attributes for severely depressed (BDI ≥ 30) individuals ($n = 8$) were examined. It was found that all severely depressed individuals had significantly elevated CTI raw scores, which ranged from 53 to 98. The severely depressed average total circle mean score ($M = 5.75$) compared to the sample average total circle mean score ($M = 5.20$) revealed a slightly larger mean for the severely depressed individuals. The severely depressed average area explained by the circles ($M = 84$ cm$^2$) was less than the average circle area explained by the sample ($M = 87.37$ cm$^2$). In regards to the OAQ, four participants were undecided and four participants were decided. Further, in Table 11 all DSW statements are listed that were deemed non-classifiable by the raters.
<table>
<thead>
<tr>
<th>Statement</th>
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<tr>
<td>“Society”</td>
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<tr>
<td>“Community”</td>
</tr>
<tr>
<td>“Yes I can reach it”</td>
</tr>
<tr>
<td>“Prior artist”</td>
</tr>
<tr>
<td>“Me, myself, and I’</td>
</tr>
<tr>
<td>“Blood, needles, death, smell, and guts”</td>
</tr>
<tr>
<td>“Sound”</td>
</tr>
<tr>
<td>“Myself”</td>
</tr>
<tr>
<td>“Stephen A. Smith”</td>
</tr>
<tr>
<td>“Jonathan Coachman”</td>
</tr>
<tr>
<td>“Lavern Williams”</td>
</tr>
<tr>
<td>“Richard Eisen”</td>
</tr>
<tr>
<td>“Hunter S. Thompson”</td>
</tr>
<tr>
<td>“Alison”</td>
</tr>
<tr>
<td>“Emily”</td>
</tr>
<tr>
<td>“People do not try to maintain as hard”</td>
</tr>
<tr>
<td>“Deals”</td>
</tr>
<tr>
<td>“Drug testing”</td>
</tr>
<tr>
<td>“I must consider if I continue toward the major and work at my current job will I just be a Professional student of the language”</td>
</tr>
<tr>
<td>“I think I’ll have room for change of course”</td>
</tr>
<tr>
<td>“Style, runways”</td>
</tr>
<tr>
<td>“Sometimes I can become really sensitive”</td>
</tr>
<tr>
<td>“Martial Arts injuries I have”</td>
</tr>
<tr>
<td>“Not having total responsibility, but being the ‘right hand man’ to a doctor”</td>
</tr>
<tr>
<td>“People from different Ethnic backgrounds listen to various types of music”</td>
</tr>
<tr>
<td>“People of the world”</td>
</tr>
<tr>
<td>“Personal feelings toward life tasks”</td>
</tr>
<tr>
<td>“Myself”</td>
</tr>
<tr>
<td>“Nothing bears down, it’s all a matter of when can it all begin”</td>
</tr>
<tr>
<td>“Time”</td>
</tr>
<tr>
<td>“VA appointments, Iraq”</td>
</tr>
<tr>
<td>“Magna”</td>
</tr>
<tr>
<td>“Me”</td>
</tr>
<tr>
<td>“Myself”</td>
</tr>
<tr>
<td>“Tough bosses pushing me to strive”</td>
</tr>
<tr>
<td>“Events of hiring and firing”</td>
</tr>
</tbody>
</table>
CHAPTER V
DISCUSSION

The general research question that served as the focus of this study was: What is the relationship between responses on the DSW and the presence of depressive symptomology? This broad question yielded five specific research questions, each with hypotheses. Each of these research questions and their associated findings will be examined from the perspective of the literature reviewed in Chapter 2. This will be followed by a summary of the limitations of the study. The discussion will conclude with a synopsis of the implications of the findings for research, and the practice of career advising and career counseling.

Summary of Findings

Using a Pearson product-moment correlation, there was no significant positive relationship found between the DSW total score, the DSW domains, and the BDI-II score. There was an unexpected significant inverse relationship between the DSW domain Self-doubt and the BDI-II, when the DSW was examined by endorsing a statement for that domain. Using a linear regression, it was found the best predictors of depression were the CTI subscales EC and CA. Also, a MANOVA resulted in no significant differences between high and low groups on the BDI-II and DSW, and no significant differences between the OAQ decided and undecided groups and DSW.

Research Question One

The first research question was: What are the attributes of the DSW?

On the DSW the average number of all circles was 5.20 and the average area was 100.69 cm². For all domains of the DSW the average number of circles ranged from .15 to 1.40 and the average area ranged from 3.01 cm² to 26.99 cm². There has been little research on the DSW, so attribute comparisons to prior literature is limited. However, some similar results in the mean area used on the DSW were found among this study and Leasure’s (2007) study. The Quality of Life domain was the most similar in the area used, as this study found an average area of 26.99 cm² and Leasure’s (2007) study reported an average area of 21.2 cm². The Education domain was the least similar in the area used, as this study found an average area of 3.48 cm² and Leasure’s (2007) study reported an average area of 12.6 cm². When comparing the sample population rank order of importance for participants within domains between this study and Leasure’s (2007) study, it was found that the Quality of Life domain had the largest area of space
used on the diagram. Leasure’s (2007) study found the Money domain to be the next largest area of space utilized, while this study found the Family domain to be the next largest area of space used. One reason for this difference may be attributed to Leasure’s study having Family listed as a subdomain of the Relationships domain. The only other similarities in terms of rank order of importance between these two studies, was that the Self-doubt domain ranked 6th.

Research Question Two

The second research question was: What is the relationship between the number of elicitations/productions per domain on the DSW and the BDI-II?

It was hypothesized that there would be a positive relationship between the total DSW score, all eight domains on the DSW, and the BDI-II. A Pearson product-moment correlation was used to explore the relationship between the DSW and the BDI-II. The analysis resulted in no significant positive relationships between the number of elicitations/productions on the DSW total score, the DSW domains, and the BDI-II. There was a positive insignificant correlation between the total number of circles on the DSW and the BDI-II score. This was unexpected given the potential associations between the number of thoughts, feelings, circumstances, people, or events and depression. While depression can alter thoughts, feelings, and behaviors and “depressed individuals experience maladaptive thoughts and cognitive distortions that affect views of the self, world, and future” (Beck, 1995; Rottinghaus et al., 2009, p. 272), it is possible that the DSW captured both positive and negative statements. If non-depressed individuals expressed many thoughts, feelings, circumstances, people, or events that had a positive impact, rather than negative it would explain why there was not a relationship between the DSW and depression.

There was a positive insignificant correlation between the Mental Health domain on the DSW and the BDI-II. It was anticipated that the relationship between the Mental Health domain and the BDI-II would be significant. One possible explanation of why this relationship was not significant may be due to the sample size within this domain ($n = 15$). With a small sample size, other things being equal, effects are harder to detect.

There was a significant negative correlation between the Self-doubt domain and the BDI-II, when comparing the number of elicitations/statements and the BDI-II score. This was unexpected, as prior research has shown depression can alter thoughts, feelings, and behaviors (Rottinghaus et al., 2009). These thoughts and distortions often affect overall functioning.
(Rottinghaus et al., 2009). A possible explanation for this finding, is that individuals who endorsed an item in the Self-doubt domain may have had specific concerns related to their career, but not an overall global feeling of sadness, sense of failure, or other relevant indicators of depression. Another possible explanation is that when individuals express their emotions, they are less likely to be depressed. Prior research has shown that for individuals who are depressed and in crisis, expressing their emotions is imperative for treatment (Puterbaugh, 2006; Young & Lester, 2001). Thus, the findings in this study suggest the expression of self-doubt is positive for individuals. If individuals are aware of their feelings and express their self-doubt, then they are less likely to be depressed.

Research Question Three

The third research question was: What are the relationships among the DSW domains, CTI subscales, and OAQ with respect to the BDI-II?

A linear regression analysis was used to ascertain the best predictor of depression among the DSW domain Self-doubt, CTI subscales, and OAQ. The linear regression revealed that the CTI subscales, OAQ, and DSW domain Self-doubt accounted for statistically significant variability in depression. The model revealed that about 35% of the variability of depression was explained by the model. Only the CA and EC subscales of the CTI captured unique significant variation. This finding was unexpected given previous research on the CTI subscale scores contribution to the BDI-II score. Previous research concluded that the DMC scale on the CTI was the single best indicator of depressive symptoms as measured by the BDI-II (Walker & Peterson, 2011). In addition, Walker and Peterson (2011) found that the CA and EC subscales were “non-significant predictors and did not add much predictability to the regression equation” (p. 9). One possible explanation for this finding may be due to the differences in the population samples. The majority of prior research on the CTI has been conducted using students enrolled in a career course or career center (client population) at a university.

In order to further examine the differences among these two populations, it is valuable to examine the CTI subscales within the framework of the CIP paradigm and the CASVE cycle. The DMC scale is often associated with the Communication, Analysis, or Synthesis phases of the CASVE cycle. While the EC scale is often associated with the Valuing phase of the CASVE cycle and the CA scale is often associated with the Execution phase of the CASVE cycle. The participants (non-clients) in this study are in the Valuing and Execution phases of the CASVE
cycle; therefore, these individuals are having difficulty prioritizing options or executing their first occupational choice.

**Research Question Four**

The fourth research question was: What are the differences between high and low BDI-II scores with respect to the associations in the eight DSW domains?

A MANOVA was used to explore the differences between high and low BDI-II scores and associations in eight DSW domains. It was hypothesized that there would be differences between those with high scores on the BDI-II (moderate and severe depression) and those with low scores (non-depression and mild depression) on the BDI-II with respect to the number of associations on each of the eight DSW domains. The analysis resulted in no significant differences between the two groups.

This was unexpected given the task and intention of the DSW. Given that the DSW is utilized to assist clients in understanding the social and emotional context involved in the career decision-making process, as well as the importance of these items (Peterson et al., 2009), it was expected that number of associations on the DSW domains would be different for individuals that had high and low depression scores. A possible explanation for this finding is that the DSW is not capturing a difference in the BDI-II due to the fact that individuals are not able to indicate the positive or negative feelings associated with each statement. Another possible explanation is that the DSW does not capture information related to depression, which is supported by the findings in this study that the DSW total score and domain scores were not significantly related to the BDI-II score.

**Research Question Five**

The fifth research question was: What are the differences between high and low OAQ scores with respect to the DSW profiles?

A MANOVA was used to explore the differences between high and low OAQ scores and associations in eight DSW domains. It was hypothesized that there would be differences between those who are decided on the OAQ and those who are undecided on the OAQ with respect to the number of associations on each of the eight DSW domains. The analysis resulted in no significant differences between the two groups. This was unexpected, as prior research has shown undecided individuals may experience increased mental health issues, such as depression.
For example, Walker and Peterson (2011) found that individuals who had chosen an occupation or indicated a first occupational choice displayed less depression than those who were undecided. Saunders and colleagues (2000) found individuals seeking assistance with career decision-making difficulties often have elevated scores or endorse items on assessments that suggests mental health issues (e.g., depression, anxiety). Saunders (1998) found that depression and dysfunctional career thinking contributed a significant amount of variation in career indecision. In addition, some individuals experiencing career decision-making difficulties may suffer from chronic difficulties, or emotional problems (Betz & Serling, 1993; Callahan & Greenhaus, 1992; Cohen, Chartrand, & Jowdy, 1995; Gati, Gadassi, Saka, Hadadi, Ansenberg, Friedmann, & Asulin-Peretz, 2011; Kelly & Pulver, 2003; Leong & Chervinko, 1996; Meldahl & Muchinsky, 1997; Osipow, 1999; Saka & Gati, 2007; Saka, Gati, & Kelly, 2008; Santos, 2001; Slaney, 1988).

One possible explanation for this finding is that the DSW does not capture mental health issues, specifically depression; therefore, no difference was found between the undecided and decided groups. This explanation is also supported by the findings in this study that the DSW total score and subscales were not significantly related to the BDI-II score.

**Additional Findings**

A Pearson product-moment correlation was used to examine the relationship between the CTI and BDI-II. A significant moderate positive correlation was found between the CTI and BDI-II. This is not surprising given prior reported correlation coefficients of .37, .41, and .42, respectively. Dagenhart (2004) reported a significant positive relationship between the CTI and BDI-II, with a correlation coefficient of .41. Saunders and colleagues (1999) found a positive correlation of .37 between the CTI and BDI-II. Walker and Peterson (2011) reported a correlation of .42 between the CTI and BDI-II.

Although it was not significant, there was a correlation between the total number of circles on the DSW and the BDI-II for non-depressed and severely depressed groups ($r = .193, p = .082$). This finding is similar to the findings across all groups (non-depressed, mild depression, moderate depression, and severe depression) for this study ($r = .166, p < .059$). If the positive and negative associations of the statements/circles were identified, it is possible the relationship between the DSW and BDI-II may become significant.
There was a positive insignificant correlation between the DSW total score and CTI \( (r = .141, p < .109) \). This study replicated Leasure’s findings that there was no correlation between the DSW and CTI (Leasure, 2007). This finding was expected given prior research. Therefore, it would appear the CTI and DSW measure different constructs.

When examining severely depressed individuals, the question, “does the state of depression influence the way in which individuals construe the social and emotional context out of which the career problem?” arises. The DSW, OAQ, and CTI attributes for all severely depressed individuals were examined. It was found that all severely depressed individuals had significantly elevated CTI scores. The severely depressed average total circle mean score was \( (M = 5.75) \) compared to the sample average total circle mean score \( (M = 5.20) \). The severely depressed average area explained by the circles \( (M = 84 \text{ cm}^2) \) was less than the average circle area explained by the sample \( (M = 100.69 \text{ cm}^2) \). There were an equal number of undecided and decided individuals. Therefore, there were no diagram patterns or statements on the DSW that suggest depression.

**Limitations of the Study**

There are several limitations that should be addressed. The DSW assessment does not provide information in regards to the valence of the statement/item, nor does it indicate or reflect a positive or negative statement. It is recommended that in future research the DSW should be modified to include the association of each statement (i.e., negative, neutral, and positive) on the first page that allows for an individual to appropriately designate the value or influence of each statement (Appendix G). There were several DSW worksheets/cases excluded due to participants indicating “none” on the profile \( (n = 8) \), drawing circles that were overlapping \( (n = 6) \), drawing pictures or figures instead of circles \( (n = 2) \), and not correctly labeling circles and/or sentences \( (n = 4) \). On the DSW data were converted from pixels to cm\(^2\) in the graphs; some of the area of the data was lost due to circles being drawn by individuals that were irregular and/or imperfect. Thus, in figure 4 the areas are representation of estimates of actual drawings. During data collection, some professors/faculty requested the principal investigator give a brief presentation which included information regarding graduate school and educational path/history to the students. For these three classes, this brief presentation may have influenced individuals to be more motivated to complete the assessments.
This study does not include or represent all variables associated with assessing mental health. For the purposes of this study, mental health is measured by one indicator, the BDI-II, since depression has been shown to negatively impact the career decision-making process (Saunders et al., 2000; Walker & Peterson, 2011; Zunker, 2008). However, other mental health problems (e.g., anxiety, personality disorders) may impede the career decision-making process and should be investigated in future studies. Furthermore, this study is limited by its measure of career decision state (Occupational Alternatives Question).

Further, this study was conducted with a community college student sample; therefore, findings of this study will not be generalizable to all individuals, but only to those who typically enroll in a community college.

Implications

Implications for Research

This study examined the social and emotional context as portrayed by the DSW in addition to career thoughts and career decidedness as possible indicators of mental health issues in career counseling. Therefore, the implications for future research will focus on the DSW.

This study’s findings suggest that the DSW could be modified from its current state, to include a way of assessing negative, neutral, and positive feelings associated with each statement (Appendix G). This modification may allow for better identification of mental health concerns, such as depression.

One future study could examine the DSW and its relationship to a broader topic of mental health issues. Presently, there are two studies that examined the DSW and CTI relationship and one study that examined the DSW and BDI-II relationship. It would be interesting to examine the relationship between the DSW and other mental health issues, such as anxiety. Aside from depression, anxiety has been found to have detrimental effects on the career decision-making process. Saka and Gati (2007) reported that anxiety is often associated with decision-making problems.

Other future research possibility for the DSW includes establishing four or six week test-retest reliability. It would also be interesting to administer the DSW on the computer, which would allow for standardization of the circles on the second page. This standardization of the circles would better capture the area utilized, as space was lost during the conversion process from pixels to square centimeters. Also, some participants drew irregular shapes or figures.
Another potential research question would be to explore differences among various populations (e.g., gender, ethnicity, socioeconomic status). An additional, interesting future study would be to investigate differences on DSW statements and maps for individuals within different phases on the CASVE cycle.

**Implications for Practice**

The cognitive information processing (CIP) approach to career problem solving and decision-making (Peterson et al., 1991; Sampson et al., 2004) provides a conceptual framework to understand how mental health issues, such as depression, may impact a client’s readiness for career decision-making. There is evidence that shows a relationship between the BDI-II total score and the CTI total score. Therefore, if individuals have a high CTI score, practitioners may want to explore mental health concerns, specifically depression. In fact, the best predictors of depression were the CTI subscales EC and CA. In this study, all severely depressed individuals had significantly elevated CTI scores. Therefore, it is important for practitioners to assess and understand mental health issues as they interfere with the career problem solving and decision-making process. Once mental health issues are identified, it is important for practitioners to integrate career and personal counseling (Lenz et al., 2010; Zunker, 2006, 2008).

However, if career counselors or career centers identify mental health issues then they must be prepared to treat or refer clients to appropriate resources. This concern is imperative as the majority of career research has been aimed at career development and career choice, but not the process of career counseling (Dagley & Salter, 2004; Niles, 2003; Whitson, 2003). In fact, some of the largest career counseling centers use master’s degree level counselors or inexperienced counselors for vocational counseling, which does not typically include personal or social counseling (Graff, Raque, & Danish, 1974). This concern becomes more pressing or imminent if a client is found to be severely depressed and/or suicidal.

While there was no relationship found between the DSW and BDI-II score, the DSW provides information about the social and emotional context involved in the career problem space. The DSW is useful as a problem mapping exercise and helps practitioners identify issues (e.g., relationships, money, self-doubt) for clients. The DSW revealed that the highest percentage of space utilized was the Quality of Life domain. This finding is consistent with current statistics for students; when ranking career goals, 60% students endorse/identify “work,
life, balance” as a priority (Florida State University, 2011). Thus, this finding reveals the importance of broader issues/concerns for individuals when making a career choice.

In addition, the DSW provides a forum for individuals to create or list their issues and concerns rather than responding to a set of pre-determined questions. The DSW is also useful in courses, such as General Psychology (PSY 2012) or Psychology of Personal and Social Adjustment (CLP 1001), in a community college setting for orientation, or during advising. Using the DSW in these settings provides an opportunity for individuals to express their social and emotional concepts involved in their decision state or career problem space.

**Conclusion**

This study examined the social and emotional context as portrayed by the DSW in addition to career thoughts and career decidedness as possible indicators of mental health issues in career counseling. Specifically, this study examined the relationship between responses on the DSW and the presence of depressive symptomology.

The results showed no significant positive relationship between the DSW total score, the DSW domains, and the BDI-II score. However, there was a contradictory significant negative relationship between the DSW domain Self-doubt and the BDI-II score, when the DSW was examined by endorsing a statement for that domain. It was found the best predictors of depression were the CTI scales EC and CA. There were no significant differences between high and low groups on the BDI-II and the number of associations on each of the eight DSW domains, and no significant differences between the OAQ decided and undecided groups and the number of associations on each of the eight DSW domains.

These findings contribute to the understanding of the DSW’s contribution in assessing the social and emotional context for individuals as related to mental health issues, such as depression. Findings of this study suggest modification of the DSW to capture the positive or negative influence of each statement. The findings of this study implicate other CTI scales (EC and CA) as significantly capturing unique variation in depression. Also, this study provides a different perspective on DSW maps and statements for client and non-client populations. In addition, these findings support the relationship among the total CTI and BDI-II scores. Lastly, this study suggests that individuals who elicit statements on the DSW Self-doubt domain are less likely to be depressed.
APPENDIX A
DECISION SPACE WORKSHEET
Decision Space Worksheet

Name_________________________________________  Date________________

The career decision you are considering__________________________________________
________________________________________________________________________

The Decision Space can be thought of as the mental and emotional environment in which an individual approaches a problem or task. Below, please list all thoughts, feelings, circumstances, people, or events that bear on the career decision you are considering.

1. __________________________________________________________________________
2. __________________________________________________________________________
3. __________________________________________________________________________
4. __________________________________________________________________________
5. __________________________________________________________________________
6. __________________________________________________________________________
7. __________________________________________________________________________
8. __________________________________________________________________________
9. __________________________________________________________________________
10. __________________________________________________________________________
The large circle below represents the Decision Space of your career decision. Draw circles within this large circle to represent each item on your list and label them with the corresponding number from page one. Use the size of the circles you draw to represent the relative importance of each item.
APPENDIX B
VERBAL CONSENT SCRIPT
Florida State University
Educational Psychology and Learning Systems

VERBAL CONSENT SCRIPT

The Decision Space Worksheet, The Career Thoughts Inventory, & the Beck Depression Inventory-II as Measures of Mental Health in The Career Decision Making Process (previously titled-The Decision Space Worksheet as a Measure of Mental Health and Change in a Career Development Course)

Hello, my name is Jennifer Solomon and I am involved in a research study called The Decision Space Worksheet, The Career Thoughts Inventory, & the Beck Depression Inventory-II as Measures of Mental Health in The Career Decision Making Process (previously titled-The Decision Space Worksheet as a Measure of Mental Health and Change in a Career Development Course) at Florida State University. We received your name because you are currently enrolled in PSY 2012 General Psychology or CLP 1001 Personal and Social Adjustment.

We are asking you to take part in a research study because we are trying to look at the usefulness of various instrument/assessment items as related to the career assessment process. You will be asked to complete four questionnaires/assessments today during your class, which will take approximately 20 minutes. The demographic questionnaire will ask you questions about your gender, ethnicity, etc. and career choice. The Career Thoughts Inventory (CTI) will ask you to endorse various statements about your personal thoughts concerning the areas of your lives that impact the way you approach and make career decisions. The Beck Depression Inventory will ask you to endorse various statements that reflect your current mood. The Decision Space Worksheet (DSW) will ask you to list all thoughts, feelings, circumstances, people, or events that effect the career decision you are making. There are no foreseeable risks, discomforts, or inconveniences for your participation in this study. Your participation is voluntary, and you can stop the surveys and questionnaires at any time without any penalty to you. You will not benefit directly from participating in this research study. You will not be paid for participating in this research study. Your decision whether or not to participate will not affect your current or future relations with the University. You will not be docked any class credits/points if you choose not to participate. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships. If you do not participate you are free to leave the class during this study or you may stay in your seat and read or complete other work.

Confidentiality can be protected only to the extent permitted by law. In order to ensure confidentiality, all participant information will be coded and will be assigned a participation number (birth month, birth date, last four of social security). This number will be attached to all subsequent data and forms. All information will be coded with participants’ numbers in a password-protected Excel file, which will only be accessible by the principal investigator and the supervising professor. All paper forms will contain the participant’s number. In this way, participant information on paper forms will be paired
only with a participation number. Paper forms, including consent forms, will be stored in a locked cabinet. Electronic records will be stored solely on my personal computer with documents that contain identifying information password-protected. Electronic data connected only to participation numbers will be kept for 5 years following submission for publication, per APA regulations.

Answering the survey/interview questions that I will ask means that you consent to participate in this research project. Based on what we have just discussed, do you understand what you will do if you choose to participate in the study? Is there any part of the study that makes you feel particularly uncomfortable? Do you have questions about the study? Do you have any questions about the informed consent? Do you have any questions about the purpose of the task/research? Do you have any questions about completing the questionnaire form? Do you have any questions about the assessments? Do you have any questions about completing the information on the scan sheet?

If you have any questions or concerns about the research, please feel free to contact Principal Investigator, Jennifer Solomon, or Faculty Advisor Dr. Gary Petersen at 850-644-3152 or gpetersen@admin.fsu.edu). If you have questions regarding your rights as a research subject, contact the FSU IRB at 850-644-8633 or humansubjects@magnet.fsu.edu.
APPENDIX C
CONSENT FORM
Florida State University Consent Form

The Decision Space Worksheet, The Career Thoughts Inventory, & the Beck Depression Inventory-II as Measures of Mental Health in The Career Decision Making Process (previously titled- The Decision Space Worksheet as a Measure of Mental Health and Change in a Career Development Course)

You are invited to be in a research study exploring the relationships between career and mental health. You were selected as a possible participant because you are a Tallahassee Community College student, currently enrolled in PSY 2012 General Psychology or CLP 1001 Personal and Social Adjustment. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Jennifer Solomon at the Department of Educational Psychology and Learning Systems at the College of Education at Florida State University.

Background Information:
The purpose of this study is to look at the usefulness of these items as related to the career assessment process.

Procedures:
If you agree to be in this study, we would ask you to fill out four questionnaires. One questionnaire will ask you to endorse various statements about your personal thoughts concerning the areas of your life that impact the way you approach and make career decisions. The second questionnaire will ask you to endorse various statements that reflect your current mood.

The total amount of time expected for full completion of this study is about 20-30 minutes.

Risks and benefits of being in the Study:
There is very minimal risk associated with the study. However, in the unlikely event that you experience some anxiety while filling out the questionnaires, you will be allowed to discontinue the activity or end your participation in the study, if you so choose. Please know that in most circumstances, a mild amount of anxiety is normal, and may be necessary to enhance positive outcomes.

In addition, you will be asked a question on one of the forms concerning suicide. We ask you to be honest in your response, but know that should you indicate that you intend to commit suicide, the principal investigator will ask you to discuss your response. In addition, referral to credentialed counselors may take place. Imminent risk of harm to yourself or others may result in preventative hospitalization.

The direct benefits to participants in this study include an opportunity to complete assessments that will facilitate career exploration during this course.
Compensation:
You will not be paid for participating in this research study.

Confidentiality:
The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, all data will be reported at the group level. Research records will be stored securely and only researchers will have access to the records. All paper forms will be kept in a locked office, accessible only to the principal investigator and supervising professor. Personal data will be kept in a password-protected electronic document. Any and all connections between your participant number and the data collected will be destroyed following the completion of data collection. All other data will be destroyed 5 years later. Please know that indication of intent to harm yourself or others will void the confidentiality agreement.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. You will not be docked any class credits/points if you choose not to participate. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:
The researchers conducting this study are Principal Investigator, Jennifer Solomon, or Faculty Advisor Dr. James Sampson at 850-644-6885 and jsampson@admin.fsu.edu. If you have a question later, you are encouraged to contact them.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@magnet.fsu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:
I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

_________________________________________  _________________
Participant Signature                                            Date

_________________________________________  _________________
Signature of Investigator                        Date
APPENDIX D
COUNSELING CENTER OR OTHER APPROPRIATE REFERRALS
Resources/Referrals

**Big Bend** (formerly, Telephone Counseling and Referral Service: 2-1-1 or 850-617-6333 (free, confidential telephone counseling, crisis intervention, and community referrals).

**Florida State University: The Career Center:** 850-644-6431 (career advising, workshops, career counseling, etc.).

**Florida State University Counseling Center:** 850-644-2003 (crisis intervention, short-term counseling, couples counseling, group counseling, alcohol and other drug evaluations, referrals, consultations, mental health presentations, one-on-one instructional sessions, alcohol and other drug counseling, peer education, other campus services for *FSU students ONLY*).

**Tallahassee Community College Career Center:** 850-201-9970 (career preparation, planning, and placement).

**Tallahassee Community College Mental Health Services:** 850-201-7726 (crisis intervention, assessment, and brief counseling).
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 12/17/2010

To: Jennifer Solomon

Dept.: EDUCATIONAL PSYCHOLOGY AND LEARNING SYSTEMS

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
The Decision Space Worksheet as a measure of mental health and change in a career development course.

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 12/08/2010. 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 12/7/2011 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 [jsampson@admin.fsu.edu]
HSC No. 2010.5472
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM (for change in research protocol)

Date: 4/28/2011

To: Jennifer Solomon

Dept.: EDUCATIONAL PSYCHOLOGY AND LEARNING SYSTEMS

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research (Approval for Change in Protocol)
Project entitled: The Decision Space Worksheet as a measure of mental health and change in a career development course.

The form that you submitted to this office in regard to the requested change/amendment to your research protocol for the above-referenced project has been reviewed and approved.

Please be reminded that if the project has not been completed by 12/7/2011, you must request renewed approval for continuation of the project.

By copy of this memorandum, the chairman 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 FWA00000168/IRB number IRB00000446.

Cc: James Sampson, Advisor [jsampson@admin.fsu.edu]
HSC No. 2011.6403
APPENDIX F

DEMOGRAPHIC QUESTIONNAIRE and OAQ
Demographic Questionnaire

Participant Number: ____________________________

Gender (please select one):
Male ☐ Female ☐

Age: _____

Ethnicity (please select one):
Asian ☐
African American/Black ☐
American Indian ☐
Caucasian/White ☐
Hispanic/Latino ☐
Other ☐ ____________________________

Year in School (please select one):
Freshman ☐
Sophomore ☐
Junior ☐
Senior ☐
Graduate ☐

Major: ____________________________

Are you currently receiving personal counseling? Yes ☐ No ☐

What occupation(s) are you considering?
____________________________________
____________________________________
____________________________________
____________________________________

Which is your first choice? If undecided, write undecided.
____________________________________
APPENDIX G
DECISION SPACE WORKSHEET (Proposed Model)
Decision Space Worksheet

The career decision you are considering__________________________________________
__________________________________________________________________________

The **Decision Space** can be thought of as the mental and emotional environment in which an individual approaches a problem or task. First, please list all thoughts, feelings, circumstances, people, or events that bear on the career decision you are considering. Second, please rate the sentences in terms of their influence (i.e., negative, neutral, positive) on the decision.

<table>
<thead>
<tr>
<th></th>
<th>Negative 1</th>
<th>Neutral 2</th>
<th>Positive 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
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<td>1</td>
<td>2</td>
</tr>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
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<td>9.</td>
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<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
The large circle below represents the **Decision Space** of your career decision. Draw circles within this large circle to represent each item on your list and label them with the corresponding number from page one. Use the size of the circles you draw to represent the relative importance of each item.
REFERENCES


Dagenhart, M. C. (2005). Relationship of college students' response styles on the Strong Interest Inventory to scores on the Beck Depression Inventory and the Career Thoughts Inventory. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 65.*


89


BIOGRAPHICAL SKETCH
JENNIFER L. SOLOMON (HOLLAND)

EDUCATION
Florida State University December 2011
Doctoral Candidate in APA-Accredited Combined Program in Counseling Psychology and School Psychology

Florida State University August 2001
Master’s Degree/Education Specialist, Counseling and Human Services/Specialist: Mental Health Counseling Specialization

Florida State University April 1999
Bachelor of Science, Psychology; Magna Cum Laude with Honors
  • Major: Psychology
  • Minor: Child Development

Tallahassee Community College July 1997
Associate in Arts, Honors graduate

CLINICAL EXPERIENCE
Psychological Center for Growth and Development 6/2011-Present
200 Gordon Avenue
Thomasville, Georgia 31792-6640
Position: Psychologist-Postdoctoral Intern (December 2011-Psychology Resident)
Responsibilities: Child, adolescent, and family counseling. Intake interview/initial assessment; assessment administration [e.g., Mental Status Examination, Early Childhood Memories, Beck Depression Inventory-II (BDI), Wechsler Intelligence Scale for Children (WISC), Incomplete Sentence Form, and Millon Adolescent Clinical Inventory (MACI)]; diagnosis and treatment plan/recommendations; and report writing.

Project Kids In Cooperation With Kids (K.I.C.K.) 8/1999-Present
Florida State University
215 Stone Building
Tallahassee, Florida 32306-5000
Responsibilities: Coordinator and administrative liaison; grant writing and submission; research and design of appropriate statistical assessments; data analysis (quantitative and qualitative); assessment administration (e.g., K.I.C.K. Questionnaire, Be Smart, and Individual Protective Factors Index) planning interventions; manuscript preparation; developed a home visit curriculum; and conducted curriculum-based interventions for at-risk children and adolescents.

Miami-Dade County, Department of Human Services, Psychological Division 8/2009-9/2010
2525 NW 62nd Street, 4th Floor
Miami, Florida 33147

**Position:** Psychology Intern

**Responsibilities:** Major rotation with Miami-Dade County Head Start-provided intake interview/initial assessment; individual and classroom observations; individual behavior management; classroom behavior management; individual counseling; parent/family counseling; consultation (e.g., Head Start staff, MDCPS, FDLRS); individualized development plans; psycho-educational and full psychological evaluations [Battelle Developmental Inventory (BDI-2), Wechsler Intelligence Scale for Children (WISC), Scales of Independent Behavior-Revised (SIB-R), Wechsler Preschool and Primary Scale of Intelligence (WPPSI-III)]; and report writing. Minor rotation with the Coordinated Victims Assistance Program (CVAC) - provided clinical services to victims of domestic violence (crisis intervention, individual therapy, advocacy, information, and referrals).

980 MacArthur Causeway
Miami, Florida 33132

**Position:** Associate Director of Foundation and Government Funding

**Responsibilities:** Grant writing and submission; program budget development; research and design of appropriate statistical assessments; data analysis (quantitative and qualitative); and grant reporting/management.

3100 S.W. 62nd Ave
Miami, FL 33155-3009

**Position:** Behavioral Medicine (Volunteer)

**Responsibilities:** Attend bi-monthly neurodevelopment seminars, formal case presentations/intakes, intake interviews (family/adults), and assessment scoring.

3974 Grove Park Drive
Tallahassee, Florida 32311

**Position:** Project Director, Leon County SMART/Boost-Up Program

**Responsibilities:** Responsible for the overall coordination of all grant activities, including fiscal management of the project. Specific responsibilities include hiring and training of staff; the implementation and distribution of duties; select appropriate quantitative and qualitative methods to address specific questions; testing [Woodcock-Johnson Tests of Achievement, Third Edition (WJ-III), and Woodcock-Johnson Tests of Cognitive Ability, III (WJ-III)]; identify relevant data to be analyzed; conduct appropriate statistical analyses; translate statistical results into comprehensible findings; and prepare all reports.

Florida State University
214 Stone Building
Tallahassee, Florida 32306-4464

**Position:** Contract Tester/Evaluator for Adult Learning Disabilities

**Private Psychology Practice** 1/2003-5/2003
1202-A East Park Avenue
Tallahassee, Florida 32303
*Position:* Contract Tester for Dr. Wonder/Department of Juvenile Justice Contract
*Responsibilities:* Intake interview/initial assessment; assessment administration [Mental Status Examination, Early Childhood Memories, Jessness Inventory, Beck Depression Inventory-II (BDI), Self-Directed Search-Form R (SDS), Wechsler Intelligence Scale for Children (WISC), Incomplete Sentence Blank-High School Form, and Millon Adolescent Clinical Inventory (MACI)]; diagnosis and treatment plan/recommendations; and report writing.

**Florida State University Career Center** 8/2002-5/2003
Tallahassee, Florida 32306-4464
*Position:* Career Advisor
*Responsibilities:* Intake interview, individual counseling sessions, assessment administration (Self-Directed Search, Career Thoughts Inventory, Minnesota Multiphasic Personality Inventory-II), report writing, and feedback/dissemination of results.

Tallahassee, Florida 32303
*Position:* Graduate Intern/Counselor
*Responsibilities:* Individual and group psychotherapy, individual psychological assessments [Millon Adolescent Clinical Inventory (MACI), Wechsler Adult Intelligence Scale (WAIS), Minnesota Multiphasic Personality Inventory-II (MMPI-II), and Beck Depression Inventory-II (BDI)], intake interviews, case notation, and formal case presentations.

**Human Services Center** 1/2000-5/2000
Florida State University
Tallahassee, Florida 32306
*Position:* Intern/Counselor
*Responsibilities:* Individual and group psychotherapy, individual psychological assessments (Beck Depression Inventory-II (BDI), intake interviews, case notation, and formal case presentations.

**HONORS AND AWARDS**
Honorary Achievement in the Department of Psychology in Recognition of Excellence in Research, 1999
Florida State University Honors in the Major Program, 1998-1999
Phi Theta Kappa Scholarship, 1997-1999
All Florida Academic Team, 1997
Tallahassee Community College Honors Program, 1995-1997

**PROFESSIONAL AND HONOR SOCIETIES**
American Psychological Association (student affiliate)
Southeastern Psychological Association (student affiliate)
Phi Kappa Phi, University-wide Scholastic Honor Society
Phi Beta Kappa, Scholastic Honor Society in the Arts and Sciences
Golden Key, National Honor Society
Student Advisory Committee for the College of Arts and Sciences, 1998-1999
Phi Theta Kappa, National Honor Society (Officer, 1997)

**PUBLICATIONS**


**PRESENTATIONS**


TEACHING
Tallahassee Community College
444 Appleyard Drive
Tallahassee, Florida 32304-2895
Position: Adjunct Faculty
Course: Personal and Social Adjustment of Psychology (CLP 1001) and General Psychology (PSY 2012)
Tallahassee, Florida 32306

Position: Lecturer/instructor - Educational Psychology and Learning Systems

Course: Communication and Human Relations Course

RESEARCH

Doctoral Dissertation 2011
The Decision Space Worksheet, the Career Thoughts Inventory, and the Beck Depression Inventory-II as Measures of Mental Health in the Career Decision-Making Process.

Dissertation chairperson: James Sampson, Ph.D.
Committee members: Gary Peterson, Ph.D., Janet Lenz, Ph.D., Janet Kistner, Ph.D.

Master’s Thesis 2001
Project K.I.C.K. (Kids in Cooperation with Kids): Examination of the Families and Adolescents’ Coping Strategies
Supervisor: Stephen Rollin, Ed. D.
Site: Florida State University

Honor’s Thesis 1999
Supervisor: Janet Kistner, Ph. D.
Site: Florida State University

GRANTS/AWARDS

Associate Director. Miami-Dade County Majors Award. $234,145.00 2008-2009

Associate Director. Peacock Foundation. $45,000.00 2008-2009

Associate Director. Target Free Third Fridays. Target Corporation. $120,000.00 2008-2009

Associate Director. Miami Children’s Museum (MCM)
Head Start Early Childhood Program. Miami-Dade County. $55,000.00 2008-2009

Associate Director. MCM Environment Education Outreach and Field Trips Miami-Dade County (CBO) Environmental Enhancement and Education. $40,519.00 2008-2009

Consultant. Project K.I.C.K. City of Tallahassee. $52,000.00 2007-2008

Consultant. Project K.I.C.K. Drug-Free Communities Program-Office of Drug Control. $65,000.00 2007-2008

Consultant. Project K.I.C.K. (RURAL) Drug-Free Communities Program-Office of Drug Control. $65,000.00 2007-2008
Consultant.  *Project K.I.C.K.*  City of Tallahassee.  $45,000.00  2006-2007


Project Director.  *Leon County SMART/Boost-Up.*  Florida Department of Education, Minnesota Learning Resource Center/New Visions.  $150,000.00.  2004-2005

Project Director.  *Project KICK: Leon Arms.*  Department of Juvenile Justice.  Approved, not funded. $50,000.00.  2000-2001

Graduate Supervisor.  Charter School Accountability Center.  Florida Department of Education.  $336,000.00.  2001-2002