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BRIEF INTERVENTION WITH HOLLAND'S THEORY AND VOCATIONAL
CALLING: THREE CONDITIONS WITH PRE-EXISTING CALLING STATUS AS A
COVARIATE

by

Nathan T. Ross

A Dissertation
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

In a series of workshops, Holland's RIASEC Theory and elements of Cognitive Information Processing Theory were infused with vocational calling language. Participants were largely college freshman in a community learning group and students participating in an extra credit opportunity in the School of Psychology. An in-person quasi-experimental design compared outcomes between three career workshops (i.e., Holland, Calling, and Control) on career decision-making self-efficacy, cognitive and emotional career decision-making difficulties, and vocational identity. The Calling workshop outperformed Holland and Control for all measured career variables (i.e., career decision-making self-efficacy, cognitive career decision-making difficulties, emotional and personality career decision-making difficulty, and vocational identity). Pre-existing vocational calling status as covariate revealed a significant main interaction, but follow-up simple effects revealed no significant difference within workshops. Therefore, using vocational calling language in a 1-hour workshop based on Holland's Theory and elements of CIP theory significantly improved the measured career variables. Follow-up *t* tests revealed the Holland workshop increased participants' confidence to match their personality to an environment, while the Calling workshop increased participants' confidence in choosing their career. Limitations and implications for results are discussed.

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DEDICATION

I would like to dedicate this dissertation to my wife for her unwavering support, patience, and encouragement provided throughout my time in graduate school. To my parents, who always encouraged me to pursue an education. To all my professors, mentors, colleagues, and friends who invested their time and energy to help me achieve success through this important educational milestone.

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CHAPTER I - INTRODUCTION

The average person will commit approximately 90,000 hours to their career during their lifetime (Butler, 2011). Perception of work varies between individuals. For example, most people view work as a job, career, or calling (Baumiester, 1991). There is a growing body of theoretical research about vocational callings, but few in-person interventions incorporating this construct exist to date. To intervene with clients who report a vocational calling, Duffy and Dik (2013) have suggested that career interventions should be evidenced-based and use Holland's RIASEC Theory (Holland, 1997) as a framework for the intervention (Dik & Duffy, 2015). Furthermore, Dik and Duffy (2015) stated they draw from Holland's RIASEC Theory to connect their client's career related gifts (e.g., unique talents specific to career environments) with career opportunities.

Two questions are ultimately raised in vocational calling research; Does the way in which vocational counselors address vocational calling matter and, if so, does the language associated with the construct significantly impact a client's outcome in counseling? Dik and Duffy (2013) call for understanding "how, why, and for whom potentially modifiable variables link to positive outcomes" (p. 434) for those who report a calling. Dik, Duffy, and Eldridge (2009) call for interventions which assess the effects of vocational calling language in career workshops.

The present study explored differences in two career interventions in a one-hour workshop, as one-hour workshops have been demonstrated to have a significant effect on treatment outcomes (Dik, Steger, Gibson, & Peisner, 2012). The interventions were career workshops that were largely the same. Both workshops had content that detailed how Holland's RIASEC Theory (1997) informed attendee interests. The Holland-based

content was paired with some decision-making components from Cognitive Information Processing (CIP) Theory (Sampson et al., 2004). The workshops differed in the language choice of the presenter. The Holland workshops stayed with language traditionally used in the theory (e.g., “environment”, “interests”). The Calling workshops integrated “calling” language and substituted terms such as career environment with “vocational calling” and interests with “unique talents and gifts.” This approach allowed the researchers to test if essentially the same intervention, with only slight language use differences, would impact the career development of those attending. The use of a control group was also integrated into the methodology with the control group receiving the workshop after post assessment. The outcomes measured prior to and after the interventions included cognitive and emotional career decision-making difficulties, career decision-making self-efficacy, and vocational identity due to their use as common career intervention outcome measures (Robert, 2006; Gati, Amir, & Landman, 2010; Tracey, 2008; and Nauta, 2010).

Calling Definition

In Dik and Duffy’s (2009) review of the construct of vocational calling and development of the Brief Calling Scale, they defined calling within a multicultural frame with concrete terms detailed in the definition below. Research into vocational calling has shown empirical evidence the construct is experienced in both religious and secular contexts (Steger, Pickering, Shin, and Dik, 2010). Therefore, the definition of vocational calling that will guide this study originated from Dik and Duffy (2009):

A calling is a transcendent summons, experienced as originating beyond the self, to approach a particular life role in a manner oriented toward demonstrating or

deriving a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation. (p. 427)

The presence of a vocational calling is reported in one third to one half of samples in career counseling. Those with a calling report increased job commitment and feeling a connection between their personality and work-environment (Duffy & Dik, 2013). It is worth noting that while a calling can motivate someone to pursue a field and stay committed to that field, Duffy and Dik (2013) discussed a dark side of vocational calling. For example, a calling could come at a great cost to one's self and family causing one to question their calling. Also, a calling can cause one to be too focused on that calling to consider other career options (Duffy & Dik, 2013). Therefore, while one may experience a calling, career counseling interventions designed to aid in the decision-making process may positively impact clients who have a calling but struggle with career decision-making. The present study explored the impact of a vocational calling on the outcome variables of career decision-making, self-efficacy, and vocational identity. This was accomplished through measuring vocational calling status as a covariate to determine if those with a vocational calling would respond differently to the workshops than those without such a pre-existing status.

Holland's RIASEC Theory

John Holland constructed the RIASEC theory of personalities and work environments in the 1950's (Holland, 1997). A RIASEC code is a typology personality code developed by Holland (1997) to help people discover their interests and abilities. There are six personality types: realistic, investigative, artistic, social, enterprising, and conventional (RIASEC). Holland (1997) theorized the personality typologies are

independent but associated with each other and form different profiles that match work environments, which are commonly depicted in a hexagon figure to represent the relationship among the types. More can be learned about this ubiquitous theory from a variety of sources (e.g., Holland, 1997; Nauta, 2010).

According to Holland (1997), when one's personality (expressed through RIASEC) matches an environment (matched with RIASEC), it is considered a good fit. The match leads to an increase in self-knowledge, occupation knowledge, and greater job satisfaction. Holland's RIASEC Theory is used as an intervention when the components of this theory are applied in practice. For example, assessing one's RIASEC code (i.e., 1st through 3rd ranked typology: SIA), then communicating the code and its implications to a client, increases the client's insight of career interests and helps to narrow the search to a more specific set of careers. This reduces unnecessary time considering careers in which there is no interest.

Holland's RIASEC Theory and Vocational Calling

Dik, Duffy, & Eldredge (2009) recommend using person-environment fit (P-E fit) interventions that infuse calling into the intervention to help discern a calling. Dik et al. (2009) suggest using P-E fit interventions (e.g., assessing RIASEC code) to broadly explore the social and personal aspects of the individual in context of how their major or potential career will be prosocial (i.e., benefit their social spheres such as their community) and fit their unique talents and gifts. In such an intervention people's interests, personality, and abilities can be described as unique talents and gifts which may help individuals reconceptualize their schemas of self-knowledge previously thought of as abilities, interests, and personality. The present study sought to determine if integrating

such calling language into a Holland-based intervention would show greater positive outcomes than similar intervention not using calling language. By recognizing a social purpose of their work, individuals can feel a sense of contribution which leads to job satisfaction and prosocial motivation (Dik & Duffy, 2013).

A randomized study of career workshops, which were calling-infused by Dik and Steger (2008), revealed no significant difference between calling infused and person-environment fit groups. Several aspects of the Dik and Steger's study differed from the present study such as their career workshop met more than once and incorporated counselor self-disclosure. While the workshops were effective at increasing self-efficacy, global meaning in life did not change. One recommendation suggested by Dik and Steger (2008) was incorporating stronger calling language in the workshops. The present study acted on this recommendation.

Career Development Outcomes

The present study explored the impact of career workshops on career decision-making, self-efficacy, and vocational identity. Each construct has been frequently utilized in studies exploring outcomes of career development interventions (Gati, et al., 2006; Lent, Ezeofor, Morrison, Penn, & Ireland, 2015; Holland, 1997). Vocational calling has been shown to aid in the decision-making process but requires further study. Therefore, the use of pre-existing vocational calling status as a covariate in the analyses sought to explore the impact a sense of calling had on the outcome variables. This could clarify if individual's view of calling or personal calling status impacts the best intervention for them. By understanding the aforementioned career development variables in a career

intervention, counselors and educators will be better equipped to handle the demands of clients and students.

Career Decision-making

Career decision making is both an aspect of the studied interventions and two components of the assessed outcome variables. The two outcomes and perspectives of career decision-making difficulties explored in the present study included cognitive and emotional and personality features. Gati et al. (1996) defined cognitive career decision-making difficulties as difficulty with the ability to make a choice, uncertainty, and dysfunctional beliefs of certain career fields. Avoiding or postponing a career decision may result in poor decisions or indecisiveness which may result in poor career quality expressed through lower career decision making self-efficacy (Gati et al., 1996; Fouad, Cotter, & Kantamneni, 2009).

Currently, it is not clear in the literature if a calling will increase or decrease cognitive or emotional career decision-making difficulty. According to Gati et al. (2006) addressing career decision-making difficulties through Holland RIASEC Theory or calling interventions alone may not fully address the difficulties experienced by college students. Gati, Amer, and Landman (2010) suggested that emotional issues require the most time-intensive interventions within career counseling. Additionally, it is theorized that career workshops, which aim to influence decision-making processes, can empower students who could be facing stress associated with college adjustment. Indeed, Jones and Jones (2014) reported that dropout rates among college freshmen is acute and suggest aligning coursework (especially for undecided majors) to their RIASEC interests. Sampson et al. (2004) suggested using Holland RIASEC Theory in conjunction with the

CASVE cycle to address career decision-making difficulties, as decision-making skills are not addressed in Holland's theory.

The CASVE cycle is the decision-making model defined by Cognitive Information Processing (CIP) Theory (Sampson, et al., 2004). The CASVE cycle consists of five stages of communication, analysis, synthesis, valuing, and execution (Sampson, et al., 2004). Communication is knowing that one needs to make a choice. Analysis is understanding one's self and potential options. Synthesis is expanding and narrowing career options. Valuing is choosing an occupation and ranking the choice(s) in order of costs and benefits. Execution is implementing a career choice and can have hurdles like gaining more education, shadowing, and seeking employment. Once these stages are completed the cycle ends with communication by asking oneself if the decision was appropriate. Sampson et al. (2004) stated the CASVE cycle was constructed for use with other theories such as Holland's RIASEC Theory, as carried out in the studied interventions. The CASVE cycle served as a cognitive frame in which to aid in making sound decisions and as a suggested method for the workshop attendees to put the information they contemplated into career decision-making actions.

Emotional and personality characteristics are longer-term manifestations that interfere with decision-making (Gati & Levin, 2014). Such factors include pessimistic views and personality traits involved in deciding a career. Gati, Amer, and Landman (2010) suggested emotional issues require the most time intensive interventions within career counseling. The CASVE cycle incorporates emotions within the decision-making process (e.g., communication internal stimuli) and may be able to provide a map of navigating this complicated terrain (Sampson et al., 2004). While the difficulty associated

with decision-making is important, one's belief in their ability (e.g. self-efficacy) is equally important.

Career Decision Making Self-Efficacy

Career decision-making self-efficacy can be defined as the belief in one's ability to make a career decision and involves preparation, adjustment, or change (Taylor & Betz, 1983; Lent, Ezeofor, Morrison, Penn, & Ireland, 2015). Those with high decision-making self-efficacy report higher life-satisfaction and overall mental health (Finley, Pugh, Noel, & Brown, 2012). Person-environment fit interventions have been shown to moderate self-efficacy of college students (Jiang, Hu, Wang, & Jiang, 2017). For example, Jiang et al. (2017) gave feedback on a Holland RIASEC code and demonstrated potential careers or callings through O*NET. Overall, there was an increase in participants' confidence in their ability to make a career decision. Additionally, career decision-making self-efficacy is positively correlated with a vocational calling (Duffy & Dik, 2013). This previous research provides a strong rationale for including career decision-making self-efficacy as an outcome in the present study.

Vocational Identity

John Holland's (1997) definition of vocational identity, which has two components of personal and environmental identity, was used. Personal identity can be defined as a clear and static understanding of one's goals, interests, and aptitudes. Environmental identity is defined as having stable, strong, and established goals, tasks, and rewards (Holland, 1997).

Researchers have produced evidence that articulating one's vocational identity can be considered a developmental task (Taber & Blankemeyer, 2015). Career theories

such as Holland RIASEC Theory have targeted this developmental task through emphasizing congruence between a person and their environment (Taber & Blankemeyer, 2015). Additionally, vocational calling has served this purpose through identifying unique talents and gifts and enabling one to live this out in their life. However, in a comprehensive review of Holland's RIASEC Theory, Nauta (2010) concluded that vocational identity is an under researched area within this theory. Additionally, vocational identity has been shown to be associated with career decision-making self-efficacy. Exploring self-efficacy and vocational identity in the context of interventions will add to the literature identifying the uniqueness, or lack thereof, of these variables.

There is a gap in the literature if one should discuss a calling in the context of vocational identity and empirical studies which address ways to do this (i.e., interventions or screeners). This study addressed vocational identity via the presentation of Holland's RIASEC Theory (1997), feedback on participants' RIASEC code, and the use of the CASVE cycle to take action with the resulting information (Holland, 1997; Sampson, Reardon, Peterson, & Lenz, 2004). Additionally, exploring the effect of participants' pre-existing calling status on this outcome variable as a covariate added to the knowledge base of vocational identity and vocational calling.

Present Study

The present study sought to answer Dik and Duffy's (2013) call for more empirically tested interventions for vocational calling as well as to contribute to the literature on brief interventions guided by Holland RIASEC Theory. There have been few studies that used vocational calling as a covariate, moderator, or independent variable (Dik, Steger, Gibson, & Peisner, 2012; Dik & Steger, 2008). The present study expanded

this area of research by studying calling experimentally while also comparing it to a common approach to career development intervention, Holland's RIASEC Theory (Holland, 1997). Additionally, participants' pre-existing calling status was used as a covariate to explore the effect on the aforementioned outcome variables as it is theorized that those with a pre-existing vocational calling will respond better to calling language.

CHAPTER II - METHOD

Participants

One hundred fifty-four participants were recruited from three sources in a mid-sized university located in the Southeastern United States. The first two participant sources were from the university's student retention services office. This office maintains several programs for students and allowed the present study to recruit from two of those programs. The first program and primary source of the data used in this study was focused on students who were identified as being at risk of dropping out during their freshman year. These were 18 to 19-year-old college students who lived in community-based learning groups during their first semester of college. Eighty-one of the participants were recruited from this program, and a total of 8 workshops were presented to capture their responses. The second retention program was similar in many ways but took place during the transitional summer between high school graduation and the beginning of students' freshman year. The students took college courses as part of this program. This group consisted of 20 participants in a total of 3 workshops. All workshops provided to the student retention groups took place during their scheduled class time. Participation in the data collection portion of the study was voluntary; however, attendance was expected since workshops.

Table 1 *Demographics*

Characteristics	Holland	Calling	Calling	Total
	(n = 50)	(n = 51)	(n = 53)	(N = 154)
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Sex				
Male	5 (10)	2 (3.9)	8 (15.1)	15 (9.7)
Female	45 (90)	49 (96.1)	45 (84.9)	139 (90.3)
AGE				
18	34 (68)	35 (68.6)	37 (69.8)	106 (68.8)
19	9 (18)	8 (15.7)	8 (15.1)	25 (16.2)
20	3 (6)	3 (5.9)	5 (9.4)	11 (7.1)
21	3 (6)		2 (3.8)	5 (3.2)
22	1(2)	4 (7.8)		5 (3.2)
24-25		1 (2)	1 (1.9)	2 (.12)
Race/Ethnicity				
White	22 (44)	28 (54.9)	22 (41.5)	72 (46.8)
Black/African American	23 (46)	21 (41.2)	29 (54.7)	73 (47.4)
Asian/Pacific Islander	3 (6)			3 (1.9)
American Indian			1 (1.9)	1 (.6)
Hispanic	2 (4)	1 (2)	1 (1.9)	4 (2.6)
Major				
Nursing	25 (50)	23 (45.2)	32 (60.4)	80 (51.9)
Psychology	8 (16)	7 (13.8)	5 (9.4)	20 (12.9)
Other	17 (34)	21 (41)	16 (30.2)	54 (35.2)
Sampling				
SRP 1	25 (44)	25 (49)	31 (58.5)	81 (52.5)
SRP 2	3 (6)	6 (11.8)	11 (20.8)	20 (12.9)
Course Credit	22 (44)	20 (39.2)	11 (20.8)	53 (34.4)
Classification				
Unknown	13 (26)	12 (23.5)	7 (13.2)	32 (20.8)
Freshman	33 (66)	35 (68.6)	43 (81.1)	111 (72.1)
Sophomore	2 (4)	1 (2)	0	3 (1.9)
Junior	2 (4)	2 (3.9)	2 (3.8)	6 (3.9)
Senior	0	1 (2)	1 (11.9)	2 (1.3)

Note. Some percentages do not add up to 100% due to rounding. Majors were included if represented above 10% of the sample. SRP- Student Retention Program.

The final pool of participants came from an online system utilized by the School of Psychology to recruit and manage course-based credit for participation in psychology-based research. When running the analyses, efforts were made to screen these participants for age, year in school, and career decision-making status to better equate to participants from the student retention groups. While collecting data, the course-credit participants determined to be making a career decision were screened into the study. In total, there were 53 course-credit participants across 11 groups. These participants were included due to the insufficient numbers of participants from the first two sources.

In total, approximately 52% of participants were nursing majors and 12.9% were psychology majors. The rest of the sample was comprised of various majors such as sociology, theater, mathematics, merchandising, etc. See Table 1 for demographics. In total there were 22 workshops across one year of data collection. There were 8 Calling, 10 Holland, and 9 control workshops.

Instruments

Demographic Questionnaire

The Demographic Questionnaire was developed to collect background information from participants and included questions assessing information such as age, sex, classification, major, marital status, employment status, and ethnicity. Two pre-post questions were included to measure students' reaction to the workshops: "On a scale of 1 to 10 (*1 = not confident* and *10 = most confident*) how confident are you in matching your personality to a career?" and "On a scale of 1 to 10 (*1 = not confident* and *10 = most confident*) how confident are you your ability to make a decision about picking your major or a career?"

Career Exploration and Decisional Self-Efficacy – Brief Decisional (CEDSE-BD) Scale

The CEDSE-BD is an eight-item scale developed to measure career exploration and self-efficacy with making a career related decision (Lent, Ezeofor, Morrison, Penn, & Ireland, 2016). The CEDSE-BD has a Likert scale ranging from 0 to 4 (i.e., *No Confidence at all* to *Complete Confidence*) with higher scores indicating decreased ability to confidently make career decisions. Sample items include, “Identify careers that best use your skills” and “Make a well-informed choice about which career path to pursue.” The total score was used to interpret the scale. Internal consistency of the CEDSE-BD is reported at $\alpha = 0.94$ (Lent, et al., 2016). The CEDSE-BD and Career Decision-making Self-Efficacy Short-Form correlate strongly at $r = 0.74$ ($p < 0.05$). Additionally, the CEDSE-BD and CDSE-SF predicted career exploration goals similarly (Lent, et al., 2016). While the CEDSE-BD is a newer measure, it appears equally capable of measuring career decision-making self-efficacy and will save time for participants due to being eight items. The pre and post CEDSE-BD internal consistency for this study was $\alpha = 0.91$.

Decision Making Difficulties

Decision making difficulties were measured using two different instruments, the Career Decision-making Difficulty Questionnaire (CDDQ) and the Emotional and Personality-Related Career Decision Difficulties Questionnaire (EPCD). The 34-item CDDQ measures the difficulties one has while making career decisions. On each item, a Likert scale ranges from *1- Does not describe me at all* to *9- Describes me well*. The total score was used for interpretation. Higher scores indicate greater career decision making difficulty. Sample items include “I know that I have to choose a career, but I don't have

the motivation to make the decision now (I don't feel like it)” and “It is usually difficult for me to make decisions.” Internal consistency was reported at $\alpha = 0.95$, and a test-retest reliability of $r = 0.80$ was reported (Gati, Krausz, & Osipow, 1996; Taylor & Betz, 1983). Additionally, the CDDQ was positively correlated with the Career Decision Scale ($r = 0.77, p < 0.001$) and negatively correlated with the Career Decision Self-Efficacy scale ($r = -0.5, p < 0.001$) (Osipow & Gati, 1998). The pre and post CDDQ internal consistency for this study was $\alpha = 0.94$.

To measure the emotional and personality-related difficulties of career decision-making, the 25-item EPCD short form was used (Gati et al., 2011). A nine-point Likert scale ranging from (1) *Does not describe me at all* to (9) *Describes me well* is offered as a response for each item. Higher scores on the EPCD indicate greater emotional and personality factors contributing to difficulty with making career decisions. Sample items include “Few careers are really interesting” and “I often worry about many things in life” (Gati, et al., 2011, p. 9). Gati et al. (2011) reported the total score internal consistency of $\alpha = .91$. The original and short form EPCD validity (i.e., structural, convergent, and divergent) have been tested and supported (Gati et al., 2011; Saka, Gati, & Kelly, 2008). The pre and post EPCD for this study was $\alpha = 0.91$.

Career Interests

Career interest was measured through the Item Pool- RIASEC Interest Markers which is a public domain measure based on Holland’s RIASEC Theory (1997). A Likert scale with 5 options ranging from *strongly like to strongly dislike* let participants rate 48 activities and 48 occupations corresponding to RIASEC themes. Higher scores on the RIASEC scales indicate the primary Holland code of the participant. The primary

Holland code consisting of highest 1 to 3 RIASEC themes were used for the participants (e.g., RIA, SI, or C). Sample items include “fix a broken faucet” and “childcare workers.” Internal consistency ranges from $\alpha = .75$ to $\alpha = .86$ for RIASEC interests (Armstrong et al., 2008). Structural validity was supported by RIASEC model consistent inter-correlations. Convergent validity was demonstrated by strong correlations with the Strong Interest Inventory Scale (Armstrong et al., 2008). The internal consistency for this study was $\alpha = 0.97$.

My Vocational Situation

The My Vocational Situation (MVS) questionnaire was developed to measure vocational identity, occupational information, and barriers (Holland, Daiger, & Power, 1980). The present study used the vocational identity subscale to measure vocational identity. Vocational identity is operationally defined as readiness of making a career decision and commitment to that decision. The vocational identity subscale is an 18-item scale with forced choice true/false answers. A sample item is, “I need to find out what kind of career I should follow.” Internal consistencies range from .85 to .89 (Holland et al., 1980; Wang, Jome, Haase, & Bruch, 2006). Test-retest of the vocational identity scale is reported at .75 from 1 to 3 months (Holland, 1997). The validity of the MVS identity scale (MVS-IS) is debated. However, it is widely used in research (Wang, Jome, Haase, & Bruch, 2006; Nicholas, & Pretorius, 1994; Betz, & Serling, 1993) and generally supported. Indeed, Savickas (1985) suggests that vocational identity is a valid construct and can be measured adequately through the MVS-IS. Additionally, the MVS-IS has supportive evidence of convergent validity given its relationship to career decision making self-efficacy $r = 0.49$ $p < .001$ (i.e., measured by the career decision-making self-

efficacy scale short form) and negatively related to career indecision, $r = -0.75, p < .001$ (i.e., measured with career decision scale). Therefore, the MVS is a reliable and valid measure used to assess vocational identity (Wang, Jome, Haase, & Bruch, 2006). The pre and post internal consistency for this study was $\alpha = 0.85$ and $\alpha = 0.84$, respectively.

Calling and Vocation Questionnaire

The Calling and Vocation Questionnaire (CVQ) was developed to measure the presence and search for a calling including a transcendent summons, a sense of purpose or meaning in life roles, and motivation by other-oriented values and goals (Dik, Eldridge, Steger, & Duffy, 2012). The CVQ is a 24-item questionnaire (i.e., 12 items for presence and 12 items for search) and items are ranked on a Likert scale from 1 to 4 (i.e., 1: *Not at all true of me*, to 4: *Absolutely true of me*). Both the presence and search scale were utilized in this study. Higher scores on the CVQ indicate the presence of and living a calling. Sample items include, “I believe that I have been called to my current line of work” and “I try to live out my life purpose when I am at work.” The total score was used to measure a calling. The internal consistency for the CVQ total score of presence was reported as $\alpha = 0.90$. The internal consistency for the total score for this study was $\alpha = 0.91$. (Dik, Eldridge, Steger, & Duffy, 2012). The test-retest coefficient based on one-month interval for total score was reported as $r = 0.75$ (Dik, et al., 2012). Convergent validity was demonstrated with a strong relationship between CVQ-Presence and CVQ-Search of calling at $r = 0.77 (p < 0.05)$ (Dik, et al., 2012). The internal consistency for the total score in this study was $\alpha = 0.91$.

Procedures

Upon approval of the university's institutional review board (IRB) the study was conducted. A team of research assistants (RAs) were trained to present the workshops. Those conducting the workshops were master's and doctoral level Counseling Psychology students and participated in training to ensure the fidelity of the workshops. Additionally, two undergraduate research assistants were used to conduct fidelity checks of the workshops.

Design

A quasi-experimental design was used to conduct this research. Workshops took place in two settings: 1) As part of a class or 2) through a course credit program. Students were randomly assigned to one of three conditions (i.e., Holland, Calling, or Control). Prior to the career workshop students took the survey through Qualtrics, a website designed to manage data. Four questions were utilized to validate responses (Meade & Craig, 2012) such as, "*mark this item 2, false.*" Post workshop assessments were collected immediately following the workshop.

Course credit

A screener questionnaire was used to determine if the participant was currently considering a career or educational status change. This was based on the work of Werner (2018) when screening participants for being in the career decision-making process. Students whom the pre-screener indicated current career or education change status, were then contacted to participate in the workshop. Those who were not determined to be making a career decision currently were awarded credit for completion of the survey and were not included in the in-person data collection. Once a workshop had at least 4

students signed-up, the workshop was assigned a condition to maintain equal condition sizes.

Group format

Group sizes ranged from 4 to 21 members due to the randomization and division of each class (e.g., some classes are larger than others). A MANOVA with group size as a covariate was used to determine if group size influenced outcomes.

Fidelity

While there is no one prescribed method of ensuring intervention fidelity (Perepletchikova, Treat, & Kazdin, 2007), the present study used the best practices and recommendations model from the NIH Behavior Change Consortium as a guideline (Bellg et al., 2004). Bellg et al. (2004) model includes accounting for fidelity in the areas of treatment design, treatment providers, delivery of treatment, and receipt of treatment (Bellg et al., 2004). The present study met treatment design standards through use of theory informed interventions, providing equal dosing in the form of scripted intervention conditions, and contingency planning (i.e., training RAs to carry out the intervention). All RAs received the same training which covered workshop topics.

The delivery of treatment was monitored through fidelity checks by trained students via audio recordings of the interventions. RAs were blind to conditions. To measure treatment adherence (i.e., if the presenter adhered to the condition protocol) and determine differentiation (i.e., treatment differing on predetermined variables), check lists were created to assess the use of calling language or Holland RIASEC Theory language during the intervention. Fidelity was assessed similarly to Dik and Steger's (2008) randomized control vocational calling group intervention. Receipt and comprehension of

treatment was defined as the participant's confidence of using the information presented. This was assessed through Qualtrics by pre/post-condition questions assessing how confident participants felt they could use the interventions.

Conditions

The terms condition and workshop will be used interchangeably. There were two experimental conditions and one control. The Holland RIASEC Theory condition (Holland) and vocational calling condition (Calling) used evidenced-based interventions from Holland's RIASEC Theory (Holland, 1997). Holland RIASEC Theory is translated into an intervention when principles from that theory are used to intervene in one's career decision-making status. Holland and Calling Workshops had the same format and information presented. However, the workshops differ on the language used in the condition and cognitive framing of the condition. For example, the Calling workshop had an added section at the beginning introducing the definition of a vocational calling and that people may seek work to live their calling. Thus, the cognitive framing alone of the calling workshop differentiates itself from the strict Holland workshop. As mentioned previously, the Holland workshop presenters used language such as "personality assessments" and "potential environments" to describe interests and fit with possible career paths. The Calling workshops utilized terms such as "unique talents, prosocial values, and abilities" and "living out your calling" to describe interests and fit with possible career paths.

Workshop format

Each workshop had the following format: 1) welcome and introductions, 2) purpose of the workshop, 3) Holland RIASEC Theory presentation, 4) feedback on

RIASEC code and example careers/callings that match these RIASEC codes from O*NET, 5) Holland Party Game or a modified experiential activity, 6) types of decision-makers, 7) CASVE cycle presentation, 8) conclusion, 9) post condition survey. The control condition took the post condition survey first, then the Holland workshop was conducted.

Hypotheses

Research Question 1: Do the career development variables of career decision-making self-efficacy, cognitive and emotional career decision-making difficulties, and vocational identity vary by condition that differ in the language used in the presentation of Holland's RIASEC Theory (1997)?

Hypothesis 1a: The Holland workshop will increase career decision-making self-efficacy significantly more than the Calling or Control Workshops.

Hypothesis 1b: The Holland workshop will decrease cognitive career decision making-difficulty significantly more than in the Calling and Control workshops.

Hypothesis 1c: Emotional and personality career decision-making difficulty will perform equally across all workshops.

Hypothesis 1d: The Holland workshop will increase Vocational Identity significantly more than the Calling and Control workshops.

Research Question 2: Does participants' calling status account for the variance between the career development variables of career decision making self-efficacy, cognitive and emotional career decision making difficulties, and vocational identity and the workshops that differ in the language used in the presentation of the vocational calling constructs?

Hypothesis 2a: When calling significantly accounts for variance in the main interaction, career decision-making self-efficacy will increase significantly more in the Calling workshop than in Holland and control workshops.

Hypothesis 2b: When calling significantly accounts for variance in the main interaction, cognitive career decision-making difficulty will decrease equally among those participants in the Calling and Holland workshops compared to the control workshop.

Hypothesis 2c: When calling significantly accounts for variance in the main interaction, emotional and personality career decision-making difficulties will be equal across workshops.

Hypothesis 2d: When calling significantly accounts for variance in the main interaction, vocational identity will be significantly higher in the Holland workshop than in vocational calling and control workshops.

CHAPTER III - RESULTS

The Pearson product-moment correlation coefficients in Table 2 reveal the pre-workshop outcome variables were all significantly correlated. Vocational calling was correlated with career decision-making self-efficacy. All post-workshop variables were correlated as well. To identify if pre-assessment career variables were significantly different, four univariate ANOVAs were conducted with a Bonferroni adjustment. No pre-workshop variables were significantly different across groups vocational identity $F(2, 151) = 0.91$ $p = 0.407$, career decision-making difficulty $F(2, 151) = 2.57$ $p = 0.080$, emotion and personality career decision-making difficulty $F(2, 151) = 2.33$ $p = 0.100$, and career decision-making self-efficacy $F(2, 151) = 0.42$ $p = 0.660$. Calling status was not different between holland and calling workshops $F(1, 99) = 1.065$ $p = .305$ This indicates the workshop participants were similar in regards to the dependent variables and calling status.

Table 2 Means, Correlations, Standard Deviations, and Reliability Coefficients for Variables of Interest

Variable	VI	CDDQ	EPCD	Self- efficacy	Calling-Total
VI	----	-.63**	-.70**	.46**	.11
CDDQ	-.64**	----	.81**	-.27**	.09
EPCD	-.65**	.79**	----	-.27**	.08
CEDSE-BD	.36**	-.27**	-.25**	----	.37*
Pre-Reliability	.85	.94	.91	.91	.91
Post-Reliability	.84	.94	.91	.91	---
<i>M</i> - PreHolland	10.84	2.87	3.67	3.19	71.34
<i>SD</i> - PreHolland	4.45	1.22	1.36	.75	14.99
<i>M</i> - PostHolland	11.64	2.85	3.36	3.10	---
<i>SD</i> - PostHolland	4.64	1.11	1.27	.76	---
<i>M</i> - PreCalling	9.63	3.31	4.22	3.06	74.14
<i>SD</i> -PreCalling	4.79	1.22	1.48	.76	12.133
<i>M</i> - PostCalling	11.84	2.96	3.76	3.22	---
<i>SD</i> -Postcalling	4.41	1.02	1.36	.72	---
<i>M</i> -PreControl	10.02	3.39	4.16	3.12	78.77
<i>SD</i> -PreControl	4.61	1.29	1.38	.69	11.08
<i>M</i> -PostControl	10.28	3.51	4.13	3.00	---
<i>SD</i> - PostControl	4.09	1.38	1.47	.69	---

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Note. Numbers above the diagonal represents correlations for pre-intervention. Numbers below the diagonal represent correlations for post-condition. VI: Vocational Identity – CDDQ: Career Decision-making Difficulties. EPCD- The Emotional and Personality-Related Career Decision-making Difficulties Questionnaire. Calling: Calling and Vocational questionnaire, CEDSE-BD - Career Exploration and Decisional Self-Efficacy – Brief Decisional Scale.

The internal consistency was within acceptable limits of all variables. Krippendorff's alpha was used to determine inter-rater reliability for the fidelity checks. The advantage of Krippendorff's alpha is the conservative cutoff value. Therefore, the interpretation of the cutoff values is as follows: less than .67 do not interpret, tentatively accept conclusions between .67 and .8, and definite conclusions at .8 and above. Additionally, Krippendorff's alpha can be used for two or more raters, nominal data, and can handle missing data (Zapf, Castell, Morawietz, & Karch, 2016). Two trained research assistants coded the workshops by listening to the language used by the presenter to rate Holland or Calling language. They were blind to the conditions. Coding analysis revealed a reliability coefficient of $\alpha < .999$ between raters indicating workshop material was presented in a consistent manner using more traditional Holland Theory or Calling language to determine the style of workshop. The workshop presenters consistently adhered to the assigned material and language for each workshop.

Independent samples *t*-tests were used to compare Holland and Calling language used in the workshops. The calling workshop used calling language significantly more than Holland $t(3.33, 13) = -6.75$ $p < 0.001$. The mean calling language used per workshop was 59.43 (9.98) and mean Holland language was 36.93 (13.53). The Holland language workshop was also significantly different between the language used $t(4.7, 18) = 8.29$ $p < 0.001$. The mean Holland language used was 51.47 (17.29) and calling was 12.47 (13.53). These results indicate that there was an adequate dose of the intended language use in each condition. In other words, the Holland workshop emphasized Holland-theory consistent language and the calling workshops infused sufficient calling language.

A closer look at mean and standard deviations of the pre-workshop variables revealed important aspects of the preworkshop outcome variables. The mean and standard deviation of vocational identity in the Holland ($M = 10.84, SD = 4.45$), Calling ($M = 9.63, SD = 4.79$), and Control ($M = 10.02, SD = 4.61$) workshops were consistent with Fuller et al.'s (1994) report of 2,442 VI scores of freshmen college students ($M = 10.9, SD = 4.7$). Fuller et al. (1994) recommended scores between 0 to 6 as requiring intervention and 16 to 18 as confident in their identity. The mean vocational identity score of the current sample fell between the recommendations for intervention and confidence, indicating average scores. The mean and standard deviation of CDDQ in the Holland ($M = 2.87, SD = 1.22$), Calling ($M = 3.31, SD = 1.22$), and Control ($M = 3.39, SD = 1.29$) resembled Osipow and Gati's (1998) study of 403 college students (76% freshman) of decided ($M = 2.78, SD = 0.82$) to slightly undecided ($M = 3.96, SD = 1.00$). An undecided CDDQ profile was consistent with a mean and standard deviation of 4.60 and 1.26, respectively. The current sample's mean fell below the Osipow and Gati's undecided student mean. The mean and standard deviation of EPCD in the Holland ($M = 3.67, SD = 1.36$), Calling ($M = 4.22, SD = 1.48$), and Control ($M = 4.16, SD = 1.43$) was lower than Saka et al.'s (2008) 728 participants who self-reported moderate difficulty ($M = 4.41, SD = 1.08$). The mean and standard deviation of career decision-making self-efficacy in the Holland ($M = 3.19, SD = 0.75$), Calling ($M = 3.06, SD = 0.76$), and Control ($M = 3.12, SD = 0.69$) was consistent with Lent et al. (2017) study of 324 college students ($M = 3.59, SD = 0.62$). Overall, the current study's participant's career development variables seem to range from average to low in comparison to similar

sample means and standard deviations. This indicates a moderate to low level of career related difficulties, identity, and self-efficacy.

A repeated measure analysis of variance (ANOVA) was conducted to analyze research question one. Across the three conditions group sizes were approximately equal (see Table 2). Greenhouse-Geisser was used due to violations of sphericity. Across time, tests, and conditions there was a significant within group interaction $F(2.37, 178.97) = 4.21$ $p = 0.012$ with a small effect size $\eta p^2 = 0.05$. Simple effects analysis revealed non-significant main interactions for the Holland workshop $F(1.23, 60.07) = 2.7$ $p = 0.092$ and Control workshop $F(1.22, 63.57) = 0.50$, $p = 0.516$. The Calling workshop demonstrated a significant main-interaction $F(1.12, 56.09) = 15.43$, $p < 0.001$ $\eta p^2 = 0.24$. Using Wilk's Lambda to evaluate differences in dependent variables, the Calling workshop had significant changes from pre to post intervention in Vocational Identity $F(1, 50) = 15.48$, $p < 0.001$ $\eta p^2 = 0.24$, cognitive career decision-making difficulties $F(1, 50) = 7.93$, $p = 0.007$ $\eta p^2 = 0.13$, emotional and personality decision-making difficulties $F(1, 50) = 9.32$, $p = 0.004$ $\eta p^2 = 0.16$, and career decision-making self-efficacy $F(1, 50) = 4.10$, $p = 0.048$ $\eta p^2 = .08$. In summary, the variables of career decision-making self-efficacy, cognitive and emotional career decision-making difficulties, and vocational identity differ in the language used in the presentation of Holland's RIASEC Theory (1997). Therefore, hypothesis 1a, b, c, and d are rejected due to the Calling workshop outperforming the Holland and Control workshops on all outcome variables.

Research question two asked if Vocational Calling would account for the changes in the workshop outcome variables. A repeated measures ANCOVA was conducted to test the research question. Sphericity was violated, therefore Greenhouse-Geisser was

used for interpretation. There was a significant interaction between condition, time, and tests when vocational calling status is used as a co-variate $F(2.36, 177.76) = 4.05, p = 0.014$. The effect size was small $\eta p^2 = 0.051$. However, follow-up simple effects revealed no significant interaction in individual workshops of Holland $F(1.22, 58.63) = 0.103 p = 0.800$, Calling $F(1.12, 54.93) = 1.24 p = 0.277$, and Control $F(1.22, 64.24) = 0.455 p = 0.540$. In summary, there was an interaction between calling, condition, and time, but no difference in simple effects. Therefore, when accounting for simple effects all hypotheses for research question 2 are rejected due to no individual group outperforming another.

To determine if workshop size influenced results, a multivariate analysis of covariance was conducted on all outcome variables between conditions with group size as a covariate. Using Wilks Lambda group size was not significant $F(4, 95) = 1.83 p = 0.129$. Therefore, when the size of group was considered, the outcome variables did not differ by condition indicating the size of the workshop did not influence results in a measurable way.

An exploratory analysis via pairwise t tests split by experimental condition, with a Bonferroni adjustment was conducted to assess the extent to which participants felt confident with matching their personality to a career and the extent to which participants felt confident with their ability to choose a major or career. A 1 to 10-point Likert scale ($1 = no\ confidence$ and $10 = complete\ confidence$) were used for self-report. The Holland workshop increased confidence in matching their personality to a career (pre $M = 7.7 SD = 1.8$, post $M = 8.3 SD = 1.7$) $t(49) = -2.67 p = 0.010$. The Calling workshop did not show a significant increase in confidence with the Bonferroni adjustment (pre $M = 7.9 SD = 1.7$, post $M = 8.5 SD = 1.5$) $t(50) = -2.28 p = 0.027$. A self-reported increase with

confidence choosing a major or career was not significant for the Holland workshop (pre $M = 8.1$ $SD = 1.7$, post $M = 8.2$ $SD = 1.8$) $t(49) = -0.69$ $p = 0.492$; however, the Calling workshop (pre $M = 7.7$ $SD = 2.2$, post $M = 8$ $SD = 1.5$) $t(50) = -3.92$ $p = 0.02$ was significant with increasing confidence in choosing a career. Therefore, the Holland workshop demonstrated a significant self-reported increase in confidence with matching one's personality to a major or career. This is most likely due to the emphasis in person-environment fit language used in the Holland workshop. Confidence to choose a major or career was changed in the Calling workshop but not the Holland workshop. This indicates a difference in participants' confidence to use the information presented in terms of Holland or calling language.

CHAPTER IV - DISCUSSION

This study examined if the language (i.e., traditional Holland RIASEC Theory or vocational calling) used in 1-hour career workshops would significantly impact participant's career decision-making self-efficacy, career decision-making difficulties, emotional and personality career-decision difficulties, and vocational identity. Additionally, the construct of vocational calling was used as a covariate to explore the extent which this construct accounted for variance in workshops. In other words, it was hypothesized that those with a pre-existing sense of calling might benefit more from the workshop with calling language infused. There were three workshops primarily based on Holland's RIASEC Theory and supplemented by Cognitive Information Processing theory's CASVE cycle. Fidelity checks determined that the workshops did vary by language as intended. The Holland workshop only used language associated with Holland's 1997 Theory, the Calling workshop used Holland 1997 Theory principles, but used vocational calling theory infused language, and the Control workshop did not have information presented until after post workshop surveys were conducted. The participants were largely drawn from college freshman who were in a community-learning groups, which were identified by the university at being an increased risk of dropping out. Other participants were volunteers from the university's School of Psychology research participant recruitment system, which offered class credit for participation. The majority of the participants were Nursing majors (51%) and females (90%).

Results for research question one demonstrated an interaction between the outcome variables, workshops, and time (pre/post). Simple effects revealed the Calling workshop had the only significant interaction for outcome variables and time.

Additionally, all outcome variables were significantly different in a therapeutic manner (e.g., increased vocational identity, decreased career decision-making difficulties, etc). One explanation for the change in scores could be related to “vocational calling language” being more engaging than strictly theory-based language. Another explanation is that vocational calling language may evoke a greater emotional response than strictly theory-based interventions. Additionally, because all career variables were significantly correlated, a change in one could reflect a more global change in career decision-making and vocational direction.

Although there is an interaction effect when vocational calling is used as a covariate, follow-up simple effects did not reveal a difference within group workshops. This may be due to the small effect size noted with the vocational calling co-variate. Therefore, while vocational calling is an important career variable, further research is needed to elucidate the impact on career decision-making and identity variables.

A notable finding was that EPCD decreased in the Calling workshop. While the literature suggests that EPCD takes a greater amount of time to change (Gati, et al., 2010), this study demonstrated a 1-hour vocational calling-based language workshop improved scores on career development measures. This also supports Dik, Steger, Gibson, and Peisner (2012) study of a 1-hour career workshop making meaningful change in participants. In other words, it appears that speaking to participant’s using their preferred language style or meeting them where they are, improved their report on career decision-making variables even in a very short intervention. Additionally, reducing the jargon by presenters may increase the way in which the participants receive and process the information.

A possible explanation could be due to this sample having more favorable pre-workshop scores. Mean vocational identity scores were consistent with means found in a study of freshman students and in the mid-range between low (0 to 6) and high (16 to 18) (Fuller et al., 1994). The calling workshop had the lowest pre-intervention mean (9.63) and highest post intervention mean (11.84) while the Holland workshop moved from pre ($M = 10.84$) to post ($M = 11.64$). The pre CDDQ means were consistent with decided to slightly undecided mean scores indicating each workshop was not consistent with an undecided profile (Osipow & Gati, 1998). One conclusion is that students arrived at the workshops at least relatively sure of their career decision (e.g., declared nursing majors). The same pattern held true for EPCD, with mean scores lower than “moderate” difficulty who did not want to seek career counseling. Therefore, the workshops had lower EPCD scores than would be expected for those seeking career interventions (Saka et al., 2008). Additionally, career decision-making self-efficacy was consistent with a study of 324 college students used to validate the measure (Lent et al., 2017). The mean score of all workshops for career decision-making self-efficacy was above 3 (range 0 to 4) and within a standard deviation of the original normed group. Therefore, clinical application suggests scores in this range (see Table 2) can be improved with a short time investment on the part of the client and practitioner. Indeed, the nature of this study demonstrated that brief workshops (i.e., small dose) can improve students’ outlook on their career decidedness, self-efficacy, and identity.

Additionally, this study added information about the relationship between career decision-making self-efficacy and vocational identity. Due to the significant correlation of these variables, it is likely that increasing one, would increase the other. This adds to

Nauta (2010) suggestion that the two constructs are related. Vocational identity and career decision-making self-efficacy may share a certain amount of variance and further exploration is warranted.

The demographic questionnaire attempted to assess the confidence that participants reported in implementing the information presented. An exploratory analysis via pairwise *t* tests revealed those in the Holland workshop were significantly more confident in matching their personality to a career than the Calling or Control workshops. However, the Calling workshop participants reported being more confident with deciding their major or career than the Holland and Control Workshops. This difference may represent the language used in each workshop. For example, the Holland workshop emphasized matching “personality to environment” while the Calling workshop emphasized using “unique talents to live a calling.” Furthermore, those in the Calling workshop may had language which was more conducive to implementing decisions associated with picking a major or career.

Limitations

There were several limitations with the present study. One limitation was the quasi experimental design. The participants were not fully representative of a diverse group of students. For example, most of the participants were female, freshman nursing majors. While there appeared to be more men present in the workshops (i.e., through class), participants included in the study sample needed to complete both the research pre and post survey. It is possible that workshop present men, chose not to complete the survey at a higher rate than their female counterparts. Another limitation was the pre-intervention means of the career variables. Overall, the study had lower pre-workshop

mean scores that one would expect to find in an individual seeking career counseling. Specific cutoff scores and subscales were not utilized in this study. Based on the pre-workshop scores of career decision-making self-efficacy, vocational identity, and cognitive and emotional/personality career decision-making difficulties this study may reflect a well-adjusted career counseling group. For example, the preworkshop mean of CDDQ in the Holland workshop was 2.87. Due to starting with a lower mean score, the group did not have much room to improve and ended with a 2.85. However, the Calling workshop started with a CDDQ mean score of 3.31 and ended with a 2.96, approximately where the Holland workshop started. While an improvement is an improvement, the magnitude of the change in mean scores is small. This was an observable pattern across all variables. This may indicate the workshops fulfilled to reassure college students of their choices (through use of calling language) or did not significantly change their low pre-workshop career distress (through use of Holland language). While the magnitude of changes were small, it is notable that any improvement observed in a short intervention across multiple measures is promising.

While randomization was utilized during the study, the overall quasi-experimental design was a limitation. The use of three different populations was a potential limitation due to different incentives offered for each population. While it is possible to participate meaningfully and receive bonus credit, the question must be raised that extra credit could influence results.

Future study

Areas of future study may account for pre-intervention career distress. For example, selecting workshop participants with higher scores of career decision-making

difficulty, low career decision-making self-efficacy may produce larger effects given greater reported distress. Future research may build on this study by improving the strength of the study design, i.e., fully experimental. For example, selecting participants with career distress and randomly assigning them to a treatment condition would protect against sampling bias. Additionally, a greater diversity of ethnicity and majors will improve the generalizability of the results. Perhaps another avenue for future research would be to develop career-focused interventions tailored to students in certain fields (e.g., psychology, STEM). For example, freshman nursing majors may wish to “be a nurse” but may not know in which field they wish to specialize (e.g., ER, ICU, OR, NICU).

Practical Implications

The Calling workshop utilized language for work such as pursuing a passion and calling, using unique gifts, having a sense of purpose, helping others, and living out values. The core aspects of Holland’s theory retained in the Holland and Calling workshop was Holland’s (1997) RIASEC code and the assumptions and principles of Holland’s RIASEC Theory. Core aspects of CIP theory was the CASVE cycle which is a model of making decisions. The Calling workshop focused on explaining the CASVE cycle through use of calling language, e.g., Communication- knowing there is a gap between where you are and pursuing your calling. Assessing for a calling can be beneficial for the participant and practitioner because this study provided information about how to best communicate in a meaningful way.

The implication drawn from this study for practitioners, teachers, vocational services, and university administrators is to utilize interventions grounded in theory (i.e.,

Holland, CIP) with language that speaks to student's career related thoughts, emotions, and behaviors in a way that evokes meaning. Simply put, this can be done through using calling language and using less jargon-based language. Additionally, the present study supported presenting students with a career personality code, how to use the code (e.g., presenting careers from O*Net), and providing a guide of how to use the information (i.e., CASVE Cycle) can increase participants' career decision-making, self-efficacy, and vocation identity. University administrations may wish to utilize career counseling resources to provide short presentations in or outside of classes. Such short interventions such as that described in the present study (e.g., theory based; calling language inclusion) have shown to improve the career development status of college students.

Summary

In conclusion, this study contributed to the vocational literature by demonstrating that varying the language used in a brief career workshop which utilized elements from Holland's (1997) theory and CIP theory (CASVE cycle) had a differential impact on college student participants. The Calling workshop outperformed the Holland workshop. The Calling workshop showed significant increases in vocational identity and career decision-making self-efficacy and decreases in cognitive and emotional/personality career decision-making difficulties. When pre-workshop vocational calling was used as a covariate, there was a significant main interaction, but no individual workshop differences. This tells us the individual main interactions were not strong enough to detect on a condition basis and that is it unclear whether those with a pre-existing status react differently to the workshops. Therefore, the use of vocational calling language impacted outcome variables of career decision-making difficulties, self-efficacy, and

vocational identity. However, when accounting for vocational calling status, while significant, requires future research. Practitioners in a time-limited setting should be encouraged to speak to participants' work passions, calling, unique talents, and living their values within a theory-driven approach.

APPENDIX A –IRB Approval Letter

Office of
Research Integrity



118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

Modification Institutional Review Board Approval

The University of Southern Mississippi's Office of Research Integrity has received your notice of modification for your submission Brief Intervention with Holland's RIASEC Theory and Vocational Calling: Pre-existing Calling Status and a Moderator (IRB #: IRB-18-24).

Your modification has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-18-24

PROJECT TITLE: Brief Intervention with Holland's RIASEC Theory and Vocational Calling: Pre-existing Calling Status and a Moderator

SCHOOL/PROGRAM: School of Psychology, Psychology

RESEARCHER(S): Nathan Ross, Emily Yowell

IRB COMMITTEE ACTION: Approved

Category 2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

APPROVED STARTING: July 3, 2019

A handwritten signature in cursive script that reads "Donald Sacco".

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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