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Learning Models, Personality Traits, and Job Satisfaction in Forensic Psychology Practitioners

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This is to certify that the doctoral dissertation by

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Abstract

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by

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MS, Johns Hopkins University, 2006

BS, College of Notre Dame of Maryland, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Forensic psychology is a distinct specialization requiring practitioners to approach problems differently than in other psychological specialties. While the use of problem-based learning in the medical field is well-researched, there is a lack of literature regarding its use in forensic psychology. This quantitative survey-based study was designed to investigate the relationship between learning models and personality traits and job satisfaction in forensic psychologists. In the current study, an adaption of Vygotsky's constructivist zone of proximal development theory and Holland's theory of career choice were applied to forensic psychology instruction to assess the degree to which personality and learning models interrelate among forensic psychologists. Overall, the sample population of 49 forensic psychology professionals experienced moderate to high levels of job satisfaction, irrespective of personality. No statistical significance was found with regard to learning model, personality, and job satisfaction. While not statistically significant, the findings do highlight a personality typology that differed from the overarching psychology profession. Holland's theory categorized individuals in the psychology/psychologist profession as social and artistic. In the current study approximately 37% identified as investigative, while only 4% identified as artistic. It may be beneficial to expand the inclusion criteria to international participants to provide additional statistical analysis with a larger data set. Positive social change may result from an increased awareness of which personality types are better aligned to the forensic psychology profession.

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Dedication

I would like to dedicate this project to my wonderful family and friends. Thank you for keeping me grounded and cheering me on. You were my village. I completed this because of your faith, love, and support. You kept me going and helped me achieve this goal.

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Table of Contents

List of Tables v

Chapter 1: Introduction to the Study 1

Introduction 1

Background 4

Problem Statement 5

Purpose of the Study 6

Research Questions and Hypotheses 7

Theoretical Framework 8

Nature of the Study 10

Definitions 12

Assumptions, Scope, and Delimitations 13

Limitations 14

Significance 14

Summary 16

Chapter 2: Literature Review 17

Introduction 17

Literature Search Strategy 18

Theoretical Foundation 19

Literature Review 21

How Students Learn 22

Learning Models 22

Training in Forensic Psychology 28
Learning and Job Satisfaction 29
Personality and Job Satisfaction 33
Gender and Job Satisfaction 38
Age and Job Satisfaction 39
Year of Experience and Job Satisfaction 40
Personality and Career Choice 42
Gap in Literature 44
Historical Perspective 45
Conclusions 46
Summary 48
Chapter 3: Research Method 51
Introduction 51
Research Design and Rationale 51
Methodology 52
Instrumentation and Operationalization of Constructs 54
Independent Variables 58
Dependent Variables 59
Analysis of Variance 59
T-test 60
Research Questions 60
Procedures and Data Collection 62

Threats to Validity 63
Summary 64
Chapter 4: Results 65
Introduction 65
Data Collection 65
Analysis Methods 67
Statistical Assumptions 67
Descriptive Statistics 69
Analysis Results for the Main Question 79
Analysis Results for the First Sub-Question 84
Analysis Results for the Second Sub-Question 88
Summary 93
Chapter 5: Summary, Conclusions, and Recommendations 94
Introduction 94
Key Findings 94
Interpretation of the Findings 95
Interpretations Based on Theoretical Framework 97
Limitations of the Study 99
Recommendations 99
Implications 100
Social Change 101
Conclusion 101

References.....103

Appendix A: Participant Demographic Questions.....119

Appendix B: MSQ Survey Questions.....120

Appendix C: Preliminary License Agreement to Use NEO-FFI-3 and SDS-R.....121

List of Tables

Table 1 Description of Independent Variables 59

Table 2 Research Hypotheses and Analysis 62

Table 3 Demographics, Categorical Variables 70

Table 4 Participant Demographics, Continuous Variables 70

Table 5 Aspects of Job Satisfaction 71

Table 6 MSQ Survey Responses 72

Table 7 Normality of the Continuous Study Variables 74

Table 8 Pearson's Correlation between the Four Measures of Job Satisfaction, Age, and Years of Experience 75

Table 9 Descriptive Statistics of the Four Measures of Job Satisfaction by Gender 76

Table 10 Descriptive Statistics of the Four Measures of Job Satisfaction by Career Descriptor 77

Table 11 Descriptive Statistics of The Four Measures of Job Satisfaction by Learning Model 78

Table 12 Results of the 2-Sample T-Tests for the Four Measures of Job Satisfaction by Learning Models 79

Table 13 Personality Traits Based on SDS-R and NEO-FFI 80

Table 14 Job Satisfaction Descriptive Statistics by SDS-R Personality Trait 81

Table 15 ANOVA Table for SDS-R Personality Trait 82

Table 16 Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits 83

Table 17 ANOVA Table for NEO-FFI Personality Trait 83

Table 18 Descriptive Statistics of the Four Measures of Job Satisfaction by SDS-R Personality Traits 85

Table 19 Results of the 2-Sample T-Tests For the Four Measures of Job Satisfaction by SDS-R Personality Traits 85

Table 20 Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits 87

Table 21 ANOVA for NEO-FFI Personality Traits 87

Table 22 Descriptive Statistics for Job Satisfaction by SDS-R Personality Traits 89

Table 23 Results of the 2-Sample T-Tests for the Four Measures of Job Satisfaction by SDS-R Personality Traits 90

Table 24 Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits 92

Table 25 ANOVA Table for NEO-FFI Personality Traits 92

Chapter 1: Introduction to the Study

Introduction

Current training methodologies for forensic psychology instruction were not specifically created for forensic practice; instead, they were adapted from existing clinical psychology instruction (Day & Tytler, 2012; LaDuke, DeMatteo, Heilbrun, & Swirsky-Sacchetti, 2012). Forensic healthcare professionals (FHCP) are continually exposed to distressing situations and, as such, often experience higher levels of occupational stress compared to other professions (Dunsmuir & Frederickson, 2014; Elliott & Daley, 2013; Sebastian, 2012; Templer, 2012). Although previous researchers have established the correlation between stress and job satisfaction, the degree to which personality impacts job satisfaction for FHCP is less understood. Researchers have also not explored the relationship between personality traits, learning models, and job satisfaction in forensic psychology professionals, which illustrates a gap in current research that this study aims to fill.

The application of problem-based learning (PBL) in nonmedical specializations has become a popular topic of research (Xian & Madhavan, 2013). However, there has not been extensive research into the broader applications of PBL in specific disciplines, such as forensic psychology. Additional multivariable job satisfaction studies that aid in identifying how learning style and personality influence job satisfaction are needed (Day & Tytler, 2012; Zurlo, Pes, & Capasso, 2016). Little research exists regarding how learning is affected by personality and whether learning and personality are distinct predictors of job satisfaction in forensic psychology (Bate & Taylor, 2013; Sebastian,

2012; Wille, Hofmans, Feys, & De Fruyt, 2014). The purpose of this study was to compare two learning models and assess the influence of personality on the level of job satisfaction in forensic psychology professionals.

Forensic psychology is a distinct specialization requiring practitioners to approach problems differently from other psychological specialties, and it would benefit from its own signature pedagogy (Day & Tytler, 2012). Forensic psychology professionals may pursue diverse careers as clinicians, researchers, or policymakers. The extent to which training impacts the forensic psychology profession has not been methodologically evaluated (Najdowski, Bottoms, Stevenson, & Veilleux, 2015). As the demand for training programs has increased in the field of forensic psychology, there is growing need for consistent instruction for its students (Curtis & Day, 2013; Day & Tytler, 2012; Najdowski et al., 2015). Understanding whether PBL promotes more satisfied practitioners compared to traditional lecture-based models in preparing forensic psychology students, and whether individual personality is an influential factor may help guide individuals considering careers in the profession. Additional empirical data may be useful in developing a pedagogy tailored to forensic psychology professionals.

According to Elliott and Daley (2013), FHCPs experience higher levels of stress and burnout, which results in decreased job satisfaction. Understanding how personality influences job satisfaction will provide valuable insight into which personality types are best suited for certain careers. Individuals may be more apt to choose a career in forensic psychology if they are aware of the role personality and learning models play in career selection. Employees who select professions that better align with their personality traits

experience higher levels of job satisfaction (Elliott & Daley, 2013); thus, they may be more satisfied practitioners. Positive social change implications may include (a) an increased awareness of which personality types may be better aligned to the forensic psychology profession, (b) the addition of valuable data to assist in creating a tailored pedagogy for forensic psychology instruction, and (c) higher retention and job satisfaction rates among forensic psychology professionals.

Chapter 1 will serve as a study overview, and I introduce the background, framework, and significance of this study. I also define key terminology and present predictors for job satisfaction. The history and benefits of PBL will be introduced. The remainder of this chapter will include material regarding the relationship between job satisfaction, personality traits, and training models. Previous researchers have focused on the relationship between job satisfaction and personality or learning models and job satisfaction rather than addressing these three elements simultaneously. The following sections provide an overview of learning models and the relationship to both personality and job satisfaction. In addition, the lack of existing forensic psychology professional personality data will also be presented. This information will further the understanding of how personality traits relate to job satisfaction among forensic psychology professionals. I examined the correlation between two learning models using a quantitative survey approach and assessed the influence of personality on job satisfaction in forensic psychology professionals.

Background

Few graduate-level educational curricula provide the requisite competencies for specializations in professional psychology. This lack of appropriate training may lead to difficulties in practice (Barlow, 2012). Self-directed learning approaches, such as PBL, may be appropriate for forensic instruction because they provide students with tools specifically geared toward successful practice. The PBL approach is not as pervasive as lecture-based methods of instruction (Azer, Peterson, Guerrero, & Edgren, 2012; De Jong, Verstegen, Tan, & O'Connor, 2013; Wu, Wang, Spector, & Yang, 2013). PBL encourages a more profound understanding of the material and higher levels of student engagement. Not all students easily accept self-directed learning (Baroffio, Vu, & Gerbase, 2013; Pecore, 2013; Westhues, Barsen, Freymond, & Train, 2014). The ability for some students, but not others, to adapt to the student-driven learning approach may be attributed to differences in personality (Westhues et al., 2014).

Individuals are often drawn to careers that reinforce their personality traits (Denissen, Ulferts, Lüdtke, Much, & Gerstorf, 2014; Hardin & Donaldson, 2014). Prospective employees tend to find careers that promote characteristics of their personality, which results in greater job satisfaction. Although previous researchers have addressed various factors and their impact on job satisfaction, they have not provided a truly comprehensive picture of forensic psychology professionals. Many researchers have assessed the potential for job satisfaction to be a consequence of personality in the workplace. Typically, negative personality traits, such as neuroticism, are associated with poor stress management skills and lower job satisfaction (Maggiori, Johnston, & Rossier,

2016; Saksvik & Hetland, 2011). By examining the impact of personality traits and learning models on the degree of job satisfaction in practicing forensic psychology professionals, the current gap in the research was addressed in this study.

Problem Statement

According to Day and Tytler (2012), forensic psychology lacked a focused pedagogy. Adequately prepared forensic psychologists are imperative to the profession and would reduce the likelihood of difficulties in practice such as reduced professional competency and an inability to form accurate evidence-based opinions (Day & Tytler, 2012; Ermshar & Meier, 2014). As the forensic psychology profession continues to grow and evolve, more modern learners will enter the profession, requiring new effective approaches in instruction. Students' previous real-world experiences and education impact their learning outcomes (English & Kitsantas, 2013; Schmidt, Rotgans, & Yew, 2011; Sockalingam & Schmidt, 2013). In traditional lecture-based approaches, students often struggle with knowledge retention and skills application (O'Connor & Carr, 2012). Using PBL in forensic psychology instruction may target each learner's strengths, improve the psycho-legal reasoning and decision-making skills exclusive to the profession, and lead to greater success in practice.

Although PBL has been well-examined in the medical and nursing fields, researchers have not achieved this level of inquiry in forensic psychology training. PBL is a training approach used for medical students; it focuses on teaching students how to overcome problems they may encounter in clinical practice and to identify their own learning needs (Li et al., 2013; O'Connor & Carr, 2012; Shin & Kim, 2013). Forensic

psychology could benefit from a more problem-based approach tailored to the diverse needs of its practitioners. Given that PBL has benefited medical students with similar needs in critical thinking and problem-solving skills, it may also benefit forensic psychology students more than the lecture-based method of instruction.

Moreover, job satisfaction research to date has typically focused on organizational and situational factors, rather than learning approaches and personality. The identification of causal paths for personality differences with respect to job satisfaction indicates that thoughts and behaviors influence career selection (Templer, 2012). For the purposes of this study, job satisfaction is defined as the emotional state that results from job appraisal or experiences in the workplace (Zhai, Willis, O'Shea, Zhai, & Yang, 2013).

Purpose of the Study

The purpose of this quantitative study was to investigate the relationship between learning models and personality traits (independent variables) and job satisfaction (dependent variable) in forensic psychologists. Learning models were broken into two categories: PBL or lecture-based. The lecture-based group served as the control. Demographic information, including age, gender, learning models, career descriptors, and years of practice, was collected. The three covariate variables for this study were age, gender, and years of experience. The lack of data pertaining to how personality impacts job satisfaction was addressed by examining the relationship between personality traits and learning models on the degree of job satisfaction in practicing forensic psychology professionals.

Research Questions and Hypotheses

The relationships between PBL, lecture-based learning, and personality traits were examined to determine their effect on the dependent variable, job satisfaction, in forensic psychology professionals. This study was guided by three overarching questions, which were used to assess the relationships between personality traits, learning models, and job satisfaction. The following research questions were investigated using the zone of proximal development as the framework. The null hypotheses (H_0) and the alternative hypotheses (H_a) are also provided.

RQ1: Do sociodemographic factors predict job satisfaction in forensic psychology?

SQ1a: Do age and gender influence job satisfaction?

$H_0 1_1$: Age and gender do not influence job satisfaction.

$H_a 1_1$: Age and gender influence job satisfaction.

SQ1b: Do years of experience influence job satisfaction?

$H_0 1_2$: Years of experience does not influence job satisfaction.

$H_a 1_2$: Years of experience influences job satisfaction.

RQ2: Is there a relationship between learning models and job satisfaction in forensic psychology?

$H_0 2$: Forensic psychologists trained using the problem-based learning model do not have higher job satisfaction than those trained using a traditional lecture-based learning model.

H_a2: Forensic psychologists trained using the problem-based learning model have higher job satisfaction than those trained using a traditional lecture-based learning model.

RQ3: Is there a difference in job satisfaction among forensic psychologists with differing personality traits?

SQ3a: Is there a difference in job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits?

H_03_1: There no difference in the level of job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits.

H_a3_1: There a difference in the level of job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits.

SQ3b: Is there a difference in job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits?

H_03_2: There no difference in the level of job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits.

H_a3_2: There a difference in the level of job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits.

Theoretical Framework

The theoretical framework for this study included Vygotsky's constructivist zone of proximal development (ZPD) theory and John Holland's theory of career choice. The

ZPD theory (1978) posits that there is a difference between what a learner can complete with assistance and what they can accomplish on their own. This study was an adaptation of the ZPD theory examining the application of gained knowledge on job satisfaction in an adult professional population. Learning is a social activity driven at the individual level by a learner's unique style and potentially influenced by personality (van Compernolle & Zhang, 2014; Vygotsky, 1980). The ability to solve problems by applying newly gained information is heightened with the assistance of an instructor. In ZPD, when students are supported while learning new information or processes, they are more able to apply that information on their own. In this study, I examined the self-directed learning aspect of this theory rather than any specific curricula or teaching plan. Holland's career choice theory (1959) speaks to vocational personalities. Holland posited that individuals select careers that best suit their personalities and allow them to flourish. The more personality and vocation align, the more likely individuals will be satisfied with their job and the better they will perform (Lounsbury, Foster, Levy, & Gibson, 2014; Shaffer & Postlethwaite, 2013). According to Holland's theory, the psychology profession is associated with individuals who identify as social and artistic. In the current study, both theories were applied to forensic psychology instruction to determine the degree to which personality and learning models interrelate in forensic psychologists.

As a constructivist paradigm, the PBL model allows students to apply context-specific critical thinking to solve real-world challenges and scenarios by building on the active-learning process (Gould, Sadera, & McNary, 2015). Both nursing and medical students who engage in PBL report greater knowledge retention and better overall critical

thinking skills development (Bate & Taylor, 2013; Shin & Kim, 2013; Xian & Madhavan, 2013). However, few scholars have addressed how this learning model may be effectively adapted for different populations, personality types, and disciplines. Contemporary authors have indicated that the application of ZPD theory remains relevant to current research (Armstrong, 2015; Fernández, Mercer, Wegerif, & Rojas-Drummond, 2015; Poehner, 2012). Additional investigation is needed to determine the applicability of the PBL construct compared to other approaches in forensic psychology instruction. This research may assist in understanding the relationship between learning models, personality traits, and job satisfaction in forensic psychology.

Nature of the Study

When evaluating how well the PBL paradigm applied to their study populations and influenced critical thinking in nonpsychology related disciplines, the majority of researchers employed qualitative methods including interviews and transcript reviews (Belland, French, & Ertmer, 2009; Dunsmuir & Frederickson, 2014; Chan, 2013; English & Kitsantas, 2013; Hmelo-Silver, 2004; Joo, Park, & Oh, 2013; Kent-Wilkinson, 2011; Kinchin, Cabot, & Hay, 2008; Najdowski et al., 2015; Redshaw & Frampton, 2014; Schmidt et al., 2011; West, Williams, & Williams, 2013). Conversely, Baroffio, Vu, and Gerbase (2013) and McLaughlin and Kan (2014) employed survey-based quantitative data collections to assess the impact of learning methodologies in various disciplines. In this survey-based study, I used a quantitative quasi-experimental approach. Both PBL and traditional learning models were defined in the survey. Practicing forensic psychology professionals were the target population for this study. Participants were

asked to select the learning model that best reflects their vocational training. In addition, respondents indicated their licensure (licensed or nonlicensed) and degree type (PsyD or PhD). The self-directed search, revised fifth edition, (SDS-R) is a self-administered assessment instrument consisting of six 14-item scales used for career planning and was derived from Holland's RIASEC (realistic, investigative, artistic, social, enterprising, and conventional) person-environment typology.

Vygotsky's ZPD theory was the basis of effective PBL. In keeping with this theory, student-driven learning builds on a learner's previous knowledge (Sockalingam & Schmidt, 2013). A quantitative approach was used to assess (a) the five-factor model personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism); (b) Holland's vocational personality types (RIASEC: realistic, investigative, artistic, social, enterprising, and conventional); and (c) training modality (PBL or traditional lecture-based) as predictors of satisfied forensic practitioners. Holland's career codes were used to assess vocational satisfaction and to determine whether a unique vocational personality profile exists for forensic psychology professionals that is distinct from the present category that groups all psychologists together.

The participants' degree of overall job satisfaction was assessed with the Minnesota Satisfaction Questionnaire Short Form (MSQ). The MSQ measured overall job satisfaction. It used a 5-point Likert scale where a value of 1 represents *very satisfied* and a value of 5 represents *very dissatisfied*. Participant personality traits were surveyed using both the updated NEO-FFI-3, to assess the five-factor model personality traits, and

the SDS-R, to assess how well individuals' personalities match their occupations. The MSQ, NEO-FFI-3, and SDS-R were combined into one survey instrument.

I used an electronic survey to obtain information in four main areas: (a) sociodemographic information, (b) job satisfaction, (c) learning model experience, and (d) personality assessment. The job satisfaction scale was administered prior to the personality assessment to reduce the chance of bias in the personality scale results. The PBL group was compared to the traditional lecture-based group. Through subsequent analysis, I assessed the roles of the learning model and personality as effective predictors for forensic psychology job satisfaction while controlling for age, gender, and years of experience. Job satisfaction was the dependent variable. The independent variables used as predictors included training modality, personality type, and four sociodemographic factors (age, gender, and years of experience). These variables will be discussed in greater detail in Chapter 3.

Definitions

The following is a list of terms used as part of this study:

Job satisfaction: The emotional state that results from positive experiences in the workplace (Zhai et al., 2013).

Lecture-based learning: An approach to instruction predicated on more passive learning where students are taught through observation and didactic lectures (Li et al., 2013).

Problem-based learning (PBL): A method of instruction where learning is based on problem solving real-world scenarios to assist students in acquiring contextual work-related knowledge (Day & Tytler, 2012).

Personality trait: A characteristic of an individual's personality used to predict and explain behavior (Hogan & Chamorro-Premuzic, 2015).

Self-directed learning: An approach to learning that stresses the needs of learners on an individual level by permitting them to attain relevant work-related knowledge and skills (Joo et al., 2013).

Assumptions, Scope, and Delimitations

Vygotsky's ZPD theory implied an individualistic approach to learning that may be influenced by personality traits (Armstrong, 2015; Fernández et al., 2015; van Compernolle & Zhang, 2014; Vygotsky, 1980). It is assumed that various factors play a role in job satisfaction levels. While numerous researchers have addressed the relationship between learning and personality on job satisfaction, to date, none has looked at all the variables proposed in the current study together or in forensic psychology professionals. Anyone under the age of 18 was excluded from this study. Only U.S. practitioners were included in the study.

As this study targeted forensic psychology professionals, the results of this study are not generalizable beyond the target population. However, it is assumed that the study population was representative of forensic psychology professionals. This was an important assumption because a main tenet of this study was the unique nature of forensic

psychology and its practitioners. It was also assumed that survey respondents would provide honest responses to survey questions.

Limitations

The study results may be limited because the proposed study is survey-based and relies on participants self-reporting. The findings may be inaccurate if respondents do not honestly respond to survey questions. Additionally, previous researchers have observed a difference between the genders regarding the degree of reported job satisfaction (Hoekstra, 2014; Spurk & Abele, 2011). It was assumed both male and female respondents would participate in the survey. To recruit adequate numbers of men and women, both genders were invited to participate in the survey. Inadequate numbers of either male or female participants would limit the conclusions that may be drawn from gender data.

Significance

A lack of proper graduate-level instruction may lead to lower levels of job satisfaction. However, training may not influence satisfaction in isolation. Personality is a strong indicator for job satisfaction. Positive personality traits are typically found in high-performing, outgoing individuals. Negative traits are typically found in underperforming employees and are deterrents to satisfaction in the workplace. For example, neuroticism is often negatively associated with career success as the characteristics associated with this personality type inhibit job performance and, ultimately, job satisfaction (Berry, Kim, Wang, Thompson, & Mobley, 2013; Hogan & Chamorro-Premuzic, 2015).

In order to appreciate which aspects may contribute to job satisfaction in forensic psychology, additional data pertaining to the relationship between personality and learning models is needed. A more comprehensive understanding of the correlation between learning models, personality, and job satisfaction can assist in career planning (Lounsbury et al., 2014; Shaffer & Postlethwaite, 2013; Uppal, Mishra, & Vohra, 2014). Knowing which careers may best suit an individual based on personality traits promotes a more personalized approach to job selection. Furthermore, a more tailored approach to training that capitalizes on students' personality strengths may help direct them into the most appropriate field. The relationship between personality, stress, and job satisfaction is often addressed in industrial and organizational psychology (Templer, 2012). Little data exists addressing the interaction between learning and both personality and job satisfaction in forensic psychology.

Unlike previous studies that have not incorporated learning models, in this study, I examined the influence of personality on learning and its impact on job satisfaction in forensic psychology professionals. Additionally, it is unclear what role learning models and personality play in job satisfaction. Finding a career that best reflects a forensic psychology professional's strengths may increase job satisfaction. Forensic psychology promotes social change through victim advocacy, counseling, research, and assessment. As the profession moves forward, changes and improvements must be internally driven. Implications for social change include potential behavior changes that may result from awareness of how personality influences career choice. Future forensic psychologists who, through awareness of their personality type, may be better informed about what

career to pursue, more satisfied in their careers, and ultimately better practitioners of the profession.

Summary

Forensic psychology requires specialized training. The profession may benefit from multidimensional instruction that can assist in the development of well-trained practitioners and ultimately lead to more satisfied forensic professionals. Understanding how learning model and personality relate may provide insight into which factors lead to more satisfied practitioners.

In Chapter 1, I introduced relevant research and theories. ZPD theory and career choice theory will form the theoretical framework for this study. I provided research questions and hypotheses and defined key terms. Previous scholars have focused on organizational and situational factors in job satisfaction research, rather than learning and personality. In this study, I examined the relationship between the latter. A better understanding of how personality and job satisfaction are interrelated in forensic psychology may shed light on predictors of vocational choices.

Chapter 2 includes a detailed overview and discussion of existing literature. Specific findings about how personality affects job satisfaction and the benefits of knowing how personality influences job satisfaction are presented. Vygotsky's ZPD theory is the theoretical framework for this research, and it will be presented in conjunction with a discussion of how students learn. Additionally, an overview of learning models and personality traits, as well as an explanation of how these elements may influence job satisfaction in forensic psychology professionals will be presented.

Chapter 2: Literature Review

Introduction

The purpose of this study was to examine two learning models and identify the influence of personality on job satisfaction levels in forensic psychology professionals. The lecture-based approach is predicated on more passive learning, where students are taught through observation. Many disciplines have adopted a traditional learning model, which emphasizes lectures and readings. Conversely, student-centered approaches, such as PBL, are predicated on students' involvement, abilities, and experiences and promote the development of critical thinking and problem-solving skills. Such an approach ensures that psychology students are equipped to practice (Dunsmuir & Frederickson, 2014; Karantzas et al., 2013). PBL was developed for medical students and focuses on teaching students how to overcome problems they may encounter in clinical practice and how to identify their own learning needs (Li et al., 2013; O'Connor & Carr, 2012; Shin & Kim, 2013).

Another element that should be considered when determining the appropriateness of learning models is the impact of an individual's personality. Learners' personalities may play a role in the style of instruction they prefer (Papinczak, 2012). In the PBL model, students acquire beneficial characteristics such as leadership and independent thinking, which are difficult to teach in a static, lecture-based classroom environment (Li et al., 2013; Shin & Kim, 2013). The PBL model has been shown to promote a leadership personality where open-mindedness, communication, lifelong learning, fact prioritization, and analysis are encouraged (Gould et al., 2015). Thus, personality is a valuable element

to consider when determining the appropriate learning model to implement. Personality not only impacts temperament, but also an individual's preferences related to salary, career goals, and overall job satisfaction (Gould et al., 2015; Papinczak, 2012).

Few researchers have addressed the most appropriate training model or learning platform for various personality traits, and no existing data is targeted to forensic psychologists in the United States (Azer et al., 2012; Day & Tytler, 2012; Hogan & Chamorro-Premuzic, 2015; Ngidi, 2013; Redshaw & Frampton, 2014; Xian & Madhavan, 2013). Unlike previous studies in which researchers did not incorporate learning models, this study presents a more comprehensive view of the influence of personality in learning and its impact on job satisfaction in forensic psychology professionals. The purpose of this literature review was to (a) describe how students learn, (b) present the impact of personality on learning and job satisfaction, and (c) identify the gap in existing research. This review of extant literature begins with an overview of Vygotsky's ZPD theory and follows with a discussion of learning models, personality traits, and how these elements may influence job satisfaction in forensic psychology professionals.

Literature Search Strategy

The various keyword searches I used to identify relevant peer-reviewed sources in the last 5 years for inclusion in this literature review are presented here. Search topics included *learning, personality, five-factor model, learning and success, problem-based learning, intrinsic success factors, extrinsic success factors, learning theory, training in forensic psychology, job satisfaction*, and *zone of proximal development*. This literature

review was based on primary research articles gathered from peer-reviewed journals, scholarly journals, and other reputable sources. Acceptable databases included: (a) EBSCOhost, (b) PubMed, (c) Walden University Library, (d) PsychINFO, and (e) Google Scholar. Literature searches that focused on forensic psychologists and used the keywords *personality, job satisfaction, PBL, learning model,* and *training model* yielded no results. The lack of existing research represents a gap in the current literature. To address the paucity of research investigating the relationship between training and job satisfaction, specifically in U.S. forensic psychology professionals, the relationship between these constructs was examined to provide valuable data pertaining to the characteristics that contribute to the development of well-trained practitioners and satisfied forensic psychology professionals.

Theoretical Foundation

Historical research into learning was typically conducted on children and tied to developmental stages and understanding. More specifically, foundational research was focused on teaching those who were maturing, rather than on pedagogy geared toward prompting more advanced, higher-level intellectual development (Case, 1993; Zaretskii, 2009). Vygotsky's ZPD theory (1978) differed from this trend and, for the first time, incorporated pedagogy by not only what children were able to do on their own, but also what they could accomplish through collaborative learning with adult assistance. At its core, ZPD is based on cooperation where self-regulated learning leads to intellectual development beyond what the learner can accomplish without assistance (Obukhova & Korepanova, 2009; Poehner, 2012). This component of the theory can be applied to

collaborative learning in adult populations and is the basis for PBL (Zaretskii, 2009). Vygotsky posited that both personality and mental development stemmed from the same source (Zaretskii, 2009).

ZPD is a dynamic classical theory that has influenced others to explore how individuals learn, the impact of learning, and pedagogy. Furthermore, ZPD has been used as the foundation of current progressive education systems, including PBL. For example, ZPD promotes higher levels of learning by including points of reference for the learner rather than memorized facts, thus encouraging critical thinking. In turn, the learner can successfully perform new actions and acquire new knowledge, skills, and abilities (Obukhova & Korepanova, 2009). Vygotsky's ZPD also noted individual factors, such as personality and aptitude, as influential in mental development. ZPD is used to study individual differences as well as higher level of mental functioning (Obukhova & Korepanova, 2009).

In the last 50 years, psychology has seen the emergence of many new subspecialties (Barlow, 2012). Forensic psychology is a distinct discipline within psychology that requires specialized training that combines legal constructs with the psychological assessment skills necessary to practice in the profession. There is consensus among forensic psychology professionals that, as with any emerging profession, the discipline struggles with legitimacy and can be improved with quality training and practice (Hamden, 2011). However, there is no clear consensus on how best to achieve this legitimacy or where to begin.

Literature Review

In Australia, before practicing, all forensic psychology students must learn how to conduct forensic assessments and participate in a clinical practicum (Day & Tytler, 2012). This approach requires a more hands-on, interactive method than is required in the United States, where instruction is traditionally lecture-based. Day and Tytler (2012) noted that students who are well-trained and exposed to activities they would encounter in the profession are more likely to be successful practitioners. Although their research provided an international perspective (Day & Tytler, 2012), the recommendations, which may be applicable, are not currently being enacted in the U.S.

Dunsmuir and Frederickson (2014) and Sebastian (2012) also focused their work on international forensic psychiatrists. They highlighted that, although forensic psychiatric training is competency based, there are differences in this training in the United Kingdom. Specifically, they highlighted PBL in the medical discipline, where its use is well-documented. Moreover, its usage is not as extensive in nonhealth-related disciplines, such as forensic psychology.

In this study, I investigated whether the lack of training in forensic psychology could be addressed using the PBL model and whether PBL has the potential to be paradigm-shifting for forensic psychology pedagogy. The goal of the PBL approach is to direct students to focus on their own intrinsic motivations. More specifically, the students' own sense of satisfaction from solving the problem despite its challenges, keeps them engaged in learning (Hmelo-Silver, 2004).

How Students Learn

In a collaborative learning environment, students learn by identifying any relevant issues related to the problem under study and gather the appropriate resources to develop strategies to solve the problem (Karantzas et al., 2013). PBL promotes the retention of long-term memory and is best implemented in a small, collaborative group setting to promote a student's own self-study (Schmidt et al., 2011). In addition to a primary focus on medical professionals, the initial development of PBL was geared toward mature learners. Learning is cumulative, and students learn by building on previous knowledge while incorporating and synthesizing new information (Schmidt et al., 2011). For PBL to be successful, students must take responsibility for setting goals and maintaining motivation until the problem is solved, which contrasts with the more familiar lecture-based model that stresses passive learning (English & Kitsantas, 2013).

Learning Models

Numerous training modalities for forensic professionals exist, including the traditional lecture-based models and the more hands-on, skill-building PBL approach. The lecture-based approach stresses passive learning. In contrast, the PBL model is an innovative training approach that supplies relevant knowledge and promotes the critical thinking and reasoning skills needed for practice by encouraging lifelong learning and skill building (Gould et al., 2015). Critical thinking and problem-solving skills have been emphasized in the nursing and medical professions for decades (Chan, 2013). Many disciplines encourage a traditional learning model that emphasizes reading assignments and lectures. PBL programs are tailored toward students' involvement, abilities, and

experiences that promote the development of critical thinking skills. This ensures psychology students are best equipped to practice (Dunsmuir & Frederickson, 2014; Karantzas et al., 2013).

PBL is not as widely practiced as the traditional lecture-based approach, but it does promote a deeper understanding of the material and higher levels of student engagement (Azer et al., 2012; Westhues et al., 2014; Wu et al., 2013). PBL is a form of cognitive constructivist learning (Rotgans & Schmidt, 2011). The cognitive constructivist approach to learning is an active model where students construct knowledge from previous experiences, and new knowledge is acquired by completing an action. In PBL, an instructor guides small groups of students to discuss a specific problem and arrive at a solution. Students are accountable for their own learning goals and ultimately self-direct their learning (Rotgans & Schmidt, 2011).

PBL was developed at McMaster University Medical School more than four decades ago. It is a comprehensive learning and training approach that has been incorporated into different disciplines at numerous international institutions (Baroffio et al., 2013; Bate & Taylor, 2013; Dunsmuir & Frederickson, 2014; Redshaw & Frampton, 2014; Westhues et al., 2014). The PBL model is student-focused and iterative, thus resulting in learning tailored to the individual. Forensic programs that incorporate PBL may prepare learners for what they encounter in practice and assist them in refining their critical thinking abilities by providing comprehensive real-world examples. It not only teaches effective collaboration skills, but also the critical thinking and decision-making skills necessary for effective problem solving, which is lacking in other approaches (Kim

& Jang, 2015). This paradigm is particularly relevant to tech-savvy 21st-century learners (West et al., 2013). The PBL approach capitalizes on a learner's need for engagement and interaction. Modern, tech-savvy learners benefit from the peer-to-peer interaction offered in the PBL approach (Kim & Jang, 2015).

Historically, nursing education in Australia was established using an apprenticeship model (Kent-Wilkinson, 2011). New nurses learned relative skills and abilities on the job and through sharing knowledge among themselves and with more experienced nurses. Chan (2013) conducted an exploratory study comprised of several semistructured focus groups investigating student attitudes toward creativity and critical thinking in both PBL and traditional learning groups. PBL significantly increased the ability of students to solve problems and think critically (Chan, 2013). Chan noted that the ability to think critically is imperative for competence in a particular area. For example, PBL is popular in nursing and medical instruction because it promotes long-term memory and the ability to apply critical thinking to various problems and scenarios (Chan, 2013).

According to Tytler (2012) and Bate and Taylor (2013), the PBL approach is a proven method in successful medical education. PBL has beneficial aspects, such as critical thinking, teamwork, and learning motivation, compared to the more traditional lecture-based approaches. Collaboration, self-direction, constructive methodologies, and contextual relevance are the four key principles integral to the successful implementation of PBL (De Jong et al., 2013). Shin and Kim (2013) found that PBL was positively

correlated to increased problem-solving skills when students were taught how to learn in the patient care environment, similar to what is seen by forensic psychology clinicians.

According to Hmelo-Silver (2004), PBL has long supported and embraced experience-based education. Psychology researchers studying the theory behind learning have suggested that learning through experience promotes the ability to learn new content and develops critical strategies through the juxtaposition of complex real-world problems and the academic environment (Hmelo-Silver, 2004). The PBL methodology may provide students with the opportunity to develop flexible cognitive skills and the abilities to promote lifelong learning. A distinct aspect of the PBL experience is that students work their way through complex problems that have multiple multidisciplinary correct answers (Hmelo-Silver, 2004). This requires students to draw from prior experiences and knowledge; thus, the students are directing their own learning.

Proponents of the traditional approach argue that it has been successfully tried and tested in many disciplines and thus is a better approach than PBL (LaDuke et al., 2012; Najdowski et al., 2015). This comparison is predicated on the belief that the traditional lecture-based approach is more broadly applicable. However, Westhues et al. (2014) and Wu et al. (2013) refuted the argument some authors have made implying that PBL students are not as well-trained as those who are instructed using a traditional model. Advocates for PBL view its more modern, self-directed aspects as the best method for learning and instruction because of the student-driven nature (Wu et al., 2013). As Kinchin, Cabot, and Hay (2008) stated, an expert practitioner must possess significant practical experience; the skills promoted by the PBL methodology may provide student

practitioners with the ability to develop this expertise. PBL provides individuals with the ability to reason and teaches them to selectively ignore information that is not relevant to solving the problem at hand (Kinchin et al., 2008).

Critical thinking is essential for solving problems (Olivares, Saiz, & Rivas, 2013). The major criticism of the PBL approach is the efficacy of the examples used to create cases. Students must be challenged with real-world examples to ensure that the critical thinking skills gained in the classroom can be translated and applied in practice. Where PBL falls short is in the creation of concrete examples that can be used to promote the critical thinking skills that PBL has been shown to foster in students. Azer et al. (2012) assessed the best method to incorporate quality scenarios in PBL programs. They asserted that quality scenarios should incorporate complex aspects from different disciplines as opposed to a superficial one-dimensional approach (Azer et al., 2012).

Many current learning theories fail to address learner autonomy. In autonomous learning, the typical approach is critical thinking rather than instructor-driven learning. Nonetheless, more traditional models often stress learning by rote. Traditional models are geared toward repetition and memorization rather than true critical thinking (Poehner, 2012). Whelan, Mansour, Farmer, and Yung (2007) investigated how changing to a PBL curriculum impacted students. In their survey-based study, they gathered pharmacy students' and instructors' opinions pertaining to preparation for future practice. Three model cohorts were assessed: Students were enrolled in PBL curricula, traditional curricula, or a hybrid of the two. The results indicated that students who graduated from

the PBL curriculum believed they were significantly more prepared in relevant competencies than students in the other two cohorts (Whelan et al., 2007).

PBL stimulates constructive collaboration between the learner and the instructor. However, when students are not engaged, PBL will not be successful, which illustrates the importance of the student in this active learning process (Papinczak, 2012; Zaretskii, 2009). Hence, students' personalities may play an active role in the style of instruction that best suits them. This study addressed the need identified in the literature to assess the use of PBL in more diverse populations with regards to gender (West et al., 2013).

Expert witness testimony is unique to the profession of forensic psychology and, as such, sets it apart from other specialties in psychology (Sebastian, 2012). Often hands-on experience in hospitals, prisons, and community settings provides practical applications and interactions to best achieve competency in key knowledge areas (Sebastian, 2012). With respect to forensic instruction, the diverse educational and professional backgrounds typical of forensic psychology students result in a population with varying learning needs that PBL may address (Sebastian, 2012). Thus, PBL may promote greater job satisfaction by meeting individual learning needs.

Barlow (2012) found that few graduate-level educational programs teach the necessary competencies required for professional psychology specializations. The forensic psychology specialization was the focus of this study and was examined to determine which training approach yields greater job satisfaction. Difficulties in practice may include an inability to complete basic forensic assessments or to make critical decisions required to successfully practice in the forensic psychology profession. The

impact of PBL on learning outcomes could affect how well-equipped learners are for their chosen careers, ultimately affecting their job satisfaction. The effects of these learning models in forensic psychology practice and their relationship to the learners' personality and job satisfaction were examined in this research.

Baroffio et al., (2013), Pecore (2013), and Westhues et al., (2014) examined variations in constructivist learning approaches and their impact on professional practice. They noted that not all students easily embrace the self-directed learning typically associated with PBL. This may be attributed to the students' preferences and personalities, as they may prefer a more superficial, less rigorous approach to learning. Learning and personality are as dynamic and exclusive as the individual. As a result of personality differences, each person may approach a topic or a problem differently and may prefer one type of training over another; thus, simply assessing one training modality or the other is not adequate for understanding how satisfied practitioners will be in their chosen professions. There is also little consensus among scholars regarding which components represent core elements in the development of forensic psychology instructional programs, training goals, and curricula (DeMatteo, Marczyk, Krauss, & Burl, 2009).

Training in Forensic Psychology

Appropriate training is necessary to make proper judgments in assessments and treatment recommendations (Helmus, Babchishin, Camilleri, & Oliver, 2011). In the mid-1990s, forensic psychology was a new and emerging specialty in Canada. The growing interest in forensic psychology greatly outpaced available training programs, particularly

at the graduate level. In 1995, Simourd and Wormith surveyed the forensic psychology training available in Canadian universities to assess the breadth and quality of available programs. They found that expansion of the criminal justice profession in Canada would result in a greater need for highly trained professionals (Helmus et al., 2011).

Helmus et al. (2011) sought to update Simourd and Wormith's (1995) landmark study. Their findings indicated a clear qualification difference in those with extensive comprehensive training versus cursory forensic training. Their results showed that most of the graduate students surveyed had not received comprehensive forensic psychology instruction from their universities, which called into question the quality and benefits of the various types of forensic training that are not tailored to the specialty. While the authors provided updated data on the original Simourd and Wormith study, they failed to make a clear distinction between self-directed programs modeled on PBL. The focus of this study was to examine both learning models and how satisfied practitioners are with their careers.

Learning and Job Satisfaction

Several factors contribute to higher levels of job satisfaction among employees. Spence Laschinger (2012) identified several elements that act as significant predictors of job satisfaction. At hospitals, extended orientation and training programs that went beyond standard training modalities typically provided assisted new graduates in adjusting to their new roles as full-time practitioners, thereby reducing turnover. Extended orientations were defined as programs spanning a full year that improve clinical knowledge and technical ability, and ultimately increase their comfort level in their new

role. Employees who identify themselves as receiving adequate training are often more satisfied in their careers (Tanwar & Prasad, 2016; Tschopp, Grote, & Gerber, 2013).

According to Joo, Park, and Oh (2013), opportunities for career development and self-directed learning may be components of ultimate career satisfaction. They identified learning goals as influenced by personality. Individuals' personality characteristics may directly or indirectly influence how satisfied they may be in their careers (Joo et al., 2013). Joo et al. (2013) examined the relationship between learning goal orientation and career satisfaction in South Korean culture. The authors divided career satisfaction into two categories: (a) objective career accomplishments, and (b) subjective career success, where the former pertains to promotions and increased salary and the latter pertains to career accomplishments (Joo et al., 2013). Joo et al. linked satisfaction to individual personality characteristics. With regards to learning goal orientation, they posited that individuals with adaptive learning abilities were most likely to experience positive professional outcomes. These individuals were more likely to see obstacles as cues to analyze problems in new ways and overcome those obstacles. Joo et al. found that individuals who were more learning-goal oriented were also more aware of their developmental needs and tended to be self-directed learners. Ultimately, those with higher levels of developmental needs and awareness were more satisfied in their careers (Joo et al., 2013).

Najdowski et al. (2015) conducted an extensive literature review assessing the current state of teaching and training in law and forensic psychology. A key finding in their literature review was the importance of active learning techniques. In-class exercises

and demonstrations were noted as most beneficial because they increased student motivation and information retention. Furthermore, the author noted active learning techniques such as PBL encourage greater critical thinking, and more profound learning (Najdowski et al., 2015). They noted that the availability of training opportunities is outpaced by the demand for specialized forensic training. Their findings support the need for additional research to investigate which factors lead to more satisfied practitioners. Existing gaps in the literature were addressed by examining the types of learning models used to teach forensic psychology practitioners and the subsequent relationship to personality and job satisfaction.

Spence Laschinger's (2012) study addressed differences between first- and second-year nursing graduates and found that the quality of orientation programs was also linked to the graduates' job satisfaction. Spence Laschinger noted higher levels of cynicism in second-year nursing professionals and noted that this difference may indicate an element other than training satisfaction, thus suggesting that training alone may not be a good predictor of job satisfaction. Ultimately, graduates who believed their training orientation met their needs were less likely to want to leave the profession because they were more satisfied in their jobs (Tschopp et al., 2013). These findings lend further credibility to existing literature that recommends that new graduates receive strong organizational and professional orientation (Spence Laschinger, 2012). However, Spence Laschinger's research lacks a specific focus on training and satisfaction. She primarily focused on situational factors affecting the respondents at a particular moment rather than on more far-reaching and stable factors such as personality. The results of this study

added to the research by presenting information on not only personality traits, but also how these traits relate to job satisfaction in a group of practicing forensic psychology professionals.

In the forensic context, specialized training is a necessity for competent practice in the profession. Forensic neuropsychology is an emergent sub-specialty within the profession. There are numerous sources for professional training and instruction; however, the type and amount of specialized training was identified as most important in forensic instruction (LaDuke et al., 2012). Typically, specialized forensic instruction is obtained through continuing education (CE), post-graduate workshops, internships, and fellowships. Eighty-five percent of specialized forensic instruction for forensic neuropsychologists is achieved through CE credits (LaDuke et al., 2012).

LaDuke, et al. (2012) studied training types and preferences as a subset of neuropsychology. A key finding of their study was that the more recent the graduates were, the more likely they were to seek out additional training early in their careers (LaDuke et al., 2012). This finding illustrates that a disconnect exists in what students learn compared to what they need to function adequately within a given profession. While the utilization of PBL in the medical field is well documented and researched, there is a paucity of literature regarding the use of PBL in other professions such as forensic psychology. Moreover, this lack of data indicates that research is still needed to determine which influencers promote greater job satisfaction in forensic psychology professionals. The current gap in the literature was filled by investigating how satisfied forensic psychology professionals are in their jobs.

Personality and Job Satisfaction

Approximately one-third of all U.S.-based organizations incorporate some type of personality testing in the hiring process (Berry et al., 2013). Personality testing is used extensively in career counseling and has been shown to be beneficial in assisting individuals in career planning (Ball, Eley, Desbrow, Lee, & Ferguson, 2015; Gati & Levin, 2014; Martincin & Stead, 2015; Wiernik, 2016). An individual's skills, personality traits, and abilities are important factors in career planning and counseling as they influence professional goals. The ability to exercise introspection in the career planning may be very beneficial in ensuring prospective employees select careers that complement innate personality traits and preferences. For example, employees in the healthcare profession typically exhibit more cooperative and highly sociable personality traits (Ball et al., 2015). Ultimately, employees who have personality traits that better align with their careers may be more satisfied practitioners.

The five-factor model personality factors (openness, conscientiousness, extraversion, agreeableness, and neuroticism) and Holland's personality typologies (RIASEC), when combined with PBL or traditional training modalities, may be valuable predictors of job satisfaction in forensic psychology. Individuals who are aware of their personality type may be better informed regarding what career to pursue. Characteristics such as extraversion, conscientiousness, and agreeableness are positively correlated with higher levels of job satisfaction (Hogan & Chamorro-Premuzic, 2015). These positively correlated personality characteristics may have far-reaching benefits and may promote higher levels of job satisfaction, subsequently reducing turnover among employees.

Uppal, Mishra, and Vohra (2014) assessed factors promoting career success and intrinsic job satisfaction. Individuals with the highest level of openness are more tolerant and adaptable in difficult situations and more likely to find inventive resolutions. Furthermore, individuals who rate highest on the openness scale are more apt to deal with job-related stress in positive and constructive ways (Uppal et al., 2014). Those who scored highest on contentiousness are noted as being organized, self-disciplined, and dutiful. Openness, agreeableness, and contentiousness were indicative of higher levels of job satisfaction (Uppal et al., 2014).

Extraverted individuals reported the highest level of job satisfaction. Uppal et al., (2014) noted an inverse relationship between neuroticism and extroversion with respect to job satisfaction. Higher levels of neuroticism resulted in lower levels of job satisfaction. Their findings indicate that job satisfaction may be altered by personality traits. Thus, it may be possible that other factors, such as one's chosen profession, play a role in personality development and job satisfaction. Other potential predictors for job satisfaction include sociodemographic characteristics such as gender and age. Many factors can influence an individual's career experiences (Berry et al., 2013; Maggiori et al., 2016; Ngidi, 2013; Saksvik & Hetland, 2011). For example, males and females often experience the workplace differently. These differences may be attributed to the influence of gender roles in the workplace and may impact the degree to which an employee is satisfied in the workplace (Hoekstra, 2014; Tanwar & Prasad, 2016; Wiernik, 2016).

Job satisfaction is a valuable indicator of career retention (Minbashian, Earl, & Bright, 2013). Thus, factors promoting job satisfaction in forensic psychology

professionals may serve to keep the best-qualified and best-suited individuals in the profession. A better understanding of the relationship between learning models, personality, and job satisfaction can assist in career planning (Lounsbury et al., 2014; Shaffer & Postlethwaite, 2013; Uppal et al., 2014). For the purposes of this study, job satisfaction was used to measure the impact of one learning model in comparison to another. In previous studies, researchers did not address whether one model produces more satisfied forensic psychology professionals and the impact of their personality.

Holland's career choice theory speaks to vocational personalities. Holland posited that individuals select careers that best suit their personalities and allow them to flourish. The degree to which the personality and vocation match can predict how satisfied individuals will be with their jobs, and how well they will perform at those jobs (Lounsbury et al., 2014). A potential outcome of this research is a better understanding of the relationship between learning models, personality traits, and job satisfaction in forensic psychology, speaking to elements not currently addressed by the ZPD theory that are relevant in understanding a learner's distinctive style.

How well the individual fits the environment is as important as how well the individual fits their chosen career. Hardin and Donaldson (2014) examined the role of fit in job satisfaction. Their findings indicated that person-job fit is as particular as the individual and is a significant predictor of job satisfaction worth considering. Both career personalities and needs must be correlated with the chosen profession for individuals to have higher levels of job satisfaction. This illustrates an interaction between personalities, values, and needs (Hardin & Donaldson, 2014). Fit may be best described as either how

well the person matches his or her environment or how well the environment matches that person. The instrumentation theory posits that personality can influence actions that affect subjective well-being and job satisfaction (Zhai et al., 2013).

Researchers argue that personality is relatively stable with brain maturation, or that changes in brain chemistry or structures are the only reasons for change (Ngidi, 2013; Sutin, Costa, Miech, & Eaton, 2009). Spurk and Abele (2011) investigated the relationship between the big five personality traits and salary, as a surrogate for job satisfaction. Their findings indicated a relationship between salary and all of the big five personality traits except for openness. A key characteristic in this study was that the authors controlled for gender. Gender was examined to determine whether it impacts the relationship between training and personality with respect to job satisfaction in the forensic psychology practitioner population.

Uppal et al., (2014) assessed factors promoting career success and intrinsic job satisfaction. They found that individuals with the highest levels of openness were more tolerant and adaptable in difficult situations and were more likely to find inventive resolutions. Individuals who rate highest on the openness scale are more apt to deal with job-related stress in positive and constructive ways (Uppal et al., 2014). Extraverted individuals tended to report the highest levels of job satisfaction. Saksvik and Hetland (2011) and Uppal et al. (2014) stated that individuals scoring high on extraversion scales are more satisfied professionally. In contrast, an inverse relationship between neuroticism and extroversion with regards to job satisfaction was documented. Individuals with greater levels of neuroticism were less satisfied with their jobs.

Zhai et al., (2013) studied the influences of the big five personality traits on subjective well-being and job satisfaction in a collectivist Asian society. Their findings indicate that individuals with positive personality traits such as openness and agreeableness tend to exhibit good-natured, cooperative, and supportive behaviors. However, they were only weak predictors of job satisfaction in the Chinese context. They noted the relationship between well-being and job satisfaction was unclear in their target population. These findings illustrate the difficulties of generalizing data and highlight the importance of addressing specific populations.

Positive personality traits are often associated with higher levels of satisfaction in the workplace (Saksvik & Hetland, 2011; Templer, 2012; Zhai et al., 2013). Saksvik and Hetland (2011) discussed the relationship between personality and stress as measured by job satisfaction ratings. They noted that neuroticism is typically found in individuals with the lowest levels of job satisfaction. Their findings demonstrated the relationship between personality and stress (job satisfaction), as well as how individual differences influence job satisfaction. For example, individuals scoring high on extraversion tended to be more satisfied professionally and were best served in careers with the highest levels of social interaction.

Similarly, Elliott and Daley (2013) studied stress levels and the influence of personality. Unlike Saksvik and Hetland (2011), who focused on the relationship between stress and personality across various vocations as measured by job satisfaction ratings, Elliott and Daley (2013) specifically focused on FHCPs and identified specific gender and age implications in their research. They noted that women were more satisfied in the

profession and often exhibited more beneficial coping mechanisms when compared to their male counterparts. Furthermore, younger FHCPs often employed more positive coping strategies and indicated greater job satisfaction (Elliott & Daley, 2013). FHCPs are often exposed to higher levels of occupational stress, as compared to other professions, because they are continually exposed to distressing social issues. Occupational stress and its relationship to job satisfaction has been assessed in many populations; however, the degree to which personality impacts job satisfaction in FHCPs is less understood (Elliott & Daley, 2013).

Gender and Job Satisfaction

Extensive research has been conducted to assess the relationship between gender and job satisfaction (Elliott & Daley, 2013; Hoekstra, 2014; Singhapakdi et al., 2014; Spurk & Abele, 2011; Tanwar & Prasad, 2016; Wiernik, 2016). Gender and its impact on job satisfaction is one of the most researched interactions. Despite great efforts in identifying and addressing gender equality issues in the past few decades, gender disparity still exists in the workplace (Janssen & Backes-Gellner, 2016). Women are often more satisfied in their careers than men (Janssen & Backes-Gellner, 2016). However, satisfaction levels decrease when women are in stereotypically male roles in the workplace. When controlling for salary, women are less satisfied than their male counterparts in traditionally male careers (Janssen & Backes-Gellner, 2016).

Magee (2015) spoke to the levels of job satisfaction that are experienced between the genders. Although women should seemingly experience lower levels of satisfaction, they do not. Male employees receive higher salaries and spend less time in lower-level

positions, but they do not necessarily experience greater job satisfaction (Magee, 2015). The degree of job satisfaction is often higher in women despite extended periods of time in entry-level positions and lower salaries (Magee, 2015). This phenomenon has been titled the "gender paradox" in research (Magee, 2015; Singhapakdi et al., 2014). This paradox does not extend to professions considered to be more masculine. In a collectivist Asian society, female managers in stereotypically male positions noted lower levels of job satisfaction than male managers (Singhapakdi et al., 2014).

Janssen and Backes-Gellner (2016) researched how gender stereotypes in the workplace impact job satisfaction where women are in stereotypically male jobs. The authors noted that women will trade more lucrative careers, and the satisfaction higher income brings, for careers that are considered stereotypically male. In the workforce, men often move up the ladder faster that women. This difference in career trajectory is often attributed to stereotypical male-female gender roles where women are the primary caregivers in the family. In this caregiver role, greater emphasis is placed on work-life balance rather than career advancement (Magee, 2015; Spurk & Abele, 2011). As the traditional primary caregivers, women will prioritize family over higher salaries. It is not known whether forensic psychology is considered stereotypically male or female, but gender is an important element to consider as it strongly influences job satisfaction.

Age and Job Satisfaction

Researchers have noted the age of the individual as an important factor in job satisfaction (Atefi, Abdullah, Wong, & Mazlom, 2015; Li, Stanek, Zhang, Ones, & McGue; 2016; Magee, 2015). As workers age, their job satisfaction tends to decrease.

This decrease was noted irrespective of profession (Atefi et al., 2015). Magee (2015) examined the impact of both gender and age on job satisfaction on Canadian working professionals and found that age was inversely related to job satisfaction. The author noted the younger the worker, the higher the degree of job satisfaction.

Similarly, Li et al. (2016) found that younger employees were 30% more satisfied with their jobs than older workers. The authors attributed this difference to the influence of genetics, environmental factors, and the lack of work-related interpersonal conflicts. Younger employees with less exposure in the workforce have not been exposed to the higher levels of job-related or interpersonal stress typically seen in older employees with longer work histories. The authors' findings were based on the existing Minnesota Twin and Family Study data set. Although use of the existing data set provided readily accessible date, the authors were limited to the study population recruited in the Minnesota Twin and Family Study. Participants did not represent any specific career specialization. Actively practicing forensic psychology professionals are the focus of this study.

Year of Experience and Job Satisfaction

Spence Laschinger (2012) noted job satisfaction is a strong indicator of job retention. She sought to examine effective predictors of job and career satisfaction in professional nurses and focused on newly graduated, registered Canadian nurses with two years or less of experience. While new graduates are often an easy population to study because of their accessibility, they do not have enough exposure to on the job experiences that may affect satisfaction (Spence Laschinger, 2012). In an attempt to more accurately

gauge job satisfaction, forensic psychology professionals in various stages of their careers was examined in this research.

Tschopp et al. (2013) noted that as job satisfaction increased, job turnover and dissatisfaction decreased. Although they argued that other factors, such as career orientation, might mitigate overall job satisfaction, neither personality nor instructional training was addressed in their research. They conducted a longitudinal study with highly educated individuals whose ages ranged from 16 to 65. The aim of their study was to assess the impact of career orientation on job turnover and job satisfaction. The research was grounded in career theory and the idea that understanding career orientations and employment relationships would shed light on job satisfaction. Tschopp et al. defined career orientation as the way individuals consider their careers, irrespective of their behaviors in that profession. Ultimately, they found that career orientation can be considered as the central or driving force for career choices, and thus one's chosen career path (Tschopp et al., 2013).

The major limitation of Tschopp et al. (2013) was the measures used to address job satisfaction. They selected a single-item, job satisfaction measure, which severely limited the interpretation and generalization of their findings. Thus, they were unable to adequately link job satisfaction to turnover, as they had hypothesized in their paper. Ultimately, they would have needed more data points for measurement such as those found in a multipoint scale, which was not utilized in the study. Three multipoint instruments: (a) SDS-R, (b) NEO-FFI, (c) MSQ were incorporated to ensure adequate data points are collected.

Personality and Career Choice

Workers in industrialized societies use career as a means to satisfy specific psychological needs such as socialization and achievement, and to assign meaning to their lives (Hogan & Chamorro-Premuzic, 2015). The study of personality and career success incorporates central features of personality research where the goal is to enhance individual and organizational performance. According to Hogan and Chamorro-Premuzic (2015), although research into personality and its relationship to career success has been in high demand since the early 1990s, current literature has been unable to unanimously define the term "personality." This difficulty may be attributed to how each person's distinct personality influences his or her decisions and behaviors. Historically, psychologists did not believe personality measures were truly adequate predictors of career performance. Previous research into personality and career success tended to vary by job, as well as by individual (Hardin & Donaldson, 2014; Hogan & Chamorro-Premuzic, 2015).

Denissen et al. (2014), and Hardin and Donaldson (2014) focused on the application of job characteristics as a driver of personality development, and how individuals fit into their environment. Their findings indicated that individuals tend to be drawn to careers that reinforce their personality traits. More specifically, job seekers appear to find employment that enhances key characteristics in their personalities, resulting in greater satisfaction. The authors of these studies highlighted the importance of personality within career choice, and potentially, job satisfaction. Individuals drawn to forensic psychology and who are satisfied in their careers may possess similar personality

traits and the existence of any relationship to, and what role, if any, training model plays was investigated.

Barrick, Mount, and Li (2013) defined personality as the interplay between thoughts, behaviors, and emotions. They posited that personality is a combination of factors that influence what an individual thinks, prefers, and desires. They proposed a novel theory that they referred to as the integrative theory, where personality traits drive goals and results in patterns of behavior that are specific to the individual (Barrick et al., 2013). When personality traits are in line with one's chosen profession, positive behaviors are enhanced and psychologically, the work is seen as being more meaningful. Research into person-job fit has not adequately conceptualized the true relationship between people and their environments because it typically incorporates divergent characteristics of the individual, rather than any existing similarities.

De Vos, De Clippeleer, and Dewilde (2009) conducted a longitudinal study to determine which behaviors are associated with career success and ultimate satisfaction. They surveyed graduates before graduation and one-year post graduation. Their findings indicated that proactive career behaviors appear to have both mental and behavioral components, illustrating the importance of looking at both objective and subjective career success indicators (De Vos, et al., 2009). Individuals who are later in their careers tend to be less motivated by promotion and monetary incentives (Olson & Shultz, 2013). Instead, they are more interested in meaningful work and seek careers that fulfill this goal. As workers age they are more interested in employment that is consistent with their values, talents, and abilities (Olson & Shultz, 2013).

Gap in Literature

Researchers examining training techniques in forensic psychology have focused on more descriptive and opinion-based approaches. There is little documented research on the use of PBL in forensic psychology training programs (Dunsmuir & Frederickson, 2014). The results of this research may provide insight into a potential approach for improving quality in the profession of forensic psychology and will facilitate this by examining the relationship between learning models, the practitioners' personality traits, and the practitioners' job satisfaction. More specifically, the relationship between traditional training methodology and the PBL approach was compared by examining the five-factor model personality traits as they relate to job satisfaction in forensic psychology.

Job satisfaction is addressed extensively in existing personality literature (Denissen et al., 2014; Hardin & Donaldson, 2014; Hogan & Chamorro-Premuzic, 2015; Templer, 2012; Zhai et al., 2013) and to a lesser degree, in research geared toward various aspects of learning and job satisfaction (Day & Tytler, 2011; Tschopp et al., 2013; Spence Laschinger, 2012). However, the lack of scholarship investigating the role personality and learning models play on job satisfaction represents an area in need of additional research. According to Zurlo, Pes, and Capasso (2016), more multifactor empirical studies that look at combinations of variables affecting job satisfaction are needed. The degree to which multiple factors, personality and training methodology, are related to job satisfaction in forensic psychology were examined in this research.

Historical Perspective

The forensic psychology profession has expanded exponentially within the last 40 years. Since the mid-1970s, discrete knowledge areas ranging from assessments, treatment, legal concepts, and research have emerged (Sebastian, 2012; Varela & Conroy, 2012). Specialty training is a necessity for true competency in the profession (Day & Tytler, 2012). Initially, PBL was used with medical students to assist them with problem-solving skills and to reinforce self-directed learning capabilities (Barrick et al., 2013). PBL is an interactive pedagogy that has now spread to many other disciplines, such as language arts and the biological sciences (Baroffio et al., 2013; Bate & Taylor, 2013; Dunsmuir & Frederickson, 2014; Redshaw & Frampton, 2014; Westhues et al., 2014).

For students to solve problems, they must first take the problem apart and deconstruct it into smaller components (Barrick et al., 2013). Medical schools have been the primary provider of the abundance of PBL research-based evidence, with minimal studies incorporating other academic populations (Hmelo-Silver, 2004). The PBL model is student-focused and iterative, and consequently, the individual governs learning. It not only teaches collaboration skills, but also the critical-thinking and decision-making skills necessary for effective problem solving that is lacking in other approaches (Kim & Jang, 2015; Karantzas et al., 2013). Effective problem-solving skills can be measured based on a student's ability to transfer newly acquired reasoning abilities to new problems (Hmelo-Silver, 2004).

Conclusions

Personality traits are effective indicators of how an individual learner may approach learning new information (Conti & McNeil, 2011). While critical-thinking skills can be taught, individuals may apply the same information differently. Universities and professional organizations consider critical-thinking and problem-solving skills as beneficial attributes (Karantzas et al., 2013). In collaborative learning, students complete assignments that use a more social constructivist perspective where knowledge is acquired through interaction with others, discussions, and completion of open-ended tasks. Their study is part of a very small pool of extant research where the efficacy of programs that enhance student problem-solving and critical-analysis skills was assessed (Karantzas et al., 2013).

Personality traits, gender, and age impact career decision-making, job retention and job satisfaction (Atefi et al., 2015; Ball et al., 2015; Janssen & Backes-Gellner, 2016; Li et al., 2016; Magee, 2015; Martincin & Stead, 2015; Singhapakdi et al., 2014). Personality is often viewed as generally stable over time, only changing due to maturation of the brain or trauma that alters brain chemistry (Ngidi, 2013; Saksvik & Hetland, 2011; Wille et al., 2014). Personality influences an individual's financial goals, career choices, and overall job satisfaction. More specifically, personality traits may influence job-related attitudes and preferences (Barrick et al., 2013; Chiaburu, Oh, Berry, Li, & Gardner, 2011).

In the PBL model, students can acquire beneficial characteristics such as leadership and independent thinking, which are difficult to teach in a static lecture-based

classroom environment. Students utilizing a PBL curriculum are more likely to provide accurate responses with well thought-out and coherent explanations that incorporate relevant scientific concepts, when compared to students in a more traditional program (Hmelo-Silver, 2004). The PBL approach capitalizes on a learner's need for engagement and interaction. Modern, tech-savvy learners benefit from the peer-to-peer interaction offered in the PBL approach (Kim & Jang, 2015). As the forensic psychology profession continues to grow and evolve, more modern learners will enter the profession, requiring new approaches in instruction. The learning process and its outcomes can be influenced by a student's previous education and life experiences (English & Kitsantas, 2013; Schmidt et al., 2011; Sockalingam & Schmidt, 2013). In traditional lecture-based approaches, students often struggle with knowledge retention and skills application (O'Connor & Carr, 2012).

Understanding how an individual is trained and the impact of personality on job satisfaction, pose great benefits for individuals considering a career in the profession. Subsequent analysis assessed the roles of the learning models and personality as effective predictors for forensic psychology job satisfaction, as measured by the degree of career satisfaction. Personality was measured through personality trait profiles.

Assessments on how learning and personality influence job satisfaction have not been conducted extensively (Day & Tytler, 2012). Little research exists regarding how learning is affected by personality, and whether together, learning and personality are unique predictors of job satisfaction in forensic psychology (Bate & Taylor, 2013; Sebastian, 2012; Wille et al., 2014). Moreover, the collection of job satisfaction research

to date has typically focused on organizational and situational factors, rather than learning and personality. The identification of causal paths for personality differences with respect to job satisfaction indicate that thoughts and behaviors influence the career an individual selects (Templer, 2012).

For the purposes of this study, job satisfaction was used to measure the impact of one learning model over another. Previous researchers have not investigated learning model, personality and job satisfaction together. I hypothesize that the type of learning model influences job satisfaction in forensic psychology. More specifically, professionals trained using the PBL approach may be more satisfied because this model may be a more appropriate methodology to teach the abstract reasoning and critical-thinking skills needed for a career in forensic psychology. With regards to job satisfaction, training using a PBL model approach may expose them to the skills required to meet the demands of the profession, and ultimately result in higher degrees of job satisfaction in their careers.

Summary

This literature review illustrated the need for a comprehensive study focusing on forensic psychology professionals. While personality and job satisfaction have been assessed in forensic psychiatrists and forensic neuropsychologists (Chan, 2013; Helmus et al., 2011; LaDuke et al., 2012), no studies have specifically focused on forensic psychology professionals as a group (Najdowski et al., 2015). Furthermore, PBL has been compared to traditional training modalities in educational psychology (Dunsmuir & Frederickson, 2014), graduate students (Bradshaw & Frampton, 2014; English &

Kitsantas, 2013; Hmelo-Silver, 2004; Karantzas et al., 2013; Whelan et al., 2007), forensic nurses (Kent-Wilkinson, 2011), and medical students (Baroffio et al., 2013; Wu et al., 2013); but, there are currently no studies in which researchers investigated the relationship between training and job satisfaction specifically in U.S. forensic psychology professionals. Forensic psychology professionals who are aware of which personality traits are best suited for practice may be more satisfied practitioners. This contributed to social change because students who are better informed about what career path to pursue may be more apt to stay within the profession.

Changes in clinical psychology instruction resulted in the current forensic psychology training methodologies, which illustrates that they were not specifically designed for forensic psychology practice (Day & Tytler, 2012; LaDuke et al., 2012). Comprehensive training programs such as PBL offer students a more realistic picture of what they may experience in practice and assist them in improving their critical-thinking and reasoning skills. The application of PBL in non-medical specializations has recently become a popular topic of research (Xian & Madhavan, 2013).

Unlike the traditional lecture-based approach, using PBL in forensic psychology instruction may target each learner's strengths, improving the psycho-legal reasoning and decision-making skills unique to the profession, and can potentially lead to greater success in practice. The PBL approach is a proven method in successful medical education (Bate & Taylor, 2013; Day & Tytler, 2012). According to Shin and Kim (2013), PBL was designed to improve upon lesson-based teaching theory for medical students. PBL has beneficial aspects such as critical thinking, teamwork, and learning

motivation. They found that PBL was positively correlated to increased problem-solving skills where students are taught how to learn within the patient care environment that is also found in forensic psychology practice.

Chapter 3 provides greater detail about the methodology that will be used to address the lack of existing data. The rationale for this quasi-experimental study will be provided and each independent and dependent variable will be explained in detail. Chapter 3 will also include a discussion of which statistical tests will be used to address the research questions, the reliability of each test, and why they are appropriate for this research. Each instrument to be used in this study will be described and its relevance to this study and the research question will be explained.

Chapter 3: Research Method

Introduction

PBL and lecture-based learning and their relationship to personality and job satisfaction in forensic psychology professionals is the topic of this study. This chapter addresses the study design, variables, research questions and hypotheses, sample size, data collection instruments, analysis, and validity concerns. In Chapter 3, I describe the research methodology used to elucidate the relationship between learning models, personality, and job satisfaction, and the required procedures. In addition to the methodology that will be used in this study, this chapter provides an explanation of inclusion and exclusion criteria and sampling frame.

Research Design and Rationale

This research was a quantitative, survey-based study that examined personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism), Holland's vocational personality types (RIASEC), and learning models (PBL or traditional lecture-based) as predictors of satisfied forensic practitioners. The PBL group was compared to the traditional lecture-based approach group. Subsequent analysis assessed the roles of the learning models and personality as effective predictors of job satisfaction in forensic psychology while controlling for age, gender, and years of experience. The independent variables were used as predictors of the dependent variable; they included learning models, personality type, and sociodemographic factors (age, gender, career descriptors, and years of experience). The dependent variable was job

satisfaction. Age, gender, and years of experience served as covariates in the analysis phase of the study.

Previous researchers have used qualitative interviews and transcript reviews to assess how the PBL construct was applied to their study (Belland et al., 2009; Chan, 2013; Dunsmuir & Frederickson, 2014; English & Kitsantas, 2013; Hmelo-Silver, 2004; Joo et al., 2013; Kent-Wilkinson, 2011; Kinchin et al., 2008; Najdowski et al., 2015; Redshaw & Frampton, 2014; Schmidt et al., 2011; West et al., 2013). The use of a quantitative design for this study provided a cost-effective method to obtain information and added the quantitative data needed to move knowledge forward in this area of research.

Methodology

The target population for this study were practicing U.S. forensic psychologists who are members of either the Society for Police and Criminal Psychology (SPCP), the American Academy of Forensic Sciences (AAFS), or the American Psychological Association (APA), Divisions 18, 39, 41, and 42. Various professional associations and societies were selected for this study to recruit participants from across the profession. Using these groups provided access to a cross-section of forensic psychology professionals. SPCP members include psychologists, psychiatrists, and others working in the criminal justice field. The AAFS is targeted to forensics professionals and consists of different branches, including a section specifically for behavioral sciences. Division 18 of the APA is designated for psychologists in public service. Division 18 is separated into five sections with one devoted to addressing needs in the criminal justice system.

Division 39 of the APA is open to those interested in and practicing psychotherapy and psychoanalysis. Members of this group may work in various locations, including courtrooms. Division 41 is the American Psychology–Law Society interest group of the APA. Its members include students, researchers, and practitioners interested in the connection between psychology and law. Some forensic psychologists are in private practice. Division 42 is for psychologists in independent practice and may include forensic psychology professionals meeting the inclusion criteria for this study. Participants were over the age of 18 and current forensic psychology practitioners. A survey was used to assess personality characteristics, age, gender, years of experience, career descriptors, and learning models on job satisfaction in forensic psychology. Career descriptors included licensure status (licensed or nonlicensed) and degree type (PsyD or PhD). Non-U.S. practitioners were excluded from the sample population. Participants who met the inclusion criteria were recruited from existing AAFS; APA Division 18, 39, 41, and 42; and SPCP email listservs and member rosters.

The sample size for this study was 49 participants. The statistical parameters used to obtain the sample size were a moderate effect size of 0.25, an alpha of 0.05, and power of 0.95 for t-test and ANOVA analyses (Buchner, Faul, & Erdfelder, 2013). The participants for the proposed study were a convenience sample obtained through Survey Monkey. Participants were invited to complete the survey using Survey Monkey because it can generate individual user invitations to ensure privacy and confidentiality. Participation was voluntary. Each respondent received an electronic informed consent document along with a unique password-protected link and could only complete the

survey once. Participants were asked to select the learning model most closely associated with their forensic training. Data from the job satisfaction indices were used to assess differences in job satisfaction between the two learning models. No formal exit procedures were required. The data collected from the surveys were analyzed using the SPSS, Version 23.0.

Instrumentation and Operationalization of Constructs

Questions from several instruments were used to answer the research questions. All questions from the MSQ, SDS-R, and NEO-FFI-3 questions were entered into Survey Monkey to generate a single password-protected survey instrument. The resulting combined instrument consisted of 344 questions, plus eight demographic questions. The complete survey was 352 questions. Data were cleaned prior to analysis. All research data remained on a secure password-protected laptop with limited accessibility. A backup thumb drive was used to retain a copy of all data in case of a hardware crash. Any incomplete surveys were not incorporated into the final analysis.

Demographic questions. Eight demographic questions were used to gather relevant background information. Demographic data included age, gender, learning models, career descriptors, and years of experience (Appendix A). Age and years of experience were measured on an interval scale. Gender and career descriptors were measured on the nominal scale. Both PBL and traditional learning models were defined in this section of the survey. Participants were also asked to select the learning model that best reflects their vocational training as part of the demographic portion of the survey.

Minnesota Satisfaction Questionnaire Short Form (MSQ). The MSQ is based on the 1977 long version developed by Weiss, Dawis, England, and Lofquist. The MSQ (see Appendix B) is available without charge or need for written approval through a Creative Commons attribution-noncommercial international license. The 20-question MSQ measures 20 main facets of job satisfaction (Thompson & Blain, 1992; Weisset al., 1967). The benefit of using the MSQ is that it is a stable multidimensional instrument able to capture the most meaningful aspects of job satisfaction, it requires only 5 minutes to complete, and it possesses an internal consistency of .83 in adult populations (Toomey, Levinson, & Palmer, 2009). This shorter version was created by taking one facet from each of the 20 subscales found in the long version of the instrument. The MSQ is as reliable as the long form (1977) in measuring intrinsic and extrinsic aspects of jobs satisfaction (Hirschfeld, 2000).

To test RQ1, RQ2, and RQ3, respondents' degree of overall job satisfaction was assessed with the MSQ questions. The job satisfaction questions were administered prior to the personality assessment questions to reduce the chance of bias in the personality scale results. Intrinsic facets of job satisfaction were measured by Questions 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, and 20. Extrinsic facets were measured by Questions 5, 6, 12, 13, 14, and 19. The remaining questions, 17 and 18, measured general aspects of job satisfaction (Hirschfeld, 2000). The MSQ uses a 5-point Likert scale where a value of 1 represents *very satisfied* and a value of 5 represents *very dissatisfied*. Twenty of the most relevant indicators, which range from compensation and workload to employee interactions, were examined in this study.

Self-directed search. Respondents' vocational personality profiles were assessed with two tests to determine how well their personality matches their occupation. Holland (1985) developed the first instrument, the SDS, in 1970. The instrument was later revised in 1977, 1985, and again in 1994 as the SDS-R 5th edition. The SDS-R was created to assist students in choosing college majors and to assist adults in selecting an occupation by providing insights into abilities, aspirations, and personality traits. This instrument is one of the most widely used and recognized career assessment instruments (Dozier, Sampson, Lenz, Peterson, & Reardon, 2015). The SDS-R is a copyrighted instrument available for use with permission granted by Psychological Assessment Resources (PAR) Inc. (Appendix C).

The SDS-R is a highly reliable test in adult professional populations and possesses an internal consistency of .90; the entire survey takes about 25 minutes to complete (Toomey et al., 2009). The current version of the SDS-R, consists of five different sections for a total of 264 questions. Three sections contain six 14-item scales and two sections consist of a six-item rating scale. This instrument is typically used for career planning. RQ3 was tested using the SDS-R to examine occupational personality variables. The relationship between an individual's personality traits and work environment was assessed. Respondents were scored according to how they align with Holland's RIASEC person-environment typology. The instrument was used in practicing adult forensic psychology professionals to determine which personality traits are exhibited in this population.

NEO five-factor inventory. NEO inventories are the most commonly used instruments to assess personality in adolescents and adults (Bjornsdottir et al., 2014). The original NEO-PR-R instrument was tested in a group of high school students. Since then, the NEO inventories have been tested in various age groups, ethnicities, and psychological backgrounds to improve on the psychometric capabilities (Costa & McCrae, 2004). The NEO-FFI-3 is a shortened 60-item version of the 240-item NEO-PI-3. It is the 2010 revision of the NEO-FFI that was originally developed by Costa and McCrae in 1978. There are many benefits to using this instrument; it is relatively quick to complete, economical, and accurately measures the five personality domains (openness, conscientiousness, extraversion, agreeableness, and neuroticism). The current version takes about 10 minutes to complete, either on paper or online, and includes improved readability for respondents compared to the original (Körner et al., 2015). The NEO FFI-3 is also a copyrighted instrument available for use with permission granted by PAR Inc. (Appendix C).

The NEO-FFI-3 is the standardized comprehensive five-factor model questionnaire. It measures the six key aspects that define each of the five major personality areas (Costa & McCrae, 1992). Each personality trait (openness, conscientiousness, extraversion, agreeableness, and neuroticism) is represented by a separate subscale. All five traits were examined in this study. The Cronbach's alpha score for each subscale range from .75 to .83 (Caruso, 2000).

RQ3 was tested using the NEO-FFI-3. Unlike the SDS-R, which examines how the person fits the vocation, the NEO-FFI-3 examines personality from a different

perspective. It specifically examines personality factors in forensic psychology professionals. By combining both instruments to investigate personality traits in forensic psychology professionals, a more comprehensive personality profile was created that may shed light on vocational decision-making variables.

Independent Variables

The independent variables were evaluated as predictors for job satisfaction. The learning model variable was used in two ways: (a) to determine whether there are differences between practitioners trained using a traditional learning model or the PBL modality, and (b) to separate participants into one of two groups. Similarly, age, gender, and years of experience were compared to job satisfaction to determine their influence on job satisfaction. The aforementioned demographic variables were measured in the demographic section of the survey. Personality traits were used to assess any differences in job satisfaction due to various personality types. Personality traits were measured using the NEO-FFI-3 and the SDS-R. The former evaluates personality based on the five factor-model and the latter using Holland's vocational personality types (RIASEC). Combining both assessment tools provided a more robust personality profile for forensic psychology professionals.

Table 1

Description of Independent Variables

Variable	Description of variable	Assessment tool
Age	Continuous	Demographic survey
Gender	Nominal	Demographic survey
Career descriptors	Nominal	Demographic survey
Years of experience	Continuous	Demographic survey
Learning models	Categorical	Demographic survey
Personality trait	Categorical	NEO-FFI-3 and SDS-R

Dependent Variables

Job satisfaction was the only dependent variable assessed. Each independent variable was measured against job satisfaction. The degree of satisfaction was scored on a 5-point Likert scale where the lowest values indicated higher levels of satisfaction and highest values indicated dissatisfaction. The MSQ was used to measure the dependent variable. Job satisfaction was measured on an ordinal scale.

Analysis of Variance

Analysis of variance (ANOVA) was used to determine if there are any differences between learning models, personality traits, and job satisfaction. ANOVA was the most appropriate test because it is designed to assess the variation between two or more groups. The two groups are those within the PBL group or the traditional learning model group.

T-test

Differences among the two learning model groups and job satisfaction are best addressed by a t-test. It was used to measure any difference between the two populations. A t-test was used to determine if there is a statistically significant difference among the traditional lecture-based learning and PBL model groups.

Research Questions

This study was designed to examine the relationship between two learning models and the influence of personality on job satisfaction in forensic psychology professionals. The research questions and associated hypotheses are listed below:

RQ1: Do sociodemographic factors predict job satisfaction in forensic psychology?

SQ1a: Do age and gender influence job satisfaction?

$H_0 1_1$: Age and gender do not influence job satisfaction.

$H_a 1_1$: Age and gender influence job satisfaction.

SQ1b: Do years of experience influence job satisfaction?

$H_0 1_2$: Years of experience does not influence job satisfaction.

$H_a 1_2$: Years of experience influences job satisfaction.

RQ2: Is there a relationship between learning models and job satisfaction in forensic psychology?

$H_0 2$: Forensic psychologists trained using the problem-based learning model do not have higher job satisfaction than those trained using a traditional lecture-based learning model.

H_a2: Forensic psychologists trained using the problem-based learning model have higher job satisfaction than those trained using a traditional lecture-based learning model.

RQ3: Is there a difference in job satisfaction among forensic psychologists with differing personality traits?

SQ3a: Is there a difference in job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits?

H_03_1: There no difference in the level of job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits.

H_a3_1: There a difference in the level of job satisfaction among forensic psychologists trained by problem-based learning model with differing personality traits.

SQ3b: Is there a difference in job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits?

H_03_2: There no difference in the level of job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits.

H_a3_2: There a difference in the level of job satisfaction among forensic psychologists trained by lecture-based model with differing personality traits.

Table 2

Research Hypotheses and Analysis

Hypothesis	Variables	Analysis	Assessment tool
H_a1_1 and H_a1_2: Sociodemographic factors predict job satisfaction.	Age, gender, career descriptors, and years of experience (IV) Job satisfaction (DV)	T-test	Demographic survey, NEO-FFI-3, and SDS-R
H_a2:There is a relationship between learning models and job satisfaction.	Learning models (IV) Job satisfaction (DV)	T-test	Demographic survey, MSQ, and SDS-R
H_a3_1 and H_a3_2: There is a relationship between learning models, personality traits, and job satisfaction in forensic psychology.	Learning models, and personality trait (IV) Job satisfaction (DV)	One-way ANOVA/post hoc tests as needed	Demographic survey, NEO-FFI-3, SDS-R, and MSQ

Procedures and Data Collection

Two groups were compared in this study. The first group consisted of individuals who indicate that their training was consistent with the PBL approach. The second group consisted of individuals who identify their training as a traditional lecture-based learning approach. Both PBL and traditional learning models were defined in the survey to ensure participants understand the differences between the two. Participants were recruited from AAFS; APA Divisions 18, 39, 41, 42; and SPCP public member directories. Invitation emails were sent to members of listservs and distribution lists to solicit participation.

Data was collected from forensic psychology professionals across the United States. As part of the sociodemographic section of the survey, participants were divided into two groups by self-selecting which model most closely aligns with their forensic psychology training. Both PBL and lecture-based learning were defined in the sociodemographic portion of the survey.

Learning models were measured on a nominal scale as either PBL or lecture-based. Job satisfaction and personality traits as measured by the NEO-FFI-3 and the SDS-R RIASEC person-environment typology will be evaluated against the learning models (PBL and traditional lecture-based). This comparison revealed any significant personality typologies among practitioners trained using each learning model. Personality trait was measured as a nominal scale. Sociodemographic questions were posed, first using a data form, followed by the administration of the 60-question NEO-FFI-3 survey and the 72-question SDS-R. In addition, 20 job satisfaction elements (10 intrinsic and 10 extrinsic) was measured using the MSQ-Short Form. Job satisfaction was measured as an ordinal scale. *Post hoc* analysis were conducted to assess the influence of gender.

Threats to Validity

Researchers must make every effort to identify and eliminate threats to internal and external validity. Internal and external threats impact the ability to draw appropriate inferences about the study data. No internal or external threats to validity were anticipated. A convenience sample was utilized for this study to ensure there is no bias in participant selection. Furthermore, inferences were not be made beyond the target population for this study. The validity of an instrument can be measured through its

content. How well an instrument truly measures the constructs it is designed to assess is signified by content validity. All three assessment tools accurately quantify the constructs they were designed to measure (Bjornsdottir et al., 2014, Toomey et al., 2009). As these instruments were merged together for use in this study. Participants were provided with an IRB-approved consent form prior to completing the survey. No ethical issues were anticipated.

Summary

This quantitative study was designed to assess the relationship between learning models and personality on job satisfaction in forensic psychology professionals. Demographic information included age, gender, years of experience, and learning models. In addition to a brief demographic questionnaire, three survey instruments were combined to investigate the research questions. Two of the three instruments, the NEO-FFI-3 and SDS-R, measured personality constructs. The NEO-FFI-3 assessed personality on the domain level rather than linking personality to vocation as measured by the SDS-R. The third instrument, the MSQ-Short Form, measured the degree of overall job satisfaction.

An adaption of Vygotsky's ZPD and Holland's career choice theories represent the theoretical framework for this study. Both were used to address the study questions. ANOVAs and t-tests were used to address the hypotheses and research questions. The results of this study provided personality data specific to forensic psychology professionals. Study results will be discussed in detail in Chapter 4.

Chapter 4: Results

Introduction

The roles that learning model and personality play on job satisfaction were the topic of this study. The purpose of this study was to compare two learning models—PBL and lecture-based—and assess the influence of personality on the level of job satisfaction among forensic psychology professionals. Contained in this chapter are demographic characteristics of the sample population and the statistical analysis findings. The assumptions for each analysis are also included. Detailed information about the study population, data collection process, and descriptive statistics are provided. In addition, explanations of the statistical findings, as they relate to each research question and hypothesis, are offered.

Data Collection

Data collection was completed in two phases due to initial low response rates. The first phase consisted of recruiting participants from APA Division 41 and the SPCP. The survey was open for 3 months. The second phase included four additional professional associations. These included APA Divisions 18, 39, and 42, and the AAFS. During this phase, the survey was open for an additional 2 months. In total, the survey was open for 5 months. Incomplete surveys were not included in the analysis. Eighty respondents accessed the survey, and 49 surveys were completed.

Three survey instruments were used in this study (MSQ, NEO-FFI, and SDS-R). The first instrument, MSQ, consisted of twenty 5-point Likert scale items, with 1 = *very dissatisfied*, 2 = *dissatisfied*, 3 = *neither*, 4 = *satisfied*, and 5 = *very satisfied*. The job

satisfaction scale measured intrinsic and extrinsic aspects of jobs satisfaction. Intrinsic facets of job satisfaction were measured by Questions 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, and 20. Extrinsic facets were measured by Questions 5, 6, 12, 13, 14, and 19. The remaining questions, 17 and 18, measured general aspects of job satisfaction. For each facet, the item responses were averaged to create a total score. A total score of overall job satisfaction could also be computed by averaging the response scores of all 20 items. The total scores (of each facet and overall) range from 0 to 5 with a lower score representing a lower level of job satisfaction. For this study, there were four measures of job satisfaction: (a) intrinsic, (b) extrinsic, (c) general aspects of job satisfaction, and (d) overall job satisfaction.

The second instrument, NEO-FFI, comprised 60 questions. This instrument divided personality into five domains with 12 questions per domain. The five main categories of personality traits can be formed based on NEO-FFI where openness, conscientiousness, extraversion, agreeableness, and neuroticism were used to create personality profiles. Respondents' raw scores were used to calculate personality type. Scores were tabulated across each domain to determine which traits scored the highest for each respondent.

The third instrument, SDS-R, consisted of six typology groups. According to SDS-R, people can be classified into six basic types: (a) realistic, (b) investigative, (c) artistic, (d) social, (e) enterprising, and (f) conventional). For this instrument, responses were tallied across the six types. The typology with the highest scores were used for the analysis.

Analysis Methods

Data were imported into SPSS Version 23 for Windows. Frequency tables and descriptive statistics were used to summarize the survey responses for demographics and MSQ. In addition, descriptive statistics were used to summarize the four measures of job satisfaction. Normality of the data (the four measures of job satisfaction) was assessed using the z-scores of skewness and kurtosis. A value of the score greater than 2.58 or less than –2.58 (two-tailed alpha levels of 0.01) indicates the data are not normally distributed (Fidell & Tabachnick, 2003). As the data were normally distributed, parametric tests were proposed to answer the research questions.

Statistical Assumptions

RQ1 was answered using Pearson's correlation coefficients and 2-sample t-test. Pearson's correlation coefficients were computed for the four measures of job satisfaction and the continuous demographic variables, including age and years of experience. Additionally, 2-sample t-tests were used to determine if there was a relationship between the four measures of job satisfaction and the categorical demographic variables, including gender (male vs. female) and career descriptor (PhD vs. PsyD). The following assumptions of Pearson's correlation coefficients (Moore, McCabe, & Craig, 2009) needed to be satisfied:

1. The variables either interval or ratio variables and must be continuous.
2. There must be a linear relationship between the variables.
3. The data contains no outliers.
4. There must be a normal distribution among the variables.

The first assumption was satisfied as the scores for job satisfaction, age, and years of experience were all continuous. A scatterplot was used to confirm the second assumption. It demonstrated a linear relationship existed for the two variables. A scatterplot was also used to examine the third assumption to confirm there were no significant outliers. The fourth assumption was checked via z-scores of skewness and kurtosis (Fidell & Tabachnick, 2003).

The following assumptions of 2-sample t-tests (Moore, McCabe, and Craig, 2009) needed to be satisfied:

1. The two populations being compared should be sampled independently.
2. There should be a normal distribution for the two populations being compared.
3. The two populations being compared should have equal variance.

The first assumption was satisfied because the data were sampled from two independent populations (male vs. female; PhD vs. PsyD). The second assumption was satisfied as the four measures of job satisfaction were normally distributed based on the results of z-scores of skewness and kurtosis. The third assumption was checked via Levene's test for equal variances.

RQ2 was answered using 2-sample t-tests to determine if there was a relationship between the four measures of job satisfaction and learning models (lecture-based vs. problem-based). The assumptions of 2-sample t-tests were also checked. RQ3 and SQ3a and SQ3b were answered using one-way analysis of variances (ANOVA) and 2-sample t-tests (Field, 2013). The assumptions of 2-sample t-tests were checked. The following assumptions for ANOVA (Field, 2013) needed to be satisfied: (a) independence of the

observations, (b) residuals are distributed normally, and (c) residuals exhibit homogeneous (constant) variance. The first assumption was satisfied as each survey participant was independent. The second assumption was checked using z-scores of skewness and kurtosis (Fidell & Tabachnick, 2003). The third assumption was checked using Levene's test for equal variances and residual plots.

The target study population encompassed a diverse group within the forensic psychology profession. Nonprobability sampling was used in this study. Furthermore, a convenience sample was used for this study to ensure there was no bias in participant selection. The survey was anonymous and representative information about a larger population not meeting the inclusion criteria of this research does not exist. Thus, it is not possible to determine the representative nature of the sample. For all tests, a p-value less than 0.05 was considered significant. All p-values in this study were two-sided.

Descriptive Statistics

Ultimately, 49 respondents participated in the study. Tables 3 and 4 show the participant demographics. Approximately two thirds of the participants were female (61.2%) and had a doctor of philosophy (PhD) degree (67.3%). Regarding the training model that best aligned with their forensic psychology instruction, 40.8% used lectured-based learning, 38.8% used PBL, and 18.4% used both. All participants ($N = 49$) were forensic psychology professionals and practiced in the United States. The majority of participants (91.8%) were licensed in the United States. The average age of the participants was 48.29 years old ($SD = 14.14$). The average years of experience for the participants was 19.38 ($SD = 13.53$) and ranged from 1 to 45 years.

Table 3

Demographics, Categorical Variables

Demographic	Response	N	%
Gender	Female	30	61.2
	Male	19	38.8
Degree type	PhD	33	67.3
	PsyD	15	30.6
	Bachelor's degree	1	2.0
Training model	Lecture-based learning	20	40.8
	Problem-based learning	19	38.8
	Both	9	18.4
	No response	1	2.0
Forensic psychology professional	Yes	49	100.0
Practice/work in the U.S.	Yes	49	100.0
Licensed in the U.S.	No	4	8.2
	Yes	45	91.8

Table 4

Participant Demographics, Continuous Variables

Variable	M	SD	Min.	Max.
Age	48.29	14.14	22	72
Years of experience	19.38	13.53	1	45

Table 5 shows the summary statistics of the four measures of job satisfaction. They included intrinsic and extrinsic aspects, general aspects of job satisfaction, and overall job satisfaction. Total scores (of each facet and overall) ranged from 0 to 5 with the lower scores representing lower levels of job satisfaction. The mean score of the intrinsic, extrinsic, and general aspect of job satisfaction was 4.30 (*SD* = 3.86), 3.56 (*SD* = 0.64), and 3.98 (*SD* = 0.82), respectively. This included participants who had moderate

to high levels of job satisfaction in each of the three aspects. The mean score of overall job satisfaction was 4.05 (*SD* = 0.40), suggesting overall participants in the sample were highly satisfied with their job.

Table 5

Aspects of Job Satisfaction

Aspects	M	SD	Min.	Max.
Overall	4.05	0.40	3.30	4.80
Intrinsic	4.30	3.86	3.58	5.00
Extrinsic	3.56	0.64	2.00	4.83
General	3.98	0.82	2.00	5.00

Table 6 displays the survey responses for job satisfaction. The mean response scores for each question of the MSQ ranged from 3.08 (SD = 0.84) to 4.73 (SD = 0.45), indicating participants generally had moderate to high levels of job satisfaction. The items with the highest average response scores were Q11 (M = 4.73, SD = 0.45), Q15 (M = 4.65, SD = 0.60), and Q7 (M = 4.55, SD = 0.54). The items with the lowest average response scores were Q12 (M = 3.08, SD = 0.84), Q10 (M = 3.24, SD = 0.75), and Q5 (M = 3.55, SD = 1.10).

Table 6

MSQ Survey Responses

Question	Rating 1	2	3	4	5
	Response frequency (%)				
1. Being able to keep busy all the time	0	4.1	4.1	42.9	49.0
2. The chance to work alone on the job	0	0	10.2	55.1	34.7
3. The chance to do different things from time to time	0	8.2	4.1	34.7	53.1
4. The chance to be "somebody" in the community	0	0	36.7	40.8	22.4
5. The way my boss handles his/her workers	4.3	10.6	34.0	27.7	23.4
6. The competence of my supervisor in making decisions	4.3	8.7	28.3	37.0	21.7
7. Being able to do things that don't go against my conscience	0	0	2.0	40.8	57.1
8. The way my job provides for steady employment	2.1	4.2	0	33.3	60.4
9. The chance to do things for other people	0	0	12.2	44.9	42.9
10. The chance to tell people what to do	0	8.2	69.4	12.2	10.2
11. The chance to do something that makes use of my abilities	0	0	0	26.5	73.5
12. The way company policies are put into practice	2.0	20.4	49.0	24.5	4.1
13. My pay and the amount of work I do	4.1	16.3	10.2	44.9	24.5
14. The chances for advancement on this job	2.1	14.6	25.0	39.6	18.8
15. The freedom to use my own judgment	0	0	6.1	22.4	71.4
16. The chance to try my own methods of doing the job	0	0	4.1	44.9	51.0
17. The working conditions	0	10.2	6.1	63.1	30.6
18. The way my co-workers get along with each other	0	10.2	22.4	32.7	34.7
19. The praise I get for doing a good job	2.0	2.0	30.6	40.8	24.5
20. The feeling of accomplishment I get from the job	0	0	10.2	40.8	49.0

Note. $N = 49$; 1 = very dissatisfied, 2 = dissatisfied, 3 = neither, 4 = satisfied, and 5 = very satisfied.

Normality measures for the continuous variables in the study are presented in Table 7 (i.e., skewness, kurtosis, and the z-scores of skewness and kurtosis). Data distribution can be compared using skewness and kurtosis measures. More specifically, these measures can be used to determine if the data are normally distributed. Skewness measures the degree of symmetry or lack of symmetry present. The sample skewness measures the tendency for the values to be larger, or skewed, in one direction than in the other. Normally distributed variables should be symmetric. Thus, lacking a skew in either direction. When the values are skewed to the left, the sample is considered to have a negative skew. In a negative skew distribution, the tail will be longer on the right indicating the values are shifted to the left. When the values are skewed to the right, the sample is considered to have a positive skew. In a positive skew distribution, the tail will be longer on the left indicating the values are shifted to the right

Kurtosis is a measure of the thickness of the tail (heavy-tailed or light-tailed) relative to a normal distribution. Kurtosis measures the peakedness of the distribution. A low kurtosis distribution has a rounded peak and thinner tails. In contrast, a high kurtosis distribution has a sharper peak and fatter tails. Normally distributed variables should have a kurtosis near zero. As the values of the z-scores for skewness and kurtosis for the continuous study variables were all greater than 2.58 or less than -2.58, it was concluded that the continuous study variables of age, years of experience, intrinsic job satisfaction, extrinsic job satisfaction, general job satisfaction, and overall job satisfaction were all normally distributed.

Table 7

Normality of the Continuous Study Variables

Variable	Skewness	kurtosis	$Z_{skewness}$	$Z_{kurtosis}$
Age	0.097 (0.340)	–1.344 (0.668)	0.29	–2.01
Years of experience	0.540 (0.340)	–0.643 (0.668)	1.59	–0.96
Intrinsic job satisfaction	0.022 (0.340)	–0.951 (0.668)	0.06	–1.42
Extrinsic job satisfaction	–0.194 (0.340)	–0.056 (0.668)	–0.57	–0.08
General job satisfaction	–0.711 (0.340)	0.179 (0.668)	–2.09	0.27
Overall job satisfaction	0.061 (0.340)	–1.034 (0.668)	0.18	–1.55

Note. Numbers in parentheses are standard errors.

The Pearson's correlation coefficients and 2-sample t-test were used to answer RQ 1. Pearson's correlation coefficients were computed for the four measures of job satisfaction and the continuous demographic variables, including age and years of experience (Field, 2013). The assessment of the assumptions for Pearson's correlations coefficients indicated that all assumptions were satisfied, and hence the use of Pearson's correlation coefficients was appropriate.

The results of Pearson's correlation coefficients are presented in Table 8. As all p-values were greater than 0.05, it was concluded that there was no statistically significantly relationship between the four measures of job satisfaction (intrinsic, extrinsic, general, and overall) and age, and there was no statistically significantly relationship between the four measures of job satisfaction (intrinsic, extrinsic, general, and overall) and years of experience.

Table 8

Pearson's Correlation between the Four Measures of Job Satisfaction, Age, and Years of Experience

Job satisfaction	Age	Years of experience
Overall	0.006 (0.966)	0.055 (0.708)
Intrinsic	–0.136 (0.352)	–0.123 (0.400)
Extrinsic	0.129 (0.376)	0.218 (0.132)
General	0.107 (0.464)	0.102 (0.487)

Note. $N = 49$. Numbers in parentheses are p-values.

To determine if there was a relationship between the four measures of job satisfaction and the categorical demographic variables, including gender (2 levels: male vs. female) and career descriptor (2 levels: PhD vs. PsyD) 2-sample t-tests (Field, 2013) were used. The analysis results for the four measures of job satisfaction when compared to gender are presented in Table 9 (descriptive statistics). According the analysis results for the four measures of job satisfaction by gender, there was no statistically significant difference in intrinsic job satisfaction between male and female, $t(47) = 0.616$, $p = 0.541$.

Table 9

Descriptive Statistics of the Four Measures of Job Satisfaction by Gender

Job satisfaction	Gender	N	Mean	SD
Overall	Female	30	4.04	0.43
	Male	19	4.07	0.36
Intrinsic	Female	30	4.33	0.41
	Male	19	4.26	0.35
Extrinsic	Female	30	3.50	0.69
	Male	19	3.66	0.55
General	Female	30	3.90	0.95
	Male	19	4.11	0.54

There was no statistically significant difference in extrinsic job satisfaction between male and female, $t(47) = -0.851$, $p = 0.399$. Similarly, there was no statistically significant difference in general job satisfaction between male and female, $t(46.624) = -0.961$, $p = 0.341$. Ultimately, there was no statistically significant difference in overall job satisfaction between male and female, $t(47) = -0.251$, $p = 0.803$.

According the analysis results for the four measures of job satisfaction by career descriptor (Table 10), there was no statistically significant difference in intrinsic job satisfaction between PhD and PsyD holders, $t(46) = -1.327$, $p = 0.191$. Once more, there was no statistically significant difference in extrinsic job satisfaction between PhD and PsyD holders, $t(18.988) = 1.722$, $p = 0.101$. Again, there was no statistically significant difference in general job satisfaction between PhD and PsyD holders, $t(46) = 0.125$, $p = 0.901$. Ultimately, there was no statistically significant difference in overall job

satisfaction between PhD and PsyD holders, $t(46) = 0.229$, $p = 0.820$. Thus, according to the analysis results, none of the sociodemographic factors, such as age, gender, career descriptors, and years of experience, predicted job satisfaction in forensic psychology.

Table 10

Descriptive Statistics of the Four Measures of Job Satisfaction by Career Descriptor

Job satisfaction	Degree	N	Mean	SD
Overall	PhD	33	4.05	0.38
	PsyD	15	4.02	0.46
Intrinsic	PhD	33	4.24	0.37
	PsyD	15	4.40	0.39
Extrinsic	PhD	33	3.67	0.50
	PsyD	15	3.28	0.81
General	PhD	33	4.03	0.81
	PsyD	15	4.00	0.71

For RQ 2, 2-sample t-tests were used to determine if there was a relationship between the four measures of job satisfaction and learning models (Lecture-based vs. problem-based). The analysis results for the four measures of job satisfaction by learning models are presented in Tables 11 and 12.

According the analysis results for the four measures of job satisfaction by learning models, there was no statistically significant difference in intrinsic job satisfaction between lecture-based learning and , $t(33.058) = -2.024$, $p = 0.051$. In addition, there was no statistically significant difference in extrinsic job satisfaction between lecture-based learning and , $t(37) = -0.560$, $p = 0.579$. Similarly, there was no statistically significant

difference in general job satisfaction between lecture-based learning and , t(28.924) = -1.748, p = 0.091. Ultimately, there was no statistically significant difference in overall job satisfaction between lecture-based learning and , t(37) = -1.799, p = 0.080. Thus, it was concluded that there was no statistically significant relationship between learning models and job satisfaction in forensic psychology.

Table 11

Descriptive Statistics of The Four Measures of Job Satisfaction by Learning Model

Job satisfaction	Learning model	N	Mean	SD
Overall	Lecture-based	20	3.90	0.45
	Problem-based	19	4.13	0.34
Intrinsic	Lecture-based	20	4.16	0.46
	Problem-based	19	4.41	0.30
Extrinsic	Lecture-based	20	3.46	0.66
	Problem-based	19	3.57	0.60
General	Lecture-based	20	3.63	1.02
	Problem-based	19	4.08	0.53

Table 12

Results of the 2-Sample T-Tests for the Four Measures of Job Satisfaction by Learning Models

		Levene's test for equality of variances		t-test for equality of means		
		F	p	t	df	p
Intrinsic	Equal variances assumed	4.882	0.033	–2.003	37	0.053
	Equal variances not assumed			–2.024	33.058	0.051
Extrinsic	Equal variances assumed	0.727	0.399	–0.560	37	0.579
	Equal variances not assumed			–0.561	36.932	0.578
General	Equal variances assumed	10.124	0.003	–1.721	37	0.094
	Equal variances not assumed			–1.748	28.924	0.091
Overall	Equal variances assumed	2.248	0.142	–1.799	37	0.080
	Equal variances not assumed			–1.812	35.336	0.078

Note. When the assumption of equal variance was not satisfied (i.e., p-value of the Levene's test was less than 0.05), 2-sample t-test with unequal variances was utilized.

For RQ 3, one-way analysis of variances (ANOVA) and 2-sample t-tests were utilized.

Analysis Results for the Main Question

Eight one-way ANOVAs were performed, where the dependent variables were the four measures of job satisfaction and the independent variable was SDS-R personality trait. The remaining four ANOVAs were run using the four measures of job satisfaction as the dependent variables and the independent variable was NEO-FFI personality trait. As the sample size was small, the categories of SDS-R and NEO-FFI were regrouped before conducting the ANOVAs. For SDS-R personality trait, there were three

categories: I, S, and other, where "other" included A, E and R. For NEO-FFI personality trait, there were three categories: C, O, and other, where "other" included A, C/A, C/E, E, O/A, and O/C. The three assumptions of the ANOVAs were checked. All assumptions were satisfied. Table 13 shows the personality traits of the participants based on SDS-R and NEO-FFI. According to SDS-R, the personality traits of majority of the participants were either "Social" (55.1%) or "Investigative" (36.7%). According to NEO-FFI, the personality traits of majority of the participants were either "Conscientiousness" (40.8%), "Openness" (30.6%), or "Agreeableness" (12.2%).

Table 13

Personality Traits Based on SDS-R and NEO-FFI

Instrument	Trait	%
SDS-R	Artistic	4.1
	Extraversion	2.0
	Investigative	36.7
	Realistic	2.0
	Social	55.1
NEO-FFI	Agreeableness	2.2
	Conscientiousness	40.8
	Extraversion	4.1
	Openness	30.6
	Conscientiousness and Agreeableness	2.0
	Conscientiousness and Extraversion	6.1
	Openness and Agreeableness	2.0
	Openness and Conscientiousness	2.0

The descriptive statistics of the four measures of job satisfaction for subjects with differing SDS-R personality traits are presented in Table 14. The analysis results of the ANOVAs for determining if there was a statistically significant difference in the four measures of job satisfaction among subjects with differing SDS-R personality traits are

presented in Table 15. According to the analysis results, when considering the entire sample (N = 49), there was no statistically significant difference in intrinsic job satisfaction among subjects with differing SDS-R personality traits, $F(2, 46) = 0.193$, $p = 0.825$. Again, there was no statistically significant difference in extrinsic job satisfaction among subjects with differing SDS-R personality traits, $F(2, 46) = 0.313$, $p = 0.733$. With respect to general job satisfaction, there was no statistically significant difference among subjects with differing SDS-R personality traits, $F(2, 46) = 0.777$, $p = 0.466$. Thus, there was no statistically significant difference in overall job satisfaction among subjects with differing SDS-R personality traits, $F(2, 46) = 0.348$, $p = 0.708$.

Table 14

Job Satisfaction Descriptive Statistics by SDS-R Personality Trait

Job satisfaction	SDS-R traits	N	M	SD
Overall	18	4.03	0.36	18
	27	4.04	0.41	27
	4	4.21	0.59	4
Intrinsic	Investigative	18	4.28	0.41
	Social	27	4.30	0.37
	Other	4	4.42	0.48
Extrinsic	Investigative	18	3.51	0.55
	Social	27	3.56	0.66
	Other	4	3.79	0.95
General	Investigative	18	4.11	0.70
	Social	27	3.85	0.91
	Other	4	4.25	0.65

Table 15

ANOVA Table for SDS-R Personality Trait

Dependent variable	Source	SS	df	MS	F	p	Partial Eta^2
Overall	SDS-R	0.114	2	0.057	0.348	0.708	0.015
	Error	7.564	46	0.164			
	Corrected total	7.679	48				
Intrinsic	SDS-R	0.059	2	0.030	0.193	0.825	0.008
	Error	7.092	46	0.154			
	Corrected total	7.151	48				
Extrinsic	SDS-R	0.261	2	0.131	0.313	0.733	0.013
	Error	19.198	46	0.417			
	Corrected total	19.460	48				
General	SDS-R	1.044	2	0.522	0.777	0.466	0.033
	Error	30.935	46	0.673			
	Corrected total	31.980	48				

Note. SS = sum of squares; MS = mean square; F = F-statistic; p = p-value; partial Eta^2 = effect size.

The descriptive statistics of the four measures of job satisfaction for subjects with differing NEO-FFI personality traits are presented in Table 16. The analysis results of the ANOVAs for determining if there was a statistically significant difference in the four measures of job satisfaction among subjects with differing NEO-FFI personality traits are presented in Table 17. According to the analysis results, when considering the entire sample (N = 49), there was no statistically significant difference in intrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 46) = 0.463$, $p = 0.632$. In addition, there was no statistically significant difference in extrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 46) = 1.541$, $p = 0.225$. There was no statistically significant difference in general job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 46) = 1.525$, $p = 0.228$.

Ultimately, there was no statistically significant difference in overall job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 46) = 0.851$, $p = 0.434$.

Table 16

Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits

Job satisfaction	NEO-FFI traits	N	Mean	SD
Overall	Conscientiousness	20	4.03	0.45
	Openness	15	3.98	0.34
	Other	14	4.16	0.39
Intrinsic	Conscientiousness	20	4.25	0.40
	Openness	15	4.30	0.42
	Other	14	4.38	0.34
Extrinsic	Conscientiousness	20	3.66	0.65
	Openness	15	3.33	0.54
	Other	14	3.68	0.69
General	Conscientiousness	20	3.80	1.02
	Openness	15	3.93	0.59
	Other	14	4.29	0.64

Table 17

ANOVA Table for NEO-FFI Personality Trait

Dependent variable	Source	SS	df	MS	F	p	Partial Eta^2
Overall	NEO-FFI	0.274	2	0.137	0.851	0.434	0.036
	Error	7.405	46	0.161			
	Corrected total	7.679	48				
Intrinsic	NEO-FFI	0.141	2	0.071	0.463	0.632	0.020
	Error	7.010	46	0.152			
	Corrected total	7.515	48				
Extrinsic	NEO-FFI	1.222	2	0.611	1.541	0.225	0.063
	Error	18.237	46	0.396			
	Corrected total	19.460	48				
General	NEO-FFI	1.989	2	0.995	1.525	0.228	0.062
	Error	29.990	46	0.652			
	Corrected total	31.980	48				

Note. SS = sum of squares; MS = mean square; F = F-statistic; p = p-value; Partial Eta^2 = effect size.

Analysis Results for the First Sub-Question

In the first SQ of RQ3, the existence of a difference in job satisfaction among forensic psychologists trained by model with differing personality traits was investigated. Only the 19 subjects trained with were used to answer this question.

Personality traits based on SDS-R. For the 19 subjects, the frequency distribution of their SDS-R personality traits was: A (N = 1), I (N = 8), R (N = 1), and S (N = 9). Therefore, when using SDS-R to categorize subjects' personality traits, only subjects with SDS-R personality traits I and S were used in the data analysis. Two-sample t-tests were performed to determine if there was a statistically significant difference in the four measures of job satisfaction among subjects with differing SDS-R personality traits. The assumptions of two-sample t-tests were checked. The analysis results for the four measures of job satisfaction by the two SDS-R personality traits are presented in Table 18 (descriptive statistics) and Table 19 (results of t-test).

The results indicated there was no statistically significant difference in intrinsic job satisfaction between subjects with SDS-R personality traits I and S, $t(15) = -0.342$, $p = 0.737$. Again, there was no statistically significant difference in extrinsic job satisfaction between subjects with SDS-R personality traits I and S, $t(15) = -1.327$, $p = 0.204$. Once more, there was no statistically significant difference in general job satisfaction between subjects with SDS-R personality traits I and S, $t(15) = 0.051$, $p = 0.960$. Ultimately, there was no statistically significant difference in overall job satisfaction between subjects with SDS-R personality traits I and S, $t(15) = -0.915$, $p = 0.374$. Thus, according to the analysis results, there was no statistically significant

difference in job satisfaction (in terms of intrinsic, extrinsic, general, and overall job satisfaction) among forensic psychologists trained by model with differing SDS-R personality traits.

Table 18

Descriptive Statistics of the Four Measures of Job Satisfaction by SDS-R Personality Traits

Job satisfaction	SDS-R	N	Mean	SD
Overall	Investigative	8	4.10	0.33
	Social	9	4.24	0.31
Intrinsic	Investigative	8	4.43	0.29
	Social	9	4.48	0.29
Extrinsic	Investigative	8	3.44	0.57
	Social	9	3.81	0.59
General	Investigative	8	4.13	0.58
	Social	9	4.11	0.55

Table 19

Results of the 2-Sample T-Tests For the Four Measures of Job Satisfaction by SDS-R Personality Traits

		Levene's test for equality of variances		t-test for equality of means		
		F	p	T	df	p
Overall	Equal variances assumed	0.016	0.900	–0.915	15	0.374
	Equal variances not assumed			–0.911	14.414	0.377
Intrinsic	Equal variances assumed	0.014	0.907	–0.342	15	0.737
	Equal variances not assumed			–0.342	14.720	0.737
Extrinsic	Equal variances assumed	0.178	0.679	–1.327	15	0.204
	Equal variances not assumed			–1.330	14.863	0.204
General	Equal variances assumed	0.143	0.710	0.051	15	0.960
	Equal variances not assumed			0.051	14.482	0.960

Note. When the assumption of equal variance was not satisfied (i.e., p-value of the Levene's test was less than 0.05), 2-sample t-test with unequal variances was used.

Personality traits based on NEO-FFI. For the 19 subjects, the frequency distribution of their NEO-FFI personality traits was: A (N = 3), C (N = 5), C/A (N = 1), C/E (N = 1), E (N = 1), O (N = 7), and O/A (N = 1). Thus, when using NEO-FFI to categorize subjects' personality traits, the personality traits were grouped into three categories: C (N = 5), O (N = 7), and other (N = 7). One-way ANOVAs were performed to determine if there was a statistically significant difference in the four measures of job satisfaction among subjects with differing NEO-FFI personality traits. Assumptions of ANOVAs were checked and all satisfied.

The analysis results for the four measures of job satisfaction by the NEO-FFI personality traits are presented in Table 20 (descriptive statistics) and Table 21 (results of ANOVAs). According the analysis results for the four measures of job satisfaction by NEO-FFI personality traits (Table 21), for subjects trained by , there was no statistically significant difference in intrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 16) = 0.718$, $p = 0.503$. Also, there was no statistically significant difference in extrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 16) = 0.847$, $p = 0.447$). There was no statistically significant difference in general job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 16) = 0.118$, $p = 0.890$. In addition, there was no statistically significant difference in overall job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 16) = 0.519$, $p = 0.605$. Thus, according to the analysis results, there was no statistically significant difference in job satisfaction (in terms of intrinsic, extrinsic,

general, and overall job satisfaction) among forensic psychologists trained by model with differing NEO-FFI personality traits.

Table 20

Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits

Job satisfaction	NEO-FFI traits	N	M	SD
Overall	Conscientiousness	5	4.15	0.25
	Openness	7	4.02	0.31
	Other	7	4.21	0.43
Intrinsic	Conscientiousness	5	4.33	0.25
	Openness	7	4.36	0.34
	Other	7	4.52	0.31
Extrinsic	Conscientiousness	5	3.80	0.49
	Openness	7	3.35	0.42
	Other	7	3.62	0.79
General	Conscientiousness	5	4.10	0.74
	Openness	7	4.00	0.29
	Other	7	4.14	0.63

Table 21

ANOVA for NEO-FFI Personality Traits

Dependent variable	Source	SS	df	MS	F	p	Partial Eta^2
Overall	NEO-FFI	0.126	2	0.063	0.519	0.605	0.061
	Error	1.941	16	0.121			
	Corrected total	2.067	18				
Intrinsic	NEO-FFI	0.136	2	0.068	0.718	0.503	0.082
	Error	1.519	16	0.095			
	Corrected total	1.655	18				
Extrinsic	NEO-FFI	0.613	2	0.306	0.847	0.447	0.096
	Error	5.788	16	0.362			
	Corrected total	6.401	18				
General	NEO-FFI	0.074	2	0.037	0.118	0.890	0.015
	Error	5.057	16	0.316			
	Corrected total	5.132	18				

Note. SS = sum of squares; MS = mean square; F = F-statistic; p = p-value; Partial Eta^2 = effect size.

Analysis Results for the Second Sub-Question

In the SQ2 of RQ3 the existence of a difference in job satisfaction among forensic psychologists trained by lecture-based learning model with differing personality traits was investigated. Only the 20 subjects trained with lecture-based learning were used to answer this question,

Personality traits based on SDS-R. For the 20 subjects, the frequency distribution of their SDS-R personality traits was: A (N = 1), I (N = 6), and S (N = 13). Thus, when using SDS-R to categorize subjects' personality traits, only subjects with SDS-R personality traits I and S were used in the data analysis. Two-sample t-tests were performed to determine if there was a statistically significant difference in the measures of job satisfaction among lecture-based learning subjects with differing SDS-R personality traits. The assumptions of two-sample t-tests were checked and confirmed.

The analysis results for the four measures of job satisfaction by the two SDS-R personality traits are presented in Table 22 (descriptive statistics) and Table 23 (results of t-tests). According the analysis results for the four measures of job satisfaction by SDS-R personality traits (Table 23), for subjects trained by lecture-based learning, there was no statistically significant difference in intrinsic job satisfaction between subjects with SDS-R personality traits I and S, $t(17) = -0.426$, $p = 0.675$. As seen in the NEO-FFI findings, there was no statistically significant difference in extrinsic job satisfaction between subjects with SDS-R personality traits I and S, $t(17) = -0.344$, $p = 0.735$. Again, there was no statistically significant difference in general job satisfaction between subjects with SDS-R personality traits I and S, $t(17) = 0.574$, $p = 0.573$. Similarly, there was no

statistically significant difference in overall job satisfaction between subjects with SDS-R personality traits I and S, $t(17) = -0.285$, $p = 0.748$. Thus, according to the analysis results, there was no statistically significant difference in job satisfaction (in terms of intrinsic, extrinsic, general, and overall job satisfaction) among forensic psychologists trained by lecture-based learning model with differing SDS-R personality traits.

Table 22

Descriptive Statistics for Job Satisfaction by SDS-R Personality Traits

Job satisfaction	SDS-R	N	Mean	SD
Overall	Investigative	6	3.81	0.31
	Social	13	3.87	0.45
Intrinsic	Investigative	6	4.06	0.50
	Social	13	4.15	0.41
Extrinsic	Investigative	6	3.33	0.46
	Social	13	3.44	0.72
General	Investigative	6	3.75	0.82
	Social	13	3.46	1.09

Table 23

Results of the 2-Sample T-Tests for the Four Measures of Job Satisfaction by SDS-R Personality Traits

		Levene's test for equality of variances		t-test for equality of means		
		F	p	T	df	p
Overall	Equal variances assumed	2.345	0.144	–0.285	17	0.779
	Equal variances not assumed			–0.328	14.037	0.748
Intrinsic	Equal variances assumed	0.001	0.975	–0.426	17	0.675
	Equal variances not assumed			–0.391	8.126	0.706
Extrinsic	Equal variances assumed	1.583	0.225	–0.344	17	0.735
	Equal variances not assumed			–0.406	14.859	0.690
General	Equal variances assumed	0.725	0.406	.0574	17	0.573
	Equal variances not assumed			0.639	12.870	0.534

Personality traits based on NEO-FFI. For the 20 lecture-based learning subjects, the frequency distribution of their NEO-FFI personality traits was: A (N = 2), C (N = 10), C/E (N = 2), E (N = 1), O (N = 4), and O/C (N = 1). Thus, when using NEO-FFI to categorize subjects' personality traits, the personality traits were grouped into 3 categories: C (N = 10), O (N = 4), and other (N = 6). One-way ANOVAs were performed to determine if there was a statistically significant difference in the four measures of job satisfaction among lecture-based learning subjects with differing NEO-FFI personality traits. Assumptions of ANOVAs were checked and all satisfied.

The analysis results for the four measures of job satisfaction by the NEO-FFI personality traits are presented in Table 24 (descriptive statistics) and Table 25 (results

ANOVAs). According the analysis results for the four measures of job satisfaction by NEO-FFI personality traits (Table 25), for subjects trained by lecture-based learning, there was no statistically significant difference in intrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 17) = 0.007$, $p = 0.993$. There was no statistically significant difference in extrinsic job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 17) = 1.991$, $p = 0.167$. Again, there was no statistically significant difference in general job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 17) = 2.349$, $p = 0.126$. Once more, there was no statistically significant difference in overall job satisfaction among subjects with differing NEO-FFI personality traits, $F(2, 17) = 0.657$, $p = 0.531$. Thus, according to the analysis results, there was no statistically significant difference in job satisfaction (in terms of intrinsic, extrinsic, general, and overall job satisfaction) among forensic psychologists trained by lecture-based learning model with differing NEO-FFI personality traits.

Table 24

Descriptive Statistics of Job Satisfaction by NEO-FFI Personality Traits

Job satisfaction	NEO-FFI traits	N	Mean	SD
Overall	Conscientiousness	10	3.86	0.53
	Openness	4	3.75	0.28
	Other	6	4.07	0.38
Intrinsic	Conscientiousness	10	4.16	0.52
	Openness	4	4.19	0.65
	Other	6	4.15	0.26
Extrinsic	Conscientiousness	10	3.45	0.68
	Openness	4	2.98	0.28
	Other	6	3.78	0.67
General	Conscientiousness	10	3.30	1.14
	Openness	4	3.38	0.75
	Other	6	4.33	0.68

Table 25

ANOVA Table for NEO-FFI Personality Traits

Dependent variable	Source	SS	df	MS	F	p	Partial Eta^2
Overall	NEO-FFI	0.271	2	0.136	0.657	0.531	0.720
	Error	3.507	17	0.206			
	Corrected total	3.778	19				
Intrinsic	NEO-FFI	0.003	2	0.002	0.007	0.993	0.001
	Error	4.017	17	0.236			
	Corrected total	4.020	19				
Extrinsic	NEO-FFI	1.553	2	0.776	1.991	0.167	0.190
	Error	6.627	17	0.390			
	Corrected total	8.180	19				
General	NEO-FFI	4.317	2	2.158	2.349	0.126	0.217
	Error	15.621	17	0.919			
	Corrected total	19.938	19				

Note. SS = sum of squares; MS = mean square; F = F-statistic; p = p-value; Partial Eta^2 = effect size.

Summary

According to the analysis results, there was no statistically significant difference in job satisfaction in terms of intrinsic, extrinsic, general, and overall job satisfaction among forensic psychologists. Socio-demographic factors did not influence job satisfaction as there was no statistically significant relationships between those variables in the population under study. These findings were seen in both the PBL and the lecture-based samples. Furthermore, there was no statistically significant difference in job satisfaction in forensic psychology professionals with difference personality traits or typologies. Thus, none of the alternate hypotheses were rejected in this study. Overall, the sample population of forensic psychology professionals experienced moderate to high levels of job satisfaction irrespective of personality. In chapter 5, the synthesis of these findings as well as areas for future research are presented.

Chapter 5: Summary, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to compare the relationship between learning model, personality, and job satisfaction in forensic psychology professionals. Participants were surveyed regarding personality type, personality typology, and degree of job satisfaction. The study findings indicated no statistically significant relationship between the independent and dependent variables. More specifically, job satisfaction was not influenced by personality, learning model, or sociodemographic factors. However, the findings from this study provided useful information about which learning models are used in forensic psychology instruction and the personality typologies existing in forensic psychology. Despite the lack of statistical significance for the job satisfaction variable, this study may promote social change by improving student experiences and informing educators about which learning models are most helpful to students and why.

Key Findings

On average, forensic psychology professionals who participated in this research study noted a wide range in years of experience and were predominantly female (n = 61.2%). Participants' years of experience spanned 44 years, ranging from 1 year to well over 40 years of experience in the profession. Two thirds possessed PhDs and the remaining one third held PsyD degrees. Overwhelmingly, respondents were licensed forensic psychology practitioners (91.8%). Overall, the forensic psychology professionals surveyed were satisfied in their careers. The MSQ instrument responses provided valuable data on intrinsic and extrinsic aspects of job satisfaction. Furthermore,

participants scored the highest in conscientiousness on the NEO-FFI personality index. This finding is supported by MSQ Question 20, which required respondents to rate their satisfaction with "the feeling of accomplishment I get from the job." Ninety-eight percent responded favorably to this question indicating their strong drive, diligence, and work ethic. Respondents also preferred to use "their own methods for doing things" and "use their own judgement." They were most satisfied with their careers when they were allowed to function independently in the workplace. As a population self-identifying as investigative (36.7%), the ability to remain autonomous while using judgment to resolve a problem is well-suited to the personality typology of the respondents.

Interpretation of the Findings

This study is a first step to better understand the relationship between personality and job satisfaction among forensic psychology professionals. A significant assumption of this study was that at least some forensic psychologists responding to the survey would be trained using the PBL model. Although not statistically significant, the findings of the study highlighted a personality typology that differed from the overarching psychology profession. In addition, it confirmed that PBL is used as a methodology for instruction in forensic psychology. Approximately 39% of the surveyed population identified their training modality as PBL. This finding indicated that PBL is a feasible modality for professional training within this population and added useful data regarding the types of training offered for forensic psychology instruction. Employees who identify themselves as receiving adequate training are often more satisfied in their careers (Tanwar & Prasad, 2016; Tschopp et al., 2013). Although the findings were not statistically significant with

respect to job satisfaction, forensic psychology professionals trained with either modality did report they were at least moderately satisfied with their careers. On balance, the findings indicated that forensic psychology professionals are satisfied practitioners.

As stated in the literature, extraversion, conscientiousness, and agreeableness are positively correlated to higher levels of job satisfaction (Ball et al., 2015; Hogan & Chamorro-Premuzic, 2015; Uppal et al., 2014). According to Uppal et al. (2014), positive personality characteristics, such as openness, agreeableness, and conscientiousness, were indicative of higher levels of job satisfaction. Consistent with these findings, forensic psychology professional surveyed in this study scored highest on openness, agreeableness, and conscientiousness scales. These scores were 30.6%, 12.2%, and 40.8%, respectively. Individuals with positive personality traits, such as openness, tend to cope with job-related stress in productive ways (Uppal et al., 2014). The findings from this research are consistent with existing literature in that the study population scored moderate to high on the job satisfaction scale in addition to scoring high on positive personality traits. Survey respondents scored highest on conscientiousness and openness with 40.8% and 30.6%, respectively. As described in the literature review, individuals who are more open, extraverted, and agreeable are more tolerant and adaptable to stressful situations and, therefore, more likely to be satisfied in their careers (Uppal et al., 2014).

Sociodemographic factors were used as covariates for this research as well. As stated in the literature, gender often plays a role in the workplace (Tanwar & Prasad, 2016; Wiernik, 2016). Women are generally more satisfied in their careers than men

(Janssen & Backes-Gellner, 2016). Both Elliott and Daly (2013) and Janssen and Backes-Gellner (2016) found women to be more satisfied professionally. Although women are typically more satisfied in their careers, this result was not supported by the findings of this study. There were no statistically significant differences in the study population with respect to gender. The current findings indicated both genders were equally satisfied with the profession. Similarly, age was not shown to impact job satisfaction. Irrespective of profession, job satisfaction tends to decrease with age and years of experience (Atefi et al., 2015; Tschopp et al., 2013). In contrast to the current literature, job satisfaction did not decrease with advanced age or the number of years in practice.

Interpretations Based on Theoretical Framework

In the current study, an adaption of the ZPD theory and Holland's theory of career choice were applied to forensic psychology instruction to assess the degree to which personality and learning models interrelate in forensic psychologists. This study adapted the ZPD theory by examining the application of gained knowledge on job satisfaction in an adult professional population. Based on the current findings, there was no statistically significant relationship between respondents trained using PBL versus those trained using a lecture-based model. This finding illustrated average to moderate job satisfaction for PBL and lecture-based modalities with mean scores of 4.13 and 3.90, respectively.

The ZPD theory speaks to learning and personality. Future adaptions to this theory may benefit from the incorporation of more dynamic approaches addressing a learner's style by further expanding on the collaborative learning process. For example, some individuals may only be able to accomplish learning through assistance whereas

others struggle with this concept. The focus on skills and abilities being built on what an individual does well may allow future practitioners to focus on better alignment with positive personality characteristics.

Future vocational psychology work can expand on Holland's typologies by providing additional real-world examples and specializations. Holland's current typologies paint psychology with a broad brush and may not accurately reflect subspecializations in the field. Holland's theory categorized individuals in the psychology/psychologist profession as social and artistic. The current study findings did not align with these categories. Although approximately 55% of respondents identified as artistic, the population surveyed identified as investigative, scoring about 37% in that typology. The artistic typology scored as one of the lowest, with only 4% of respondents identifying with that typology. The degree to which personality and vocation match can predict how satisfied individuals will be with their jobs; the greater the match, the better they will perform at those jobs (Lounsbury et al., 2014). The moderate job satisfaction scores for this study indicated participants fit their chosen careers well. This study targeted U.S.-based forensic psychology professionals over the age of 18; the results of this study are not generalizable beyond this population. However, it was assumed that the study population would suggest certain personality characteristic about forensic psychology professionals. In order to be truly representative, a larger sample population would have been necessary.

Limitations of the Study

There were several limitations in this study. The sample size for this study was smaller than anticipated. The biggest drawback is that small sample sizes can reduce the statistical power and make it difficult to determine the statistical significance of relationships. This study also relied solely on self-reported data. The findings may be inaccurate if respondents do not honestly respond to survey questions, particularly those for the personality scales. The current study was limited to U.S.-based forensic psychology professionals. Including international practitioners may have increased the number of survey respondents by reaching out to a larger audience.

Another limitation is the length of the survey which likely contributed to the smaller than anticipated response rate. Survey respondents often experience fatigue when they feel surveys are too long. When respondents become fatigued, they may select neural or non-committal response such as "don't know" more often in an effort to complete the survey more quickly. Subsequently, data quality deteriorates, the number of incomplete questions increases, and motivation wanes towards the end of the survey (Lavrakas, 2008). The survey consisted of 352 questions. Although the majority of respondents were able to complete the survey in 20 to 30 minutes, they may have suffered from survey fatigue.

Recommendations

This study specifically focused on personality and job satisfaction in an under researched population, forensic psychology professionals, an area not currently addressed in extant literature. Future researchers can expand on these findings. They can survey a

larger population thereby addressing a limitation to the current study. This study was restricted to U.S.-based practitioners. Moving forward it may be very beneficial to expand the inclusion criteria to international participants to confirm the current findings and provide additional statistical analysis with a larger data set. Additionally, the current findings illustrated forensic psychologist possess a personality typology which differs from psychology as a whole. Further research into the specific personality profile of forensic psychologists would be beneficial as it may shed light on why this population has moderate job satisfaction despite working under stressful conditions.

The findings from the study provide data illustrating a wide range in years of experience and age exists in forensic psychology. The ages of the respondents ranged from 22 to 72. Future researchers may want to stratify job satisfaction by age groups to determine if a relationship exists between learning, job satisfaction, and age. For example, there may be benefit in researching the role demographic cohorts, such as Millennial, Baby boomer and Generation X, play in job satisfaction in forensic psychology professionals. Furthermore, additional studies should be conducted to get a better understanding across all forensic psychology with a larger population and conduct more in-depth analysis and examine additional covariates.

Implications

Many forensic psychologists are in private practice creating an atypical employment situation. They set their own hours and have greater control in determining their own workload leading to higher levels of satisfaction. Further researchers may want to examine the role independent practice plays on job satisfaction and why some are

better suited based on personality. This fact may contribute to higher than expected levels of job satisfaction irrespective of training modality in the current study population.

Social Change

On an organizational level, positive social change implications may include an increased awareness of which personality types are better aligned to the forensic psychology profession. Moreover, the findings from this study may lead future researchers to define a personality typology specifically for forensic psychology as a vocation thereby promoting student self-efficacy and learning. Students' learning experiences may improve if curriculum developers take innate human differences into consideration when designing courses, particularly those offered to adult learners. Finally, this study can contribute to social change by giving educators the opportunity to realize that vocational personality is important and should be a part of the teaching process. Furthermore, future forensic psychologists who are aware of their personality type may be better informed about what career to pursue and ultimately more satisfied in their careers.

Conclusion

How well the individual fits the environment is as important as how well the individual fits their chosen career. Forensic psychology professionals trained using the PBL model are about as satisfied with their careers as practitioners taught under the lecture-based model. Forensic psychology is composed of individuals with different backgrounds and specializations. Given this diversity, it would be expected that wide ranging levels of job satisfaction and personality typologies exist. In actuality, the

population sample was quite similar in overall job satisfaction ratings for both PBL and lecture-based. While no statistically significant relationship was found in this study regarding personality, training, and job satisfaction, the individuals surveyed were very satisfied with their career choice.

Future researchers may seek to compare forensic psychology to the larger field of psychology or other sub specializations to better elucidate how different RIASEC personality typologies impact job satisfaction. Furthermore, additional research is needed to substantiate whether the social and investigative typologies found in the current study population exist in the broader field of forensic psychology.

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Appendix A: Participant Demographic Questions

Participant demographics

1. Age: _____
2. Gender: Male _____ Female_____
3. Years of experience: _____
4. Are you a forensic psychology professional: Y_____ N_____?
5. Do you practice/work in the United States: Y_____ N_____[If no, survey ends]?
6. Are you licensed in the United States: Y_____N_____?
7. Degree type: PsyD _____ PhD _____ Other _____

   (please explain) _____

8. Please select the training model that best aligns with your forensic psychology instruction

   Problem based Learning _____ Lecture-based learning _____ Other (please explain)_____

Definitions:

Problem based Learning is described as a method of instruction where learning is based upon problem solving real-world scenarios to assist students in acquiring contextual work-related knowledge (Day & Tytler, 2012).

Lecture-based learning is described as approach to instruction predicated upon more passive learning, where students are taught through observation and didactic lectures (Li et al., 2013

Appendix B: MSQ Survey Questions

Appendix C: Preliminary License Agreement to Use NEO-FFI-3 and SDS-R

I am happy to prepare a License Agreement for you to administer the NEO-FFI-3 and SDS Form R 5th Edition online. The royalty/license fee is $2.40 per administration for the NEO-FFI-3 and $2.43 per administration for the SDS. These fees include a 40% graduate student discount. This price is valid until the end of 2017.

*Please note that you will be required to purchase the materials before PAR will enter into a License Agreement to have the NEO-FFI-3 online. Once you have purchased the NEO-FFI-3 and SDS materials, p*lease let me know if you would like me to send you an agreement for 200 online administrations.*

Make sure you request a sample copy of the protocol, since the Manual will not automatically come with one.

I look forward to hearing from you.

Sincerely,