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## **The Influence of Emotional Intelligence Training on College Student Employee Workforce Readiness**

Wynde Jones

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THE INFLUENCE OF EMOTIONAL INTELLIGENCE TRAINING ON COLLEGE  
STUDENT EMPLOYEE WORKFORCE READINESS

by

Wynde Jones

A Dissertation  
Submitted to the Graduate School,  
the College of Arts and Sciences  
and the School of Interdisciplinary Studies and Professional Development  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

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## ABSTRACT

Working while enrolled in college has become routine for the Millennial college student (Riggert, Boyle, Petrosko, Ash, & Rude-Parkins, 2006). Approximately 14 million students in the United States work and attend college simultaneously (Carnevale, Smith, Melton, & Price, 2015). Millennials graduate and infiltrate the workforce, now composing half of the U. S. labor market (Calk & Patrick, 2017). Yet, a mismatch between employer and new graduate's competencies occurs in the workplace. While Millennials view themselves as workforce ready, employers see them as unprepared and lacking the necessary skills for success in the workplace (Jaschik, 2015). Many Millennial college graduates do not possess the soft skills needed to be successful in the workforce (MacDermott & Ortiz, 2017). Employers seek soft skills, communication, teamwork, critical thinking, and emotional intelligence in Millennial graduates (Schneider, 2015). Soft skills connect to the emotional intelligence of individuals, impacting their workforce readiness (Ritter, Small, Mortimer & Doll, 2018).

This study utilized experimental research and employed a Solomon four-group design. The study used two instruments in pretest and posttest analysis to determine the influence of emotional intelligence training on college student employees. Five research objectives grounded the research. Although the findings from this study do not support previous research regarding emotional intelligence training, stress management subscores indicate an area for further analysis. Additional research on college student employees across multiple higher education institutions has the opportunity to create further implications.

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## DEDICATION

To the person who believed in me first and whose words of encouragement I still hear in my head, years after your voice has faded from memory. Thank you, Mom.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGMENTS .....	iv
DEDICATION .....	vi
LIST OF TABLES .....	xiii
LIST OF ILLUSTRATIONS .....	xiv
LIST OF ABBREVIATIONS .....	xv
CHAPTER I - INTRODUCTION .....	1
Background .....	2
Statement of the Problem .....	4
Purpose of the Study .....	5
Research Objectives .....	6
Conceptual Framework .....	6
Significance of the Study .....	8
Delimitations .....	10
Assumptions .....	10
Definition of Terms .....	11
Summary .....	12
CHAPTER II – REVIEW OF RELATED LITERATURE .....	13
The College Student Employee .....	14



Mannheim’s Generational Theory .....	14
Generational Differences .....	15
Silent Generation .....	16
Baby Boomers.....	17
Generation X.....	19
Millennial Generation .....	20
College Student Employees .....	24
Workforce Readiness .....	25
Human Capital Theory.....	26
Workforce Readiness Shortfall .....	26
Employer Perspectives of Workforce Readiness .....	28
Student Perspectives of Workforce Readiness .....	30
Soft Skills.....	32
Emotional Intelligence .....	34
Emotional Intelligence Theory .....	34
History of Emotional Intelligence.....	35
Divide in Emotional Intelligence Research .....	37
Models of Emotional Intelligence.....	39
Business Applicability .....	41
Emotional Intelligence and Performance.....	42

Emotional Intelligence and College.....	45
Summary .....	47
CHAPTER III - RESEARCH METHODOLOGY .....	49
Research Objectives.....	50
Research Design.....	51
Population and Sample .....	53
Instrumentation .....	55
EQ-i 2.0.....	55
Work Readiness Inventory.....	57
Validity and Reliability of the Instruments.....	59
Confidentiality .....	61
Protection of Human Subjects .....	61
Data Collection .....	62
Data Analysis .....	67
Descriptive Statistics and Comparison of Means .....	68
Mann-Whitney U and Wilcoxon signed-ranks test.....	68
Threats to Validity and Reliability.....	71
Internal Validity .....	71
External Validity.....	71
Reliability.....	72

Limitations .....	73
Length of the Instrument.....	73
Self-Reporting Data .....	73
Participant Bias .....	73
Pretest Sensitization and Solomon four-group design.....	74
Generalizability.....	75
Summary .....	75
CHAPTER IV – RESULTS.....	76
Data Results .....	78
Research Objective One (RO1) .....	79
Research Objective Two (RO2).....	82
Research Objective Three (RO3).....	89
Solomon Four-Group, Test A .....	90
Solomon Four-Group, Test B .....	92
Solomon Four-Group, Test C .....	94
Solomon Four-Group, Test D .....	96
Four Test Summary.....	97
Wilcoxon Signed-Rank test .....	97
Research Objective Four (RO4).....	100
Research Objective Five (RO5) .....	105

Solomon Four-Group, Test A .....	106
Solomon Four-Group, Test B .....	107
Solomon Four-Group, Test C .....	108
Pretest Summary .....	109
Summary .....	109
CHAPTER V – FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS .....	111
Limitations .....	112
Findings, Conclusions, and Recommendations .....	113
Finding One .....	114
Conclusions.....	114
Recommendations.....	115
Finding Two.....	116
Conclusions.....	116
Recommendations.....	117
Recommendations for Further Research.....	118
Discussion .....	119
Summary .....	121
APPENDIX A – EQ-i 2.0 .....	123
APPENDIX B – Work Readiness Inventory .....	124
APPENDIX C – Informed Consent for Training.....	125

APPENDIX D – Vice President’s Letter .....	126
APPENDIX E – Department Communication to Students.....	127
APPENDIX F – Reminder 1 .....	128
APPENDIX G – Reminder text 1 .....	129
APPENDIX H – Training email 1 .....	130
APPENDIX I – Training email 2.....	131
APPENDIX J – Follow-up email.....	132
APPENDIX K –Follow-up text .....	133
APPENDIX L – Update email to Departments .....	134
REFERENCES .....	135

## LIST OF TABLES

Table 1 EQ-i 2.0 Scales and subscales.....	56
Table 2 Survey Map.....	59
Table 3 Data Collection Plan .....	65
Table 4 Data Analysis Plan.....	70
Table 5 Illustration of Participant Groups .....	79
Table 6 Participant Demographics for Nominal Data.....	80
Table 7 Participant Demographics for Interval Data .....	81
Table 8 Participant pretest and posttest scores from the EQ-I 2.0.....	82
Table 9 Participant pretest scores from the EQ-i 2.0 disaggregated by group .....	85
Table 10 Participant posttest scores of the EQ-i disaggregated by group .....	87
Table 11 Test A of Pretest Effects .....	90
Table 12 Test B of Pretest Effects .....	93
Table 13 Test C of Pretest Effects .....	94
Table 14 Test D of Pretest Effects .....	96
Table 15 Wilcoxon's Signed-Rank Test Results .....	98
Table 16 Participants across all groups pretest and posttest scores from the WRI.....	101
Table 17 Participant pretest scores from the WRI disaggregated by group .....	102
Table 18 Participant posttest scores from the WRI disaggregated by group.....	104
Table 19 Test A of Pretest Effects .....	106
Table 20 Test B of Pretest Effects .....	107
Table 21 Test C of Pretest Effects .....	108

## LIST OF ILLUSTRATIONS

<i>Figure 1.</i> Conceptual Framework. ....	8
<i>Figure 2.</i> Solomon Four-Group design.....	53
<i>Figure 3.</i> Solomon Four-Group design and four-test process .....	69

## LIST OF ABBREVIATIONS

<i>AACU</i>	Association of American Colleges and Universities
<i>ACT</i>	American College Testing
<i>USM</i>	The University of Southern Mississippi
NACE	National Association of Colleges and Employers
HERI	Higher Education Research Institute
MSCEIT	Mayer-Salovey-Caruso Emotional Intelligence Test
ATD	Association of Talent Development
WRI	Workforce Readiness Inventory
EI	Emotional Intelligence



## CHAPTER I - INTRODUCTION

“Don’t fall for the myth that soft skills are too intangible to improve with concrete methods” (Tulgan, 2018, p. 1).

Working while learning emerges as the new normal for Millennials (Carnevale, Smith, Melton, & Price, 2015). Nearly 70% of college students work at least part-time while attending college (Rapacon, 2015). Data shows that almost 14 million college students work part-time while enrolled (Kozinsky, 2017). Yet, college student employees are not ready for the workforce upon graduation (Association of American Colleges & Universities, 2015; Forbes Human Resource Council, 2017; Jaschik, 2015; Jenkins, 2017). Only 23% of employers report new employees as prepared for the workplace, especially with the soft or interpersonal skills necessary for success (Jaschik, 2015). Employers seek graduates with skills such as critical thinking, leadership, communication, and basic interpersonal skills (Strauss, 2016). Soft skills include abilities that allow individuals to utilize both interpersonal and personal characteristics (Robles, 2012). Employers assert these soft skills are as crucial to success as the traditional skills or knowledge needed for the technical aspects of the job (Jaschik, 2015).

Soft skills are most often associated with emotional intelligence in the workplace (Goleman, Boyatis, & McKee, 2002). Emotional intelligence is defined as understanding and managing one’s emotions, coupled with recognizing similar emotional cues from others (Birajdar, 2016). In Landrum’s 2017 study, 80% of millennials intentionally focus on emotional intelligence to advance careers (Landrum, 2017). Millennials, born between 1980-2000, presently make up the most significant portion of the workforce (Calk & Patrick, 2017). The millennial generation of new employees may be

underprepared for the workforce yet view themselves as ready to contribute to the work environment (Jaschik, 2015). Fifty-six million millennials populate the workforce, impacting business operations across the globe (Lewis & Wescott, 2017). Subsequently, shifts in generations in the workplace affect the culture and functioning of the overall workforce (Lewis & Wescott, 2017).

### Background

Generations are cohorts with shared values and experiences from a specific time that sets one group apart from another (Zabel, Biermeier-Hanson, Baltes, Early, & Shepard, 2017). While debates continue regarding date ranges of each generational cohort, an agreement exists that four generations work side by side in the workforce today (Meuse & Mlodzik, 2010). The four generations in the modern workforce include Millennials, Generation X, Baby Boomers, and the Silent Generation (Schullery, 2013). Millennials, sometimes called Generation Y, make up half of the workforce (Lewis & Wescott, 2017). The first digital natives in the workplace, Millennials grew up with pervasive technology (Lewis & Wescott, 2017). Millennials, needing constant feedback and focusing on the individual instead of teamwork (Venter, 2017), manage relationships digitally and are characterized by multitasking in the office (Bencsik, Horváth-Csikós, & Juhász, 2016). Millennials may struggle with face-to-face communication and a desire for work-life balance (Venter, 2017). Understanding how Millennials prepare for work bridges crucial gaps in the workplace. Insight into the Millennial journey to the workforce helps educators and employers understand the challenges this generation faces (Meuse & Mlodzik, 2010). Identifying influencing factors supports the understanding of the workforce readiness of Millennials (Bencsik et al., 2016).

While generational differences provide the workplace with opportunities for growth, these variances also offer challenges (Lester, Standifer, Schultz, & Windsor, 2012). The Association of American Colleges and Universities (AACU) report, employers, reveal a lack of confidence in workforce readiness of Millennial college graduates (Schneider, 2015). Employers report that graduates lack competency in the areas of teamwork, oral and written communication, critical thinking, ethical decision-making, and the application of real-world knowledge (Schneider, 2015). The James G. Martin Center for Academic Renewal reports that 60% of employers surveyed indicate they believe college graduates lack the necessary critical thinking skills for success (Jenkins, 2017). The report suggests recent graduates do not have the emotional acumen to rationalize and the mental discipline to analyze problems (Jenkins, 2017). The AACU report reveals the skills mentioned in the survey as equally important to employers as those acquired through classroom instruction in a discipline (Jaschik, 2015). College graduates lack soft skills. Soft skills often associate with out of classroom learning and serve as fundamentals of emotional intelligence (Goleman, 1995).

Emotional intelligence identifies as the ability to internalize one's own emotions and manage others' emotions (Berrocal & Extremera, 2006). Emotional intelligence focuses on the processing of information. Goleman (2003) identifies emotional intelligence as a developing skillset. These abilities can grow and change throughout one's life (Goleman, 2003). Early work on emotional intelligence by Mayer, Salovey, and Caruso (2004) characterizes emotional intelligence as the ability to understand and control one's emotions and distinguish the different displays of other's feelings. Mayer et al.'s (2004) research shows emotional intelligence may connect to success or failure in

the workplace. Goleman's (1995) model of emotional intelligence categorizes the abilities into four areas: (a) self-awareness, (b) self-management, (c) social awareness, and (d) relationship management.

Individuals with higher emotional intelligence may have better social outcomes, relationships, and abilities to lead (Mayer, Salovey, & Caruso, 2008). Emotional intelligence remains a valuable aspect of leadership and a predictor of effective leaders (Doe, Ndinguri, & Phipps, 2015). Dynamic leadership links to emotional intelligence (Abraham, 2006). Much like standardized test scores and grade point average (GPA), emotional intelligence can predict success (Jaeger & Eagan, 2007). The debate centers on the ability to modify the emotional intelligence of individuals and its impact on the individual success (Jaeger & Eagan, 2007). Nevertheless, research shows emotional intelligence (Becker, 1994) can be taught and learned (Liptak, 2005). Programmatic interventions in the workplace to enhance emotional intelligence can help one to develop soft skills and manage and use emotions effectively (Jaeger & Eagan, 2007).

#### Statement of the Problem

When student employees have high emotional intelligence and arrive prepared for the workforce, organizations benefit. One can develop soft skills often not acquired through classroom instruction (Caldwell, 2018; Gonyea & Kozak, 2014; McGraw Hill Education, 2017). Soft skills link to elevated emotional intelligence (Ritter, Small, Mortimer, & Doll, 2018). Employees with the emotional acumen to rationalize and the mental discipline to analyze problems are often prepared with soft skills necessary for the workplace (Jenkins, 2017).

Student employees lack emotional intelligence, and employers do not perceive them as prepared for the workforce. Employers indicate a lack of confidence in the preparedness of college students (Jaschik, 2015). Recent graduates do not acquire soft skills in college required to meet the expectations of potential employers (Strauss, 2016). Higher education faces scrutiny by business leaders to produce graduates with soft skills (Ritter et al., 2018). While recent graduates perceive themselves as ready for the workplace, deficits in soft skills indicate a lack of preparation (Jaschik, 2015). Student employees lack emotional intelligence; therefore, job preparedness suffers. Employers view likely underprepared recent graduates in the workforce as unprepared (Jenkins, 2017). This mismatch between potential employees and employers, causes both to experience disadvantages in the workplace (Jenkins, 2017). Soft skills, often associated with emotional intelligence, are more challenging to measure and quantify, making it difficult to determine a return on investment for organizations (Robles, 2012).

### Purpose of the Study

The purpose of the study is to identify the influence of emotional intelligence training on student employees' individual emotional intelligence and their perception of workforce readiness. As the Millennial generation permeates the workforce, employers seek to understand the emotional intelligence of employees. Emotional intelligence directly relates to the soft or interpersonal skills necessary to succeed in the workplace (Forbes Human Resource Council, 2017). Research shows emotional intelligence can be taught, impacting the application of soft skills in the workplace (Chee & Choong, 2014). Improving workforce readiness of recent graduates closes the soft skills gap and could lead to a more successful workforce (McNamara, 2009).

## Research Objectives

Five research objectives guide this study. The review of related literature directs the following research objectives.

RO1: Describe the demographic characteristics of the study's participants, including age, gender, and student employment position.

RO2: Identify the emotional intelligence of student employees.

RO3: Compare the emotional intelligence of student employees with emotional intelligence training to student employees without emotional intelligence training.

RO4: Identify perceived workforce readiness of student employees.

RO5: Compare the perceived workforce readiness of student employees with emotional intelligence training to student employees without emotional intelligence training.

## Conceptual Framework

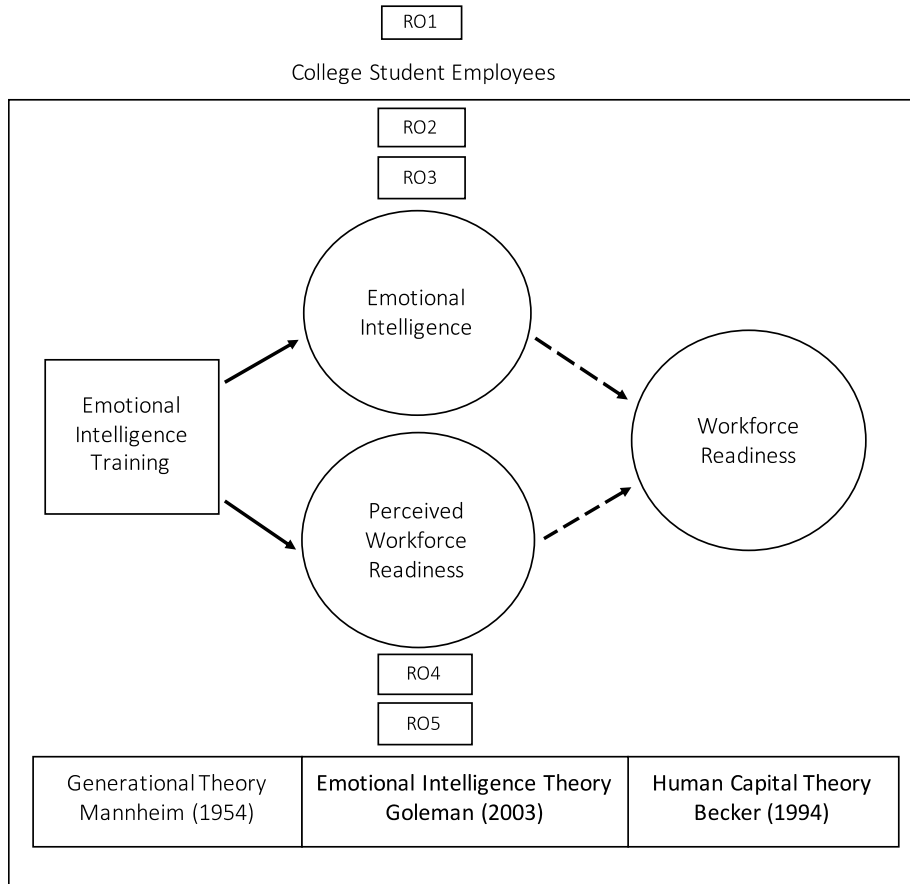
The study's conceptual framework, shown in Figure 1, depicts the relationship between university student perceptions of workforce readiness, college student emotional intelligence, and the influence of emotional intelligence training. The research objectives clarify the purpose of the study. The first research objective identifies the demographic characteristics of the participants, including age, gender, classification, ethnicity, and student employment position. The second objective provides a baseline score of emotional intelligence (Mannheim, 1952) for the test and control groups of student employees involved in the study. The third objective compares the emotional intelligence data of the groups post participation in emotional intelligence training. The

fourth objective identifies the perceived workforce readiness of the groups. The final objective compares the perceived workforce readiness of the groups post participation in emotional intelligence training.

Guiding theoretical perspectives include involvement theory, human capital theory, and emotional intelligence theory. The conceptual framework in Figure 1 illustrates the proposed relationship between the variables; emotional intelligence, emotional intelligence training, and perceived workforce readiness. The model addresses the need to ground the research in theory, by identifying Becker's (1994) human capital theory, Mannheim's (1952) generational theory, and Goleman's (2003) emotional intelligence theory as foundationally supporting the research.

Mannheim's theory grounds the research of generations, identifying both a time period and that social forces shape each generation (Lyons & Kuron, 2014). The theory concludes that a generation constitutes individuals in a specific age group with a group identity built on shared time and events (Padayachee, 2017). A generational community shares tangible bonds and responds to issues and challenges concurring with everyday experiences (Milkman, 2017). Becker's (1994) human capital theory, a quintessential economic theory, explains the relevance of the investment in people as a comparison to the investment in equipment or processes. Becker asserts human capital and training of human capital changes the landscape of a workplace and community (Estrin, Mickiewicz, & Stephan, 2016). Specific skills acquired through experiences, and human capital development can improve through education and experience (Estrin et al., 2016). The theories tie together the possibility of training enhancing not only the perception of workforce readiness but also influencing emotional intelligence.

Goleman's (2003) theory of emotional intelligence model focuses on individual capabilities in the workplace. Goleman's model demonstrates the accelerated use of specific abilities or skills that may enhance an employee's effectiveness at work (Berrocal & Extremera, 2006). Figure 1 illustrates the conceptual framework of the present study.



*Figure 1. Conceptual Framework.*

### Significance of the Study

The study seeks to determine the influence of emotional intelligence on college student employees' workforce readiness. Development of the core principles of emotional intelligence, self-awareness, self-management, social awareness, and relationship management may influence current and future workforce readiness. Soft



skills relate to the principal areas of emotional intelligence. Emotional intelligence training could influence the awareness of and use of the four parts of Goleman's (2003) emotional intelligence model; self-awareness, self-management, social awareness, and relationship management. Research shows emotional intelligence can develop and increase through coaching and training (Goleman, 2003). Heightened emotional intelligence, when intentionally developed, could influence the likelihood of workplace success for student employees and college graduates.

Millennial college graduates entered the workforce seemingly ready to contribute to productivity and the success of their organizations (Schneider, 2015). These graduates find themselves unable to execute tasks directly related to interpersonal or soft skills (Deepa & Manisha, 2013). Research indicates these skills are essential for workplace success and necessary for employee achievement (Sharma, 2009). The study seeks to generate information about the workplace preparedness of Millennials. Producing tangible methods to improve the soft skills of employees, thus improving performance, can significantly impact the global workforce. The significance of isolating approaches and curriculum, which could change how employees execute tasks and accomplish acts could influence productivity for generations to come.

The study's results may link acquired skills and perceptions necessary for success in the workforce to the concept of emotional intelligence. Changes could be made to curricula, and employee training regimens focused on developing emotional intelligence. The results of this study could assist colleges in preparing graduates for the workforce. Workforce ready graduates are essential to universities and employers alike. This study

could supply educational institutions with data to help prepare knowledgeable and skilled graduates for the workforce.

### Delimitations

A delimitation represents a choice made by the researcher that may impact the study (Shadish et al., 2002). Two delimitations exist for this study. The first delimitation of the study concerns the choice of participants. The population for the study of college students, specifically college student employees, serves as a delimitation. This choice of the researcher could impact the generalizability of results from the study. The second delimitation is the choice of objectives. The research objectives drive the research, and this research will not determine actual workforce readiness, only perceived workforce readiness by college students and employers.

### Assumptions

In research, assumptions are the elements of the study accepted as true or at least plausible by peer researchers (Pyrzczak, 2016). These assumptions are recognized as operational necessities of the study (Pyrzczak, 2016). While statistical tests have unique assumptions, those included in this paragraph are assumptions associated with this study. The first assumption of the study is that the instruments used to collect data are both reliable and valid in ascertaining the emotional intelligence and workforce readiness of participants. The second assumption is that college graduates will need to be effective in the workplace to thrive. Another assumption is that participants will answer the questions in the two instruments truthfully.

## Definition of Terms

The operationalized definitions essential to the understanding of this study follow:

1. *Bar-On EQi*-a specific instrument designed by Dr. Reuven Bar-On to measure the emotional intelligence of individuals (Bar-On, 2013).
2. *College student employee*-individual enrolled as a college student and working on the campus (Odio, Wells, & Kerwin, 2014).
3. *Emotional Intelligence*-the ability to be conscious of and manage one's emotions (Goleman, 1995).
4. *Emotional Intelligence training*-curriculum designed to improve the emotional intelligence capacity of participants (Cherniss, Extein, Goleman, & Weissberg, 2006).
5. *EQ-i-2.0*-a revision of the Bar-On EQi used to measure emotional intelligence (Multi-Health Systems, 2018).
6. *Millennials*-generation identified as born from 1980-2000 (Lewis & Wescott, 2017).
7. *Soft Skills*-interpersonal skills (Robles, 2012); specific skills such as communication, teamwork, leadership, and critical thinking (Rateau, Kaufman & Cletzer, 2015)
8. *Workforce readiness*-an individual's readiness for contribution to the work environment (Jaschik, 2015).
9. *Workforce Readiness Inventory (WRI)*-instrument designed to determine the individual's perceived readiness for the workforce (Career Readiness JIST, 2010).

## Summary

Millennial college students work in record numbers while enrolled in college (Rapacon, 2015). While Millennials view themselves as prepared for the workplace, industry leaders state new graduates arrive deficient in emotional intelligence and soft skills (Jaschik, 2015). Teaching skills embedded with emotional intelligence factors can improve emotional intelligence (Scott-Halsell, Shumate, & Blum, 2008). Research indicates emotional intelligence increases when training and education are applied (Sadri, 2012). The enhancement of one's emotional intelligence has the potential to impact success in the workplace (Goleman, 2003). Bridging the gap between college graduate skills and employer's expectations of those graduates remains vital in today's workplace (Strauss, 2016).

## CHAPTER II – REVIEW OF RELATED LITERATURE

In this chapter, research supporting the study is discussed. College student employees, workforce readiness, and emotional intelligence research undergird the study. The chapter contains current research, a historical framework, and information about the challenges of the present-day workplace. Three theories, Mannheim's generational theory, Becker's human capital theory, and Goleman's emotional intelligence theory, serve as the foundation of each research area. The research presented in this chapter communicates the underpinnings of the study.

The average Millennial college student works 20 to 30 hours a week (Broton, Goldrick-Rab, & Benson, 2016). The increase in student employees, three out of four working while enrolled, occurs because of the rise in college costs (Broton et al., 2016; Hall, 2010). Nearly 14 million students work while enrolled in classes (Carnevale et al., 2015). The Millennial student, born between 1980-2000, transitions from the classroom to the workplace, making up nearly half of the current labor force (Lewis & Wescott, 2017). In the workplace, Millennials prefer to communicate via technology instead of face to face like prior generations, Baby Boomers (Venter, 2017). A desire for connection drives Millennials but poses a challenge of how to connect them to work for employers (Lester, Standifer, Schultz, & Windsor 2012).

Millennials perceive themselves ready for the workforce while employers report deficiencies in soft skills (Schneider, 2015). Soft skills encompass a wide variety of skills, including communication, teamwork, leadership, and emotional intelligence (Deepa & Manisha, 2013). Mastering soft skills and managing one's emotional intelligence leads to success in the workplace (Goleman, 1998). Understanding the

strengths and weaknesses of the Millennial generation places employers in a position to adopt practices and policies for sustained growth (Calk & Patrick, 2017).

### The College Student Employee

More college students, made up of today's Millennial generation, work while attending school than prior generations (Zabel, Biermeier-Hanson, Baltes, Early, & Shepard, 2017). College student employees comprise eight percent of the total United States labor force (Carnevale et al., 2015). Working while learning in college has become routine for college students (Lee & Setari, 2017). One of the keys to understanding the Millennial college student employee includes identifying their shared experiences that define them (Meuse & Mlodzik, 2010). The theory which supports generational research and its impact on culture culminated in a 1952 text by Karl Mannheim (Hsiao & de Castro Casa Nova, 2016).

### *Mannheim's Generational Theory*

Mannheim's early work on generations serves as seminal sociological research from which subsequent generational research originates (Parry & Urwin, 2011). The theory Mannheim created concludes that a generation occurs when individuals in an age group share not only experiences but also thought (Padayachee, 2017). Lyons and Kuron (2014) cite Mannheim's generational theory as one which classifies a generation as an instrument for change. The theory contends each generation faces cultural norms and either accepts or rejects the standards. The group identity of generation roots in the concept of shared time and shared events (Padayachee, 2017).

The Mannheim theory articulates experiences that link members of a generation and bonds them because of the way the group reacts to everyday encounters (Parry &

Urwin, 2011). The theory also states generations form through specific socio-historical locations, and thereby faulty to impose the United States' generational descriptions on other nations (Lyons & Kuron, 2014). Parry and Urwin cite Mannheim's five characteristics of a generation:

New participants in the cultural process are emerging; former participants are continually disappearing; members of a generation can participate in only a temporally limited section of the historical process; so, cultural heritage needs to be transmitted; and finally, the transition from generation to generation is continuous. (Parry & Urwin, 2011, p. 81)

Subsequent studies of generations in academia and popular press allude to Mannheim's original theory of generations (Parry & Urwin, 2011).

### *Generational Differences*

A multitude of definitions explains generations in the literature (Meuse & Mlodzik, 2010). Each generation can be described by specific instances in history, years of birth, or shared experiences (Meuse & Mlodzik, 2010). Literature supports generations as cohorts defined by the values and experiences of a specific time setting and set one group apart from another (Zabel et al., 2017). A cohort refers to those individuals born within a particular period. While a generation can be defined by shared experiences of a group of people, members may also share experiences from a specific time-period (Cutler, 2015).

Characterized by specific events, relative to the culture one grows up in, generations may differ from those in the United States to those in Asian or European countries because they reflect local and cultural experiences (Zabel et al., 2017). Each

generation, marked by specific events and characteristics, remains influenced by instances and events occurring during maturation (Cates, Cojanu, & Pettine, 2013). The attributes of generations are general and not definitive for all members of each cohort (Venter, 2017).

Labels for generations vary in the literature. The Pew Research Center (2018) defines each generational cohort by the following names and birth years: the Greatest Generation born 1927 and earlier, the Silent Generation born 1928-1945, the Baby Boomers born 1946-1964, Gen-Xers born 1965-1980 and Millennials born after 1980. The Pew Research Center (2018) identifies those born in 1997 and after as a Post-Millennial generation, yet to be named. The U.S. States Census Bureau estimates the Baby Boomer generation at 75.4 million and recently outnumbered by the Millennial generation at 83.1 million (U.S. Census Bureau, 2015). The literature identifies four generations currently in the workforce, Silent Generation, Baby Boomers, Gen-Xer's, and Millennials (Lyons & Kuron, 2014). While popular press touts the differences between generations, peer-reviewed literature warns against accepting broad generalities for cohorts (Meuse & Mlodik, 2010). Venter (2017) states generational differences should be valued and respected for the bridging of generational gaps to occur.

### *Silent Generation*

Current generation understanding informs a general comprehension of other generations (Lyons & Kuron, 2014). The Silent Generation comprises the smallest portion of today's workforce. Many members of this generation meet retirement age requirements (Lewis & Wescott, 2017). This group, characterized by loyalty to supervisors and companies in the workplace, has a strong work ethic reputation and



focuses on a simplistic view of country, religion, and family (Lewis & Wescott, 2017). Members of this generation in the workforce today respond to direct instruction and prefer clear direction (Cates, Cojanu, & Pettine, 2013). Silent Generation members separate home and work environments (Cates et al., 2013). The Silent Generation suffered through economic depression and the spoils of war (Beutell & Wittig-Berman, 2008). This generation derives its identity from a time of struggle and sacrifice (Cates et al., 2013). Members identify as individuals with traditional family values and gender-specific expectations of family roles (Beutell & Wittig-Berman, 2008). A 2015 survey reveals Silent Generation members view themselves as hard-working, responsible, and willing to sacrifice (Pew Research Center, 2015). The Silent Generation typically enters retirement with a fun and satisfied lifestyle after years of service in the workforce (Beutell & Wittig-Berman, 2008).

### *Baby Boomers*

As the Silent Generation retired and left the workplace, Baby Boomers took on new roles in the workforce, becoming the most engaged employees (Schullery, 2013). The assassinations of Robert Kennedy, John F. Kennedy, and Martin Luther King shape the Baby Boomer generation. Baby Boomers witnessed first-hand the birth of the women's movement in the United States, the fight for civil rights, and a man walking on the moon (Beutell & Wittig-Berman, 2008). Baby Boomers observed historical events like the Vietnam War, Woodstock, Watergate, and the sexual revolution (Cates et al., 2013). Boomers were the first generation to watch their world change on television (Schullery, 2013). In 1950, only 12% of households owned a TV, and by 1958, 83% of households had one (Schullery, 2013). Families would gather around the television

together and watch programming, much like the Silent Generation would gather around the radio (Schullery, 2013).

Considered more selfish than the Silent Generation, Baby Boomer's welcome competition in the workplace (Lewis & Wescott, 2017). Boomers prefer more energetic and focused leaders, seeking direction and motivation (Lyons & Kuron, 2014). Members tend to view work as fun or an adventure. Boomers want leadership that values teamwork and a collegial atmosphere (Cates et al., 2013). Boomer leaders boast investment in their employers and serve in long term roles in many workplaces (Zabel et al., 2017).

While each generation defines their means of communication differently, Boomers thrive in environments that value one-on-one interaction (Venter, 2017). Digital immigrants, Baby Boomers prefer communication verbally over written text messages or email (Venter, 2017). Traditionally, Boomers seek compromise in the workplace and approach challenges with a mindset to focus efforts for optimum workplace performance (Lester, Standifer, Schultz, & Windsor, 2012). Boomers are typically loyal to employers and work-life (Zabel et al., 2017). Teamwork appeals to Boomers, but financial compensation and promotion motivate them (Lester et al., 2012). Boomers prefer to serve in leadership roles and enjoy serving as decision-makers (Cates et al., 2013). The highest priority for Boomers over non-work life and even family remains work (Lester et al., 2012). Baby Boomers do not seek work-life balance (Cates et al., 2013). Boomers view Gen Xer's desire for strong family ties over work priorities as challenging in the workplace (Beutell & Wittig-Berman, 2008).

## *Generation X*

The sheer size of the Baby Boomer generation overshadows Generation X, leaving the group proverbially nameless (Beutell & Wittig-Berman, 2008). The first Iraq War, the Clinton sex scandal, the emergence of HIV/AIDS, and school shootings impacts the values and beliefs of Generation X (Zabel et al., 2017). Generation Xer's experienced forward strides in civil rights and feminism, the fall of the Soviet Union, the emergence of technology, and the rise of the United States as an economic powerhouse (Cates et al., 2013). Gen Xers grew up entertaining themselves until parents returned from work and subsequently identified as latchkey kids. These latchkey kids were home alone after school and referred to as latchkey because of the keys worn around their necks to unlock the door to their homes while parents were at work (Lewis & Wescott, 2017). Generation X experienced changes in traditional family dynamics and witnessed the emergence of single-family homes due to divorce. A birthrate decrease of 15% in Generation X reflects shifts in the family unit (Schullery, 2013). These shifts include Gen Xer's delaying marriage, waiting longer to commit, and returning to parent's homes as divorce rates soared (Zabel et al., 2017).

Members of Generation X chose to postpone formal commitments and, subsequently, either had children later in life or decided not to have children at all (Zabel et al., 2017). Members of Generation X experienced changes, not just at home but also in the workplace. Many Gen Xers joined the workforce after downsizing occurred due to the recession of 2007-2010 (Lewis & Wescott, 2017). More skeptical than generational counterparts, individual desires motivate Gen Xer's (Meuse & Mlodik, 2010). Members of Generation X typically enjoy a more relaxed work environment, flexibility, and

autonomy (Lester et al., 2012). More likely to change jobs multiple times during a career, Gen Xer's frequently return to higher education for additional degree attainment (Meuse & Mlodzik, 2010). Gen Xer's may be viewed as having a weaker work ethic than prior generations (Lester et al., 2012). Yet, they see change as part of the work process and work well independently (Lewis & Wescott, 2017). Raised in front of a television, Gen Xer's view technology as an integral part of life (Zabel et al., 2017). Generation X seeks work-life balance (Lester et al., 2012). Not only do Gen Xer's desire a work-life balance, they expect appreciation of work-life balance from employers (Cates et al., 2013).

Gen Xer's referred to as entrepreneurs enjoy the challenges of working alone (Beutell & Wittig-Berman, 2008). Although members flourish in independent environments, they prefer direct communication and immediate resolution of conflicts (Cates et al., 2013). While Gen Xer's work best with charismatic and direct leaders, Millennials prefer more sensitive and self-aware leaders (Lyons & Kuron, 2014).

### *Millennial Generation*

Millennials enter the workforce filled with high expectations and seek out opportunities to be a part of something larger than themselves (Lewis & Wescott, 2017). While both open-minded and multitaskers, Millennials seek success in the workplace, although not for the same reasons as prior generations. Millennials appreciate success as an intrinsic value linked to personal accomplishment (Bencsik, Horváth-Csikós, & Juhász, 2016). Like past generations, world events shaped the Millennial cohort. The 9/11 terrorist attack, the election of the first African American president, and the second U.S./Iraq war shaped Millennial perceptions (Zabel et al., 2017). Power, prosperity, and

wealth, balanced with the recession of 2007-2010 and political struggles, impact the era in which Millennials grew up (Cates et al., 2013).

After a review of related literature, Farrell and Hurt (2014), determine six basic characteristics of the Millennial generation. Six hallmarks of the generation include the following characteristics: (a) multitaskers, (b) structure seekers, (c) team-workers, (d) attention seekers, (e) overachievers, and (f) technology experts (Farrell & Hurt, 2014). Also, Millennials have high expectations of themselves and are goal-oriented (Lewis & Wescott, 2017). Millennials represent the first digital natives, continually seeking feedback (Venter, 2017). The computer becomes the television of the Millennial generation, engaged continuously with online content (Schullery, 2013). Wotapka (2017) states the importance of distinguishing the difference between technological dependence and technological savviness. While Millennials may be technology-dependent, it does not necessarily translate to individuals being technologically savvy (Wotapka, 2017). Many Millennial relationships occur virtually, requiring management of relationships digitally (Bencsik et al., 2016). Millennials seek constant contact with family, friends, and co-workers, and crave connection through digital relationships (Venter, 2017).

Millennials and their parents share a clear connection. Millennials were protected continuously by their parents and consistently told they were special (Schullery, 2013). Venter (2017) points out the overprotective nature of Millennial parents, which earned them the name helicopter parents. The description of helicopter parents visually depicts parents hovering closely to children as a helicopter would fly close to the ground (Venter, 2017). Because of their need to connect with family, Millennials seek work-life balance (DeVaney, 2015). More than any other generation, work-life balance drives personal

decisions (Zabel et al., 2017). Millennials tend to want a work-life balance that favors family and friends over work commitments (Lester et al., 2012).

Enjoyment grounds work-life for Millennials (Schullery, 2013). Large innovative companies engage the Millennial generation by adding fun elements to the workplace. Google is known for adding a rock wall, a volleyball pit, and a grand piano to its headquarters to attract and keep Millennials engaged in the workplace (Schullery, 2013). Millennials seek organizations that relish a culture supportive of fun in the workplace (Bencsik et al., 2016). Industry leaders search for bright and creative coworkers (Cates et al., 2013).

Millennials desire teamwork and a supervisor leading by participating with the team (Lester et al., 2012). Although Millennials enjoy teamwork, individual goals instead of organizational goals, remain the focus (Calk & Patrick, 2017). Millennials seek transparency in the workplace and thrive in team atmospheres (DeVaney, 2015). Teamwork activities, in terms of training, appeal to Millennials who learn better with their peers involved (Farrell & Hurt, 2014).

Civic duty motivates Millennials (Zabel et al., 2017). A hypersensitivity for social awareness and a global conscience situates Millennials apart from other generations (Cates et al., 2013). Millennials are motivated by flexibility in the workplace and seek a sense of purpose in their work (Lewis & Wescott, 2017). Success in the workplace resonates with Millennials, although not for the same reasons as prior generations (Bencsik et al., 2016). Millennials seek a sense of community in the workplace and do not always respond to hierarchy power structures (Zabel et al., 2017). Yet, members value autonomy, diversity, and positive reinforcement from supervisors

(Calk & Patrick, 2017). Millennials seek recognition and tend to challenge the authority of supervisors who do not acknowledge their perceived value (Venter, 2017). Millennials need structure in the workplace and thrive with clear guidelines and expectations (Wotapka, 2017). They seek nurturing leadership; appreciative of work efforts (Cates et al., 2013). Millennials also desire an experience of continuous learning (Farrell & Hurt, 2014).

Millennials want to learn from work experiences and to gain knowledge to contribute to the overall goals of an organization (DeVaney, 2015). Wotapka (2017) describes Millennials as a group immersing themselves in environments to create change. Due to the diversity of their peers, Millennials challenge traditional values and perceptions constantly (DeVaney, 2015). Millennials seek cultural change in the workplace. Literature suggests Millennials are more likely to engage in activities centered on paradigm shifts (Farrell & Hurt, 2014). Socially aware Millennials seek to change not only in the workplace but also in the world around them (Cates et al., 2013).

Today's workplace looks very different, as Millennials now make up half of the population in the workforce (Lewis & Wescott, 2017). The Millennial workforce is expected to reach 38.8 million by the end of 2018 (Calk & Patrick, 2017). The United States' most racially diverse generation, 47% of the Millennial group, identifies as an ethnic minority (DeVaney, 2015). Characterized as open-minded individuals, traditional values do not bind them (Bencsik et al., 2016). Conventional social institutions of American culture do not anchor Millennials. Complex views of politics, religion, marriage, and family exemplify Millennial culture (Cutler, 2015). Popular media states Millennials are less loyal to one company and will change jobs multiple times (Meuse &

Mlodzik, 2010). Millennials remain more likely to return to higher education at some point for career advancement or a change in career altogether (Meuse & Mlodzik, 2010).

Millennials rank the most educated generation in American history; however, high debt burdens exist with the cost of intellectual achievements (Cutler, 2015). Furthermore, Millennials have more student loan debt than prior generations. This challenge of financing their education pushed Millennials to the workplace, making working while learning a way of life (Cutler, 2015).

#### *College Student Employees*

Research shows more than 70% of today's college students work while enrolled in classes (Carnevale et al., 2015). Millennial generation students are more likely to work while in college and work considerably more hours than those of previous generations. Student employment in the United States first increased in the mid-1960's, with today's students working at higher rates than ever before in history (Broton, Goldrick-Rab, & Benson, 2016). Nearly 14 million college students work while enrolled and accrue debt in record numbers (Carnevale et al., 2015). Due to rising costs associated with higher education in America, reaching education benchmarks such as a bachelor's degree proves costlier. Students work to pay for college, yet they are not significantly reducing total student loan debt (Smith, 2015). The average cumulative student loan debt totals \$26,600 for this generation of undergraduate students (McFarland et al., 2017).

Working while learning remains commonplace for Millennials and not an isolated phenomenon (Riggert, Boyle, Petrosko, Ash, & Rude-Perkins, 2006). The data varies on whether the increased level of part-time work has a negative or positive impact on the



academic pursuits of college student employees (Hall, 2010). Even though college student employees work only 15-30 hours a week, Smith (2015) suggests the working learner lacks tangible career-oriented experience. The upward trend of work hours decreases the amount of study and recreational hours college student employees complete (Hall, 2010). Only one in three working college students believe current jobs relate to their academic programs (Broton et al., 2016). Because of changes in the labor market and specifically the service industry, balancing work and school creates a lack of stabilization for the Millennial generation (Broton et al., 2016). Despite difficulties and increased barriers to degree completions, millennial students finish degrees and enter the workforce after college (McFarland et al., 2017). However, research shows college students graduate without the necessary skills for an adequate transition to the competitive workforce (Komarraju, Swanson, & Nadler, 2014).

### Workforce Readiness

Workplace success focuses on the individual skill sets of employees and their ability to adapt to changes in the environment (Rateau, Kaufman & Cletzer, 2015). Nonetheless, college students graduate without the skills necessary for employers to consider them ready for the workforce (Schneider, 2015). Research shows the Millennial generation lacking in specific soft skills, such as communication, teamwork, and critical thinking (Deepa & Manisha, 2013; Komarraju et al., 2014; McNamara, 2009; Schneider, 2015). Both employers and recent graduates lack confidence in their ability to excel in the workforce (Gonyea & Kozak, 2014). Emphasizing the importance of training and education raises the value of human capital (Estrin, Mickiewicz & Stephan, 2016).

### *Human Capital Theory*

The theory supporting the second pillar of reviewed literature in this study is Becker's human capital theory. Becker connects distinct aspects of economic research to define the importance of skill development to human capital theory (Heckman, 2015). Becker's theory implies the human resources policies and practices affect business performance (Fagan & Ployhart, 2015). Specifically, Becker explains the impact of training, the economic consequences of learning on-the-job, and effects on employment and retention decisions (Heckman, 2015).

Individual investments made in the development of employees impact economic outcomes. Personal characteristics influence training and education (Bae & Patterson, 2014). Research indicates individuals, referred to as human capital, are an integral part of the success of businesses (Boon, Eckardt, Lepak, & Boselie, 2018). Strategies directed at improving the human capital of an organization remain a substantial investment. Developing human capital in one manner may not be efficient, as individuals remain complex in their ability to adapt to instruction (Boon et al., 2018). Equipping the workforce with skills necessary to excel in the workplace continues with each generation as a vital part of the United States' competitive advantage (Williams, Moser, Youngblood, & Singer, 2015).

### *Workforce Readiness Shortfall*

As generations shift and time passes, the world of work evolves (Murti, 2014). Higher education faces challenges to keep up with a rapidly changing world and to provide students with relevant knowledge to engage in the workforce (Stein & Irvine, 2015). The business environment today impacts the global economy, including a fast-

paced exchange of data and growing technological advancements (Ritter et al., 2018).

The emergence of technology as an influencer in today's workplace changes the needs of employers when hiring new employees (Robles, 2012). Readiness to enter the workforce increases in importance in the exceedingly competitive and global workplace (Rateau, Kaufman, & Cletzer, 2015).

In the past decade, educational trends highlight the need for additional skills to complement hard skills, also referred to as technical skills necessary for the workplace (Sharma, 2009). Higher education institutions should teach students to develop both hard and soft skills for increased readiness for the workforce. Curricular changes in higher education institutions can be problematic due to the time, resources, and personnel necessary to employ such changes. The method and material taught should prepare students to perform as well-rounded employees (Sharma, 2009).

Soft skills described as skills often challenging to measure, shape individual mindsets, and viewpoints. Hard skills, defined as easily measurable skills, connect to one's education or traditional bits of intelligence (Balcar, 2014). A 2015 report by American College Testing (ACT) reveals a holistic approach to education enhances academic and career readiness. Successful transitions, like from college to the workplace, require individuals to focus on many skills and abilities (Camara, O'Connor, Mattern, & Hanson, 2015). Colleges and universities equip students with skills to enter the workforce. However, the soft skills gap continues to widen (Williams et al., 2015). Employer's expectations increase with the globalization of industry (Williams et al., 2015).

### *Employer Perspectives of Workforce Readiness*

Recent studies indicate college graduates entering the workforce remain ill-prepared for the transition to the workforce, specifically not meeting the demands of employers (Rateau et al., 2015). Feedback from business leaders over the past decade reveals a lack of satisfaction with current graduates (MacDermott & Ortiz, 2017). Business articles, popular press articles, and scholarly research recount the trials of locating new employees with workforce readiness (MacDermott & Ortiz, 2017). Millennials saturate the workplace and cause frequent complaints from business leaders. Graduating college students lack the skills necessary for the workforce (Association of American Colleges & Universities, 2015; Jenkins, 2017; Komarraju et al., 2014; McNamara, 2009). While the trend impacts business and industry in the United States, other countries such as India experience similar challenges (Murti, 2014).

Sixty percent of employers surveyed by the James Martin Center for Academic Renewal view new college graduates as lacking critical thinking skills. The survey of over 76,000 managers and executives reports employer perceptions of new graduates. The results show that today's graduates lack the emotional acumen necessary to rationalize and the mental discipline to resolve problems (Jenkins, 2017). In a report released by the Association of American Colleges and Universities (AACU), three out of five employers consider both specific and broad-based knowledge necessary for long term career success (Schneider, 2015).

The deficiencies in the workforce, in terms of soft skills and workforce readiness, remains a priority for federal programs and initiatives. The U.S. government speculates that programs designed to stimulate soft skills development implemented in higher

education would impact workforce readiness, but no marked improvements occurred (McNamara, 2009). Soft skills such as teamwork, communications, anger management, and problem-solving that employers seek allude the Millennial graduate. The gaps occur despite U.S. government programs implemented in K-12 and higher education, focusing on soft skill development (McNamara, 2009).

A shift has occurred in the modern workplace where employers seek college graduates with more than subject matter expertise. In fact, today's employer seeks graduates with leadership, interpersonal, and creative thinking skills. Research reveals employers as dissatisfied with the preparation of new employees, exposing a widening gap in workforce readiness of college graduates (Rateau et al., 2015).

Accounts from both employers and graduates indicate a lack of confidence in Millennial graduate's ability to succeed in the workplace (Gonyea & Kozak, 2014). Ritter et al. (2018), cite the 2016 National Association of Colleges and Employers (NACE) survey which finds teamwork as one of the top four attributes sought by employers, with nearly 80% of respondents indicating agreement. Other attributes employers seek to include leadership, problem-solving, and communication skills (Ritter et al., 2018).

A study by the Association of American Colleges and Universities (AACU) demonstrates 70% of employers would like universities to focus on teaching collaboration skills and teamwork (Ritter et al., 2018). In a 2014 American Marketing Association survey, 80% of executives surveyed report that blending hard skills and soft skills increase the preparation of students to join the workforce (MacDermott & Ortiz, 2017). With the changes in generational representation in the workplace, Baby Boomer retirement, and Millennial progression into leadership roles underscore the soft skills gap

of the Millennial generation (MacDermott & Ortiz, 2017). Colleges today strive to provide students with experiences that translate to the workplace. Many colleges promote a mindset that students should build a resume through multiple experiences in college, not merely earn a diploma (Stein & Irvine, 2015).

### *Student Perspectives of Workforce Readiness*

Contrary to the employee perspective, college students are more confident in their workforce readiness than employers. Employers report only three out of ten surveyed in the AACU report as satisfied with the level of preparedness of Millennial graduates (Schneider, 2015). In another 2015 report, 74% of surveyed graduates perceive themselves as ready and possessing the skills necessary for the workforce. In the same study, employers reported only 30% of college graduates prepared for the workforce (MacDermott & Ortiz, 2017).

However, not all Millennials report readiness for the workforce. In a 2017 report prepared by Hanover Research for McGraw-Hill Education, less than half of graduates surveyed feel very or extremely prepared for the workforce. Although students attending four-year institutions tend to be more prepared (McGraw Hill Education, 2017). While a 2013 study indicates nearly one-third of those surveyed perceived their preparation for the workforce as unsatisfactory (Gonyea & Kozak, 2014).

Another 2017 report indicates that even though Millennials make up over half of the labor force, only 16% of those surveyed view themselves as prepared for life after college (Barnes & Noble College, 2017). In a 2015 global survey by the Canvas' Instructure Research and Education team, data on the role college plays in career preparedness indicates students are prepared for careers; 67.7% report their university

education prepared them for their career field. In the 2015 AACU report, students indicate satisfaction with their workforce readiness in the areas of oral communication, teamwork, critical thinking, and problem-solving (Schneider, 2015). Of the U.S. students surveyed, 85% perceived their college education as filled with career-relevant experiences (Stein & Irvine, 2015).

The motivation for students to attend college usually includes preparing for a career. A survey by the Higher Education Research Institute (HERI) reports 86.1% of U.S. first-year college students surveyed, entered college intending to find a better job (Stein & Irvine, 2015). College students face the challenge of entering a workforce they perceive themselves prepared for, only to discover a lack of skills necessary to thrive once in the workplace (Murti, 2014). Recent graduates comment that experiences in internships and part-time employment, not the classroom, prompted increased confidence in their workforce readiness (McGraw Hill Education, 2017). Overall, because of the typical optimistic outlook of Millennials, college students view themselves more prepared for the workplace than employers (Schneider, 2015).

Rateau, Kaufman, and Cletzer's (2015) qualitative study reports teaching in new and inventive ways from a learner-centered perspective can impact a student's ability to grow and adapt in a fast-paced workplace. Cognitive skills are an integral part of success in the workplace and need development during a student's educational journey (Camara et al., 2015). In the 2017 Future Workforce Survey, students indicate perceived preparation in the areas of teamwork, communication, and critical thinking. Two-thirds of students surveyed remarked they learned critical thinking, teamwork, communication, and time management in college (McGraw Hill Education, 2017). These cognitive and

soft skills are an integral part of success in the workplace and must be a part of the educational process of today's students (Camara et al., 2015).

### *Soft Skills*

Soft skills are those abilities or qualities that are not reliant on knowledge acquired in traditional methods. Soft skills can be identified as intangible abilities that prepare one to thrive as a leader and motivator of others. While some researchers try to label soft skills as only people skills, the core of this skill set combines interpersonal skills and personal characteristics (Robles, 2012). The ability to get along with others, teamwork, positive attitude, leadership ability, and work ethic are specific soft skills employers seek (Murti, 2014). Employers today find soft skills as essential and affect the work atmosphere, budgetary processes, and customer satisfaction (MacDermott & Ortiz, 2017).

Necessary soft skills dominate today's workforce needs. Millennials in the workforce exhibit soft skill deficits (McNamara, 2009). While graduates of today lack soft skills, businesses view soft skills in higher demand and make hiring decisions based on one's combined hard and soft skills. Soft skills remain in the most significant need for employers (Deepa & Manisha, 2013; MacDermott & Ortiz, 2017; Murti, 2014; Ritter et al., 2018). Research by Deepa and Manisha (2013) reports soft skills mastery as valuable a predictor of success in the workplace as one's formal education. Soft skills have long been a criterion for success in the workplace. Organization leaders expect soft skills mastery. However, the widening gap in soft skills remains a challenge of the Millennial generation (Murti, 2014). The soft skills gap causes a problem for business and industry



as the workforce readiness inequality affixes culpability to higher education (Rateau et al., 2015).

Colleges and universities experience scrutiny to produce graduates with soft skills (Ritter et al., 2018). Higher education institutions that focus on developing both hard and soft skills for students also benefit by preparing graduates for the workforce. Educational institutions should adapt to teaching styles, and adjust curriculum development, impacting the overall skill development of students (Sharma, 2009).

Employers seek specific soft skills needed for success in the workplace, such as communication, teamwork, work ethic, and critical thinking (Rateau et al., 2015). Soft skills that contribute to positive work performance include teamwork, leadership, communication, and personal discipline (Camara et al., 2015). Total job performance remains associated with other factors outside of performing tasks effectively, but also personal interaction with others (Camara et al., 2015). A Harvard study asserts 80% of accomplishments in the workplace link to one's ability to use soft skills (Sharma, 2009). Both qualitative and quantitative research claims employers give precedence to soft skills over position or job-specific skills when hiring and promoting (Rateau et al., 2015).

Soft skills are often connected to the emotional intelligence of individuals inside and outside of the workplace (Ritter et al., 2018). A multitude of skills encompass soft skills and emotional intelligence impacts an individual's ability to manage and recognize the emotions of others. Emotions tend to play a vital role in the workplace. One who masters soft skills can be identified as emotionally intelligent (Wheeler, 2016).

Emotions are continually present, even in the workplace. The ability to execute the task laden to-do lists of the workplace while operating in an emotionally stable

mindset generates a healthy atmosphere for achievement (Subhashini, 2008). “Emotions encompass the traits defining an individual’s soft skills” (Dean & East, 2019, p. 18). Soft skills are necessary for work, making emotional intelligence a critical component of achievement in the workplace (Dean & East, 2019). The influence of emotional intelligence on soft skill development affects how people process data and apply it in the workplace (Deepa & Manisha, 2013). Subhashini (2008) contends high emotional intelligence distinguishes average workplace achievers from top performers. The latter possessing levels of emotional intelligence necessary to thrive in today’s workplace.

### Emotional Intelligence

Educating people in a balanced manner has proven valuable to the Millennial generation of students. Part of a holistic approach to education is the development of emotional intelligence in individuals (Chee & Choong, 2014). Managing emotions is vital in education but also in the workplace. By making an employee aware of their emotional intelligence, one can adjust and improve their workplace success (Birajdar, 2016). The ability to understand oneself and relate to others are characteristics of emotional intelligence and important to success (Troth, Jordan, & Lawrence, 2012).

### *Emotional Intelligence Theory*

The third pillar of this study focuses on emotional intelligence. Emotional intelligence theory serves as a foundation for the concept. The theory derives its grounding in various models of emotional intelligence (Cherniss, Extein, Goleman, & Weissberg, 2006). Three EI models have distinct definitions, measurement approaches, and measures; Goleman and Boyatzis’s model, Mayer and Solovey’s performance-based abilities model and the self-report abilities model (Walter, Cole, & Humphrey, 2011).

Goleman's model grounds itself in a collection of dispositions, perceptions, and competencies which relate to the management of emotions, unlike the other two models which focus solely on abilities (Walter et al., 2011). Goleman's theory of emotional intelligence proposes a "theory of performance" (Cherniss et al., 2006, p. 240).

Goleman's theory concentrates on the relationship between emotional intelligence and individual workplace performance. Additional work by Mayer, Salovey, and Caruso (2004) supports the premise that emotional intelligence awareness and behaviors can be enhanced. Gardner influenced Goleman's work on emotional intelligence by offering factors other than intelligence quotient (IQ) impact personal achievements (Dulewicz & Higgs, 2003). Mayer concludes emotional intelligence is fluid and develops gradually (Goleman, 1998). Goleman's theory focuses on emotional intelligence as a set of competencies influenced by instruction and assessment (Dulewicz & Higgs, 2003).

Goleman's theory addresses four quadrants of emotional intelligence: (a) self-awareness; (b) self-management; (c) social awareness; and (d) relationship management (Weis & Arnesen, 2007). The quadrants identify areas to measure and evaluate the emotional intelligence of individuals (Weis & Arnesen, 2007). The competencies in the quadrants evolve and, unlike the intelligence quotient, change with experiences and exposure to emotional intelligence concepts (Goleman, 1998). The theory contends as professionals ascend in business, emotional intelligence becomes even more critical to personal success (Dulewicz & Higgs, 2003).

### *History of Emotional Intelligence*

A review of the literature indicates a debate about intelligence versus emotion raged for years. Researchers argue about the integration of intellect and intuition,

forming a merger that appears intertwined (Mayer, Roberts, & Barsade, 2008). The history of emotional intelligence begins with an article in *Harper's Magazine* by Thorndike in the 1920's.

The article laid claim to the idea of social intelligence as a means of assessing one's knowledge. A three-strata emotional intelligence theory was explained briefly in the article, and hence the journey of the emotional intelligence story began (Landy, 2005). Thorndike defines social intelligence as the ability to understand one's self and others and how one acts after acquiring that knowledge. While Thorndike's work anchors the notion of emotional intelligence, it lacked academic testing (Landy, 2005).

Research on intelligence as a science focuses primarily on the cognitive side of the brain. Wechsler initiates the conversation about social and personal factors influencing intelligence in the 1940's. He was the first to point to non-intellective factors as essential to the success of individuals (Chemiss, 2000). In the 1950's, two distinct schools of thought on intelligence solidified. One anchored in the intelligence tradition and the other in social-psychological research. Discussions of social intelligence arose, and researchers started to examine social facets of ability (Roberts, Zedner, & Matthews, 2001). Not until the 1960's did scientific research mention emotional intelligence (Mayer, Roberts, & Barsade, 2008).

Gardner's work on multiple intelligences initiates research for others to examine the complexities of various intelligences (Kaschub, 2003). The multiple intelligences discussion simplified by reducing intelligences into separate categories, interpersonal and intrapersonal (Chemiss, 2000). Gardner reports evidence that intelligence occurs more often than what was historically reported through psychometric testing. Research by

Gardner reveals standardized and time-tested measures of intelligence ignored a multitude of mental faculties (Gardner, 2002).

Mayer and Salovey emerge as the leaders of research on emotional intelligence. The researchers arrived at this position cautiously because of the connotations surrounding the existing measurements of intelligence (Mayer et al., 2008). This sense of caution and intrigue led to extensive research and an interest in the subject by several other researchers (Mayer et al., 2008). Salovey and Mayer (1990) define emotional intelligence as a subset of social intelligence, identifying owning one's feelings as a key concept. Mayer and Salovey coined the phrase emotional intelligence and searched for ways to validate the measurement of emotional intelligence (Chemiss, 2000). The ability to harness these skills of understanding and communicating emotions became evident in the scientific community and gained momentum in the business community (Salovey & Mayer, 1990).

#### *Divide in Emotional Intelligence Research*

In the 1990's, a divide in the research on emotional intelligence begins (Mayer et al., 2008). Daniel Goleman begins his entry into the field with a focus on improving emotional intelligence (Kaschub, 2003). Goleman grounds his theory in the notion that success comes to those who understand and manage emotions. The idea of success linking to emotional intelligence sparks a divide in the research and causes some to discount Goleman's theory (Landy, 2005). Not only did his claims of success caused by high emotional intelligence cause a divide, but Goleman's less than scientific methods of data collection yielded skepticism of his work (Landy, 2005). In fact, he used research from an earlier study called the marshmallow test as an example of emotional intelligence

(Kaschub, 2003). This test on a group of four-year-old children, was set up to see if the children, when given a marshmallow, then told if they waited until the facilitator returned to eat the marshmallow, would be rewarded with a second marshmallow. This ability to wait on the second marshmallow and exhibit delayed gratification, Goleman claims, shows a restraint associated with emotional intelligence and predicts greater success in the future (Kaschub, 2003).

Goleman's book *Emotional Intelligence*, written while working for the New York Times, fueled the separation between the two emotional intelligence camps (Chemiss, 2000). Due to the success of his book, emotional intelligence suddenly became a buzzword in corporate America (Chemiss, 2000). The divide in the field led to criticism of the commercialization of emotional intelligence to the corporate market and Goleman's trade book (Mayer, Salovey, & Caruso, 2004). The emotional intelligence debate deepened as the business community adopted emotional intelligence as the new remedy for workplace failures (Landy, 2005). The momentum emotional intelligence gained after Goleman's book caused the scientific community to question whether emotional intelligence measures were ready for the marketplace (Landy, 2005).

The scientific community claimed having different constructs for a discipline like EI could be problematic, yet others felt the novelty of the field triggered debate (Cherniss et al., 2006). Goleman's research reported emotional intelligence's applicability in the business world. The trade book Goleman authored rose to success and led those outside the academic community to believe Goleman discovered emotional intelligence (Goleman, 1995). Although, Goleman informed the public about the scientific research psychologists completed on emotional intelligence before his work (Chemiss, 2000).

Goleman's research was proprietary and could not be released to the public for review. This proprietary research bases its information on over 200 competency models used in industry to identify top performers (Goleman, 1998). The exclusive nature of his research caused the scientific community to doubt his claims about emotional intelligence and its applicability in the workplace (Landy, 2005). Although the popularization of emotional intelligence exposed many practitioners to the subject, academic perceptions of emotional intelligence remain varied (Salovey & Grewal, 2005).

### *Models of Emotional Intelligence*

Multiple schools of thought and models of emotional intelligence dominate the literature on the topic. Three models permeate the literature (Ferris, 2010). The first of the models of emotional intelligence, defined by Mayer and Salovey, describes it as a set of skills or abilities (Codier, 2014). A second model, adapted from the first, defines emotional intelligence as a set of personality traits. In contrast, a third model, developed by Bar-On and later Goleman, explains emotional intelligence as a mixture of both (Codier, 2014). The abilities model was popularized by Mayer and Salovey (Livingstone & Day, 2005).

The concept of abilities proposes the method by which one processes emotional information (Livingstone & Day, 2005). This model links to the instrument created by Salovey and Mayer, referred to as the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Ferris, 2010). This abilities model produces a host of peer-reviewed research, more than other models, leading the scientific community to embrace this model (Berrocal & Extremera, 2006).

The second model, derived from research by Mayer and Salovey, uses self-assessments and measures developed by Wong and Law (Walter et al., 2011). The third model, developed by Reuven Bar-On, uses an instrument developed by Bar-On and specifically examines traits, competencies, and perceptions (Walter et al., 2011). Bar-On's model capitalizes on the construct of social-emotional intelligence (Berrocal & Extremera, 2006).

Bar-On's research focuses on five factors, separated into fifteen elements (Berrocal & Extremera, 2006). This research offers an instrument to measure emotional intelligence based on the five factors called the Bar-On EQi (Mayer, Salovey, Caruso, & Cherkasskiy, 2011). Much of the information from Bar-On's group of researchers focuses on the psychometric and predictive use of the data gathered from the instrument (Berrocal & Extremera, 2006). Reviews of the model target the use of the data, determining why some people succeed while others do not (Mayer et al., 2011). The Bar-On model was developed further and received recognition outside of academia as the model of competencies developed by Daniel Goleman (Berrocal & Extremera, 2006). This mixed model focuses on the ability to predict skills and applicability in the workplace (Berrocal & Extremera, 2006). While many other researchers scoffed at Goleman's claims and model, those outside of academia embraced the rationale that success could be impacted by emotional intelligence (Joseph & Newman, 2010).

The three models and dueling ideas surrounding emotional intelligence lead to two theories, one championed by Mayer and Salovey and the other by Goleman (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2005). The complexity of emotional intelligence theory delves into the technique used to administer the instrument (Brackett



et al., 2005). The Bar-On uses a self-reported instrument, and the MSCEIT, Mayer, and Salovey's instrument is completed by the client (Mayer et al., 2004). Differing opinions on which model is the most applicable in the field leads to external criticism and skepticism about emotional intelligence and its measures (Mayer et al., 2004). Some critics are not convinced a self-reporting instrument, like the BarOn, is effective at gathering usable data (Ferris, 2010). Some researchers view this instrument as determining one's preferences and does not indicate ability (Ferris, 2010). The Emotional Competence Inventory (ECI) developed by Goleman and Boyatzis examines the competencies and behaviors related to emotional intelligence (Conte, 2005). The scientific community found Goleman's instrument lacking in evidence of validity and countered that Goleman should seek peer-reviewed studies involving the ECI (Conte, 2005).

### *Business Applicability*

As research on emotional intelligence deepened, so did its applicability to the corporate world. Studies on emotional intelligence link job performance and the ability to predict successful job performance (O'Boyle, Humphrey, Pollack, Hawver, & Storey, 2011). Research on emotional intelligence influences the workplace, demonstrating a link between the ability to manage, perceive, and understand emotions and good managerial practices (Cote & Miners, 2006). In the workplace, the importance of emotional intelligence has been confirmed through research and application of that research (Goleman, 2000). While an individual may need specific skills to get hired, to grow in a position, one needs a high level of emotional intelligence (Singh, 2008). Research shows a relationship exists between emotional intelligence and the ability to

work well in groups; due to a better understanding of self and others (O'Boyle et al., 2011). Data, from varying models of emotional intelligence, shows a link to higher EI and better work in customer service. Higher EI also indicates better leadership in the workplace (Schutte & Loi, 2014). Teamwork is also a bi-product of those who exhibit high emotional intelligence. Emotionally intelligent people communicate well and have the needed social skills to thrive in a work environment (Allam, 2011).

The understanding of one's self and others, coupled with positivity, leads to excellence in the service industry (O'Boyle et al., 2011). Emotional intelligence can shape job performance, especially if the employee remains low in cognitive intelligence. Employees with higher EI typically have better relationships with others and experience support from a social network (Schutte & Loi, 2014). In a world where excelling at a job remains optimal, emotional intelligence may indicate high job performance (Singh, 2008). Research has uncovered a new intelligence by discovering and defining emotional intelligence (Mayer & Caruso, 2002). By utilizing an individual's emotional intelligence, one can use emotions to connect with others, customers, and co-workers (Cote & Miners, 2006).

#### *Emotional Intelligence and Performance*

While some may call the proposed link between emotional intelligence and performance at work anecdotal, others see the link as valid (Weinberger, 2002). Critics of a relationship between workplace achievement and emotional intelligence claim a lack of scientific evidence to substantiate such assumptions (Day & Carroll, 2003). Even those who may not support the mainstream adoption of the emotional intelligence application admit individuals with higher emotional intelligence scores are more likely to

have healthier relationships with others (Mayer & Caruso, 2002). Interventions created to improve emotional intelligence may produce results in the workplace (Schutte & Loi, 2014). A thorough review of the literature on emotional intelligence shows EI as an indicator of performance (Colfax, Rivera, & Perez, 2010).

Research shows higher emotional intelligence impacts leaders in the workforce. Successful employees master their emotions, specifically conflict management, stress management, job performance, and leadership. Excelling in these areas promotes effective management and a positive workplace (Krishnaveni & Deepa, 2011). Relating to others, interpersonally serves as a hallmark of emotionally intelligent leaders. Making an emotional connection with subordinates and coworkers elevates a manager's ability to motivate their team (Voola, Carlson, & West, 2004). New knowledge or competencies in business lead to a competitive advantage. A top competitive advantage in today's business culture lies in emotional intelligence. As those who are emotionally intelligent are more skilled at change management and the nuances of emotional mastery (Connell & Travaglione, 2004). "It has been proved that the components of transformational leadership like inspirational motivation and individualized consideration are significantly correlated with the ability to monitor emotions in oneself and others" (Krishnaveni & Deepa, 2011, p. 58).

Strategic change in the workplace influences profitability and success. Having the competitive advantage of effective change agents sets thriving companies apart from struggling organizations and gives them a competitive edge. Those change agents have markedly higher emotional intelligence (Voola et al., 2004). Creating change in organizations takes strong leadership well versed in the practice of emotional

intelligence. The cognitive challenges of change, motivating others, and demonstrating empathy require the use of emotional intelligence. Leaders with high EI are more successful and make change a smooth transition to long-term improvement and organizational advancement (Connell & Travaglione, 2004). Emotions play a significant role in organizational management. To recognize one's own emotions and the emotions of others allows a team to work more seamlessly. Weaving emotional intelligence into the fabric of teamwork makes the organization itself more competitive (Krishnaveni & Deepa, 2011). Transformational leadership strategically uses emotional intelligence, giving those leaders a competitive advantage (Voola et al., 2004).

When reviewing the literature, the question emerges as to whether emotional intelligence can be taught (Cote & Miners, 2006). Many businesses add emotional intelligence training to employee development plans, to improve employee levels of emotional intelligence and subsequent job performance (Cote & Miners, 2006). Teaching and training of emotional intelligence in the initial years of employment could produce an employee with higher emotional intelligence (Cherniss et al., 2006). By establishing intentional methods to improve workplace performance, individuals and organizations can benefit (Schutte & Loi, 2014). Singh (2008) points out that employers can both teach and test emotional intelligence, giving them a baseline to improve performance.

Because IQ is a relatively static form of intelligence, EI provides an opportunity for companies to improve workforce performance by increasing emotional intelligence (Singh, 2008). Multiple studies, using different work environments from the military to the restaurant industry, confirm a relationship between high job performance and high

emotional intelligence (Cherniss et al., 2006). This relationship and the continuing research on performance improvement through emotional intelligence training, make EI an effective means to improve human performance (Colfax et al., 2010).

Goleman (1998) describes one's ability to change thoughts, feelings, and behaviors as profound changes affecting one's emotional intelligence. He clearly states in his 1998 book, *Working with Emotional Intelligence*, methods by which one could change the feelings and behaviors associated with emotional intelligence through training and education. A 2009 study reveals specific elements of emotional intelligence could be improved upon if interventions were based on scientific principles (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009). The use of an inventory or assessment tool before and after training shows the difference emotional intelligence training can make in the emotional intelligence skillset (Watkin, 2000). The testing, training, and re-testing model has shown a change in emotional intelligence awareness and application in studies where a control group is used (Dulewicz & Higgs, 2004). Although studies have shown emotional intelligence as teachable or improvable, data reveals some people are more coachable than others on EI principles (Dulewicz & Higgs, 2004). Methods to improve work performance are essential to the overall development of individuals as well as organizations (Schutte & Loi, 2014). Both practitioners and scholars agree that a clear understanding of emotional intelligence remains significant to the future of business and education (Mayer & Caruso, 2002).

#### *Emotional Intelligence and College*

Recent research centers on emotional intelligence and its applicability for predicting success in college (Sparkman, Maulding, & Roberts, 2012). The relationship

between emotional intelligence and college success produces a discussion of and focus on specific elements of emotional intelligence (Parker, Duffy, Wood, Bond, & Hogan, 2005). Some research using emotional intelligence testing shows that factors such as empathy, social responsibility, and impulse control could predict persistence in those tested (Sparkman et al., 2012). Parker et al. (2005) report that academically achieving students have overall higher emotional intelligence scores, indicating at least academic success. The data from Sparkman et al. (2012) reveals emotional intelligence scores could be improved upon in the first two years of a student's enrollment. This relationship of improvement ties to class instruction of emotional intelligence principles (Sparkman et al., 2012). Other studies show emotional intelligence coachable and improvable (Liptak, 2005).

While universities search for ways to improve persistence and graduation rates, others in the academic community seek strategies to improve the performance of students in the classroom and upon graduation (Chee & Choong, 2014). Choosing the correct career path can be tied to emotional intelligence (Di Fabio, Palazzeschi, Asulin-Peretz, & Gati, 2013). Di Fabio et al. (2013) carefully examine the association between emotional intelligence and one's ability to be more decisive when choosing a career. Research by Chee and Choong (2014) shows that emotional intelligence can impact performance and personal outcomes. The ability to function as part of a team, essential for workplace success, connects to emotional intelligence (Troth, Jordan, & Lawrence, 2012).

Specifically, the study by Troth, Jordan, and Lawrence (2012) reveals for one to excel in the workplace, the traits of emotional awareness and emotional management are paramount for teamwork. The work of Troth et al. (2012) found students disliked group

work but could be coached as part of the student's career and impacted their ability to optimize their performance in group settings. Success in the workplace indicates one's ability to lead in the career environment by managing one's emotions (Charusheela, 2016).

Practitioners on college campuses consistently focus on developing students in and out of the classroom (Allen, Shankman, & Miquel, 2012). Whereas, the combination of emotional intelligence and higher education links to student success (Allen et al., 2012). Holistic development of college students can connect to out of class experiences (Tinto, 1999). This debate about whether emotional intelligence could or should be taught on the college level continues in the EI research (Chee & Choong, 2014).

### Summary

The foundation of the research of this chapter derives from college student employees, workforce readiness, and emotional intelligence. These three pillars of research support the study and are reinforced by three theories, Mannheim's generational theory, Becker's human capital theory, and Goleman's emotional intelligence theory. The chapter reviews the historical background and current research on these three areas, which ground the research of the study.

Millennials make up the most significant portion of the U.S. labor market and soon will make up over half of the worldwide workforce (Calk & Patrick, 2017). This generation joins the workforce after working while enrolled in college (Broton, Goldrick-Rab, & Benson, 2016). While known for their affinity for technology, Millennials struggle with workforce readiness and soft skills (Murti, 2014). Soft skills today are often described as the ability to access emotional intelligence (MacDermott & Ortiz, 2017).

The importance of soft skills links emotional intelligence to success in the workplace (Goleman, 1998). Chapter Three, which follows, describes the detailed data analysis of this study examining the influence of emotional intelligence training on college student employees.



### CHAPTER III - RESEARCH METHODOLOGY

Millennials attend college in record numbers, with nearly 17 million students enrolled in U.S. institutions of higher learning in 2016 (National Center of Education Statistics, 2018). Rising numbers of enrolled students, coupled with increasing costs, lead students to financial aid and part-time employment to fund educational endeavors (Carnevale et al., 2015). The rising cost of education causes nearly three-fourths of college students to work while pursuing a degree (Broton et al., 2016). Millennial students view themselves as prepared for the workforce upon graduation, confident in communication, critical thinking, and teamwork skills (McGraw Hill Education, 2017). However, employers regard the same graduates as unprepared for the workforce and especially deficient in soft skills (Schneider, 2015). The lack of soft skills makes the transition from college to the workforce difficult for Millennials (Komarraju et al., 2014). While the need for soft skills overshadows technical skills in today's workplace, understanding and managing one's emotions remains important to leaders (McNamara, 2009). Emotional intelligence links the managing of emotions to success in the workplace (Deepa & Manisha, 2013). The current study highlights perceived gaps in soft skills of Millennial student employees in the workplace. Chapter III outlines the methodology of the study. Detailed in this chapter are the research objectives, purpose of the study, population and sample, instrumentation, validity and reliability, survey map, data collection plan, and data analysis plan.

The study's purpose was to identify the influence of emotional intelligence training on student employee perceptions of their workforce readiness and emotional intelligence. The needs of the workplace change as generations in the workforce evolve

(Lewis & Wescott, 2017). A workforce make-up now dominated by Millennials produces challenges around soft skills. Soft skills often link to emotional intelligence. However, Millennials lack soft skills, which poses a challenge for the generation and the U.S. workforce (Deepa & Manisha, 2013). Understanding one's emotional intelligence, mastering communication skills, and using soft skills, increases the productivity of the workplace (MacDermott & Ortiz, 2017). Teaching employees ways to increase emotional intelligence and, consequently, soft skills can improve the success of the workforce (Cherniss et al., 2006). Closing the soft skills gap and improving workforce readiness produces a workplace that can optimize performance and productivity (Robles, 2012).

### Research Objectives

Five research objectives guide this study. The review of related literature, in Chapter II, serves as a foundation of the five research objectives. The methodology discussed in this chapter reflects the following research objectives.

- RO1: Describe the demographic characteristics of the study's participants, including age, gender, and student employment position.
- RO2: Identify the emotional intelligence of student employees.
- RO3: Compare the emotional intelligence of student employees with emotional intelligence training to student employees without emotional intelligence training.
- RO4: Identify perceived workforce readiness of student employees.

RO5: Compare the perceived workforce readiness of student employees with emotional intelligence training to student employees without emotional intelligence training.

### Research Design

Experimental design was first used in 1925 in the area of agriculture as researchers could apply an intervention without the limitations of a laboratory. In this study, a treatment or intervention was used with more than one group to isolate the influence of the intervention (Shadish et al., 2002). This study utilizes an experimental quantitative design. The study utilizes four groups, including control groups and test groups. The research design for this study is referred to as a Solomon four-group design. A Solomon four-group design allows the researcher to focus on the effects of the intervention, the effect of a pretest, and the role of the interaction between the pretest and the intervention (Howard, Tang, & Austin, 2015). The four-group design combats the phenomenon of pretest sensitization. Pretest sensitization occurs when a research effect, which is referred to as reactivity, takes place in the study (Song & Ward, 2015). Shadish, Cook, and Campbell (2002) describe this reactivity as follows, “research participants might try to guess what the experimenter is studying and then try to provide the results the researcher wants to see” (p. 78). Due to the presence of a control and test group without the pretest, the effects of both the testing and interaction of the testing and effect of the intervention may be determined (Campbell & Stanley, 1963).

A two-group experimental design has long been the standard for testing interventions, yet it does not factor in research effects. Solomon uses the four-group model to reduce the likelihood of this phenomenon and yield more robust data for the

researcher (Song & Ward, 2015). Random assignment to the groups remains vital to the Solomon four-group research design. The Solomon four-group design is recognized in the field as having a strong design due to its rigor and consideration of the factors of external validity (Campbell & Stanley, 1963). Although considered robust and the most appealing of basic experimental designs, researchers do not often use the design. This lack of utilization associates with a misunderstanding regarding the number of subjects required (Braver & Braver, 1998). More subjects are not necessary for the design, only more groups than the traditional two-group design. The same number of subjects utilized in a two-group design may be used in the four-group design, yet more groups are employed (Howard et al., 2015).

Isolating an intervention's effect without considering the influence of assessment effects may increase or decrease the effectiveness of the intervention (Song & Ward, 2015). This study utilizes Solomon's four-group design method to reduce the influence of pretest sensitization and better measure the impact of emotional intelligence training on college student employees. The Solomon design incorporates four groups: "(a) an intervention group receiving the pretest and intervention, (b) a control group receiving a pretest but no intervention, (c) a control group receiving no pretest and receiving the intervention, and (d) a control group receiving neither pretest nor intervention" (Song & Ward, 2015, p. 5). In analyzing data produced using this design, the researcher must determine if pretest sensitization occurs. Simply stated, one determines if X (the intervention) affects O (the test) in the instance when a pretest is used. Once established, the researcher progresses to conclude if the treatment or intervention has an effect (Howard et al., 2015).

This study used pretests and posttests to collect data. This method of gaining information to benchmark further testing provides the researcher with a point of comparison (Levy & Ellis, 2011). The illustration below depicts the relationship between the randomly assigned groups, the intervention, and the application of pre and posttests. The letters below represent specific aspects of the design, R = randomly assigned groups, O = test, and X = the intervention of emotional intelligence training (Campbell & Stanley, 1963).

Group 1	R	O <sub>1</sub>	X	O <sub>2</sub>
<hr/>				
Group 2	R	O <sub>3</sub>		O <sub>4</sub>
<hr/>				
Group 3	R		X	O <sub>5</sub>
<hr/>				
Group 4	R			O <sub>6</sub>

*Figure 2. Solomon Four-Group design*

### Population and Sample

In 2017, approximately 20.4 million students enrolled in American colleges and universities (National Center for Education Statistics, 2017). The population of interest for the current study includes college student employees at a regional four-year public university. The institution chosen for the study reflects average national demographics for universities across the United States. The public four-year university has a total enrollment of 14,478 (USM, 2018) The National Center for Education Statistics (2017) reports 56% of students enrolled in U.S. higher education are female. Similarly, the study's population comprises primarily of in-state residents and includes a 63% female student body (USM, 2018). While 44% of students nationally are minority students, at

the study's university, 38% of students represent minority groups (USM, 2018; National Center for Education Statistics, 2017).

Including all enrolled students (graduate and undergraduate) at a four-year university, nearly 80% receive financial aid (USM, 2018). In the past ten years, the cost of undergraduate education at public institutions rose 34% (National Center of Education Statistics, 2018). In that same time frame, tuition and fees at the study's four-year university rose an average of 5% per year, totaling a nearly 25% increase over five years (Mississippi Public Universities, 2018).

The 2018-2019 academic year projects an increase of 4.7%, pushing annual tuition to \$15,252 (Mississippi Public Universities, 2018). Yearly averages for tuition at four-year public universities in America average \$19,189 (National Center for Education Statistics, 2017). Due to increases in college costs, more students work full-time and part-time, with national data revealing 26% of students work full-time and 36% of students work part-time (Broton, 2016; National Center for Education Statistics, 2017). The university's enrollment, cost, financial aid awards, and diversity of student body reflects national norms (National Center for Education Statistics, 2017; The University of Southern Mississippi, 2018).

Participants in this study were selected from college student employees in the Division of Student Affairs at the regional four-year university. The Division of Student Affairs employs 28.5% of campus student employees, nearly 450 students. Students may represent different classifications, majors, genders, and ethnicities. Using a sample size calculator, with a 5% margin of error, a confidence level of 95%, and a response distribution of 50%, the suggested number of participants for this study total 208.

Participants for each group were determined through random sampling. The groups were distributed using random sampling software, which generated the four groups using their student ID numbers as identifiers.

Simple random sampling allows the researcher to divide the sample into groups using a chance process, ensuring the randomization of the participant groups (Shadish et al., 2002). Four groups of student employees served as the sample for this study. During the study, student employees were compensated at their regular rate of pay for the time spent in training and encouraged to complete two instruments during downtime at on-campus jobs.

#### Instrumentation

The instruments used for this study are the EQ-i 2.0 (Appendix A) and the Work Readiness Inventory (WRI). The study utilized two instruments to gather data on the emotional intelligence and workforce readiness of participants. These instruments are described in further detail below.

##### *EQ-i 2.0*

Multiple studies and dissertations have utilized the Bar-On EQ-i researching college student success and career readiness (Bar-On, 2006; Leedy & Smith, 2012; Sparkman et al., 2012). Prior research guided the researcher to utilize the instrument. The EQ-i 2.0 is a revision of the BarOn EQ-I, which was used for over 20 years in the field of emotional intelligence (Multi-Health Systems, 2018). The BarOn EQ-i was the first commercial instrument used to measure emotional intelligence. This version, like the original instrument, self-reports with 133 items, based on a five-point Likert scale, and evaluates five scales of Reuven Bar-On's model (Berrocal & Extremera, 2006). The

Likert scale denotes the following designation: 1 = *Never/Rarely*, 2 = *Occasionally*, 3 = *Sometimes*, 4 = *Often*, and 5 = *Always/Almost Always* (Multi-Health Systems, 2018). The new version was revised based on feedback from users and rigorously tested for validity and reliability (Multi-Health Systems, 2012). Recent research in the field of emotional intelligence supports the Multi-Health Systems (2012) revision that reflects the contributions of Reuven Bar-On. The five measured scales include (a) self-perception, (b) self-expression, (c) interpersonal, (d) decision making, and (e) stress management (Multi-Health Systems, 2018). Sub-scores on 15 subscales reside within each of the five scales. The five scales and 15 subscales are listed below in Table 1.

Table 1

*EQ-i 2.0 Scales and subscales*

Scales	Subscales	Subscales	Subscales
Self-Perception	Self-regard	Self-actualization	Emotional Self awareness
Self-Expression	Emotional expression	Assertiveness	Independence
Interpersonal	Interpersonal relationships	Empathy	Social responsibility
Decision Making	Problem solving	Reality testing	Impulse control
Stress Management	Flexibility	Stress tolerance	Optimism

The instrument took approximately 20 minutes to complete and was administered through an online portal. Once completed, the instrument generated a summary report which provides a general emotional intelligence score, five general composite scores, and



individual scores for each of the other 15 subscales (Multi-Health Systems, 2018). The total EQ-i score was created by summing 118 of the 133 items, which allows for examination of the sub-scores in interpreting and reporting the data (Multi-Health Systems, 2018). The range of scores shown in the reports used to norm the scores reflect scores from 60-140. Lower scores reflect in composite scores less than 90, and higher scores reflect in totals higher than 110 (Mulit-Health Systems, 2012). Multi-Health Systems generated the scores and raw scores tabulated automatically into standard scores using a mean of 100 and a standard deviation of 15 (Multi-Health Systems, 2018). The group report generated scores for the entire participant group. The data set generated from the group report was used for statistical comparisons. The EQ-i 2.0 was used as a pretest and posttest for two of the sample groups. In addition to measuring emotional intelligence, the participant's perceptions of work readiness were measured.

#### *Work Readiness Inventory*

The WRI (Appendix B) was utilized to gather data for the study in pre and posttests. The WRI, published in 2009, aids participants in identifying traits for workplace success. The Work Readiness Inventory consists of 36 items measuring six areas of work readiness. The six areas include: (a) *Responsibility*, (b) *Flexibility*, (c) *Skills*, (d) *Communication*, (e) *Self-view*, and (f) *Safety* (Career Readiness JIST, 2010). The instrument contains six corresponding questions for each area. The WRI allowed participants to self-report answers using a five-point Likert scale ranging from one to five with the range as follows: 1 = *not concerned*, 2 = *little concerned*, 3 = *somewhat concerned*, 4 = *concerned*, and 5 = *very concerned* (Career Readiness JIST,

2010). The instrument allows the participant to rate their concern about personal readiness for the workforce (Brady, 2010).

Participants took an estimated 10 to 15 minutes to complete the instrument administered through an online survey portal. Once the participants completed the instruments, a report was generated through the online portal, presenting a profile for each participant on each of the six measured areas. Scores reflect high and low scores based on the five-point Likert scale. A score ranging from 25-30 indicated a participant had great concern about an area of workforce readiness. In comparison, a score ranging from 7-12 meant a participant had little concern. Scores totaling six or less indicated the participant was not concerned. The instrument does not provide a composite score; only scores for the six areas indicating perceived workforce readiness. The WRI was used as a pretest and posttest in the study. As indicated in Figure 2, all participants completed the posttest. The tests were both proprietary and were purchased from the respective testing companies MHS and JIST for use in the study. Both are copywritten documents and, therefore, could not be published in the study.

Each research objective in the study reflects data that was gathered and tested. The Survey Map, Table 2, illustrates the link between each research objective and questions from the instruments, EQ-i 2.0, and WRI. Research objectives linked to each instrument. The research objectives guided the study, and the instruments enabled the researcher to obtain appropriate data. The research objectives below match with corresponding questions and instruments.

Table 2

*Survey Map*

Research Objectives	Survey Questions	Instrument
RO1: Describe the demographic characteristics of the study's participants, including age, gender, and student employment position.	Q1-Q3	EQ-I 2.0
RO2: Identify the emotional intelligence of student employees.	Q4-Q136	EQ-I 2.0
RO3: Compare the emotional intelligence of student employees completing emotional intelligence training to student employees without completing emotional intelligence training.	Q4-Q136	EQ-I 2.0
RO4: Identify perceived workforce readiness of student employees.	Q1-Q36	WRI
RO5: Compare the perceived workforce readiness of student employees completing emotional intelligence training to student employees without completing emotional intelligence training.	Q1-Q36	WRI

## Validity and Reliability of the Instruments

The validity of an instrument remains vital to the research as the estimated truth of results impacts the study (Shadish et al., 2002). The reliability of an instrument is defined as the consistency of its output over time (Shadish et al., 2002). Since the instrument creation in 1980, the validity and reliability of the BarOn EQ-i have been tested (Bar-On, 2013). Bar-On spent 17 years revising the instrument through the review of literature and feedback from healthcare professionals. The 1997 version was validated using factor analysis and item analysis (Bar-On, 2013). Statistical findings during both the development and initial piloting of the instrument create the 15 subscales, 133

question instrument. Peers of Bar-On vetted the BarOn EQi by normed the piloting of the instrument on more than 3,800 adults in North America. After this process, BarOn then submitted the instrument for commercial use. The new version, EQ-i 2.0, revisions were made to the questions to clarify wording and remove the clinical language. The review also changed the wording in the instrument to diminish social/cultural bias (James, 2018). The new instrument has both strong internal consistency and test-retest reliability (MHS Assessments, 2018). Decades of extensive global use of the instrument enhances its external validity (MHS Assessments, 2018). The Cronbach's alpha coefficients for all the EQ-i subscales are high, indicating strong internal consistency. The internal consistency coefficients score of .76 indicates good reliability. These coefficients were based on seven population samples, including North America. (Bar-On, 1997)

The Work Readiness Inventory (WRI) is the second version of an earlier instrument by Brady (2010) consisting of 45 items and only four constructs. After a factor analysis of the instrument, the survey was revised, yielding the current version. The content validity of the instrument was tested in a study using three field experts producing positive results (Brady, 2010). The concurrent validity of the instrument, tested in three separate studies, demonstrates the WRI's criterion validity (Brady, 2010). The validity indicates the ability of the instrument to test for the constructs specified successfully. The reliability of the instrument was tested through split-half reliability tests. Both had positive results, confirming the reliability of the instrument. In addition, the test-retest reliability of the instrument has been tested with a median Pearson  $r$  for the six measures. Indicating the strength of the instrument's usage in a test-retest study. After determining the validity and reliability of instruments, additional factors contribute to the

rigor used in a study. Also important to a research study is the maintenance of the data and confidentiality of the research process.

### Confidentiality

Confidentiality undergirds ethical research and serves as a foundation of respect for participants (Wiles, Crow, Heath, & Charles, 2008). This study ensures the confidentiality of participants by keeping all data collected safely stored and only released with permission from participants. The providers of the assessments, Career Solutions JIST and Multi-Health Systems, provide secure networks with individual login required before each instrument completion. The researcher's access to the data happens through a secure log in and password to view group reports. Access to the database housing the information is only available to the researcher and the technical support staff of the instrument providers. While confidentiality protects information, permission to participate in a study protects participants. Part of ensuring the safety of participants requires approval from the Institutional Review Board.

### Protection of Human Subjects

The University's Institutional Review Board (IRB) reviews each research study using human subjects. Institutional review boards establish guidelines for monitoring research and ensuring the subjects are fully informed of the risks or benefits of participation (Edgar & Rothman, 1995). The study sought approval for this research in agreement with the established guidelines regarding human subjects. In addition to the IRB application, all documents and communication proposed for participants were submitted to the IRB for approval. No data was collected without the approval of the IRB. Participants were provided consent (Appendix C) to take part in the study by

reading a statement and indicating an agreement to consent by checking a box, entering their student ID, and then entering the instruments. All human subjects were over 18 years of age. Involvement in the study posed no known physical or emotional risks associated with participating.

### Data Collection

The study began upon approval from the IRB. An endorsement from the Division of Student Affairs remains essential to the study. The Vice-President of Student Affairs supported this research and volunteered to encourage department heads to assist in the implementation of the study. A letter of support from the Vice President and permission to conduct the study are included as Appendix D. Once the initial email from the Vice President of Student Affairs reached the directors of departments, the timeline for the study began. Week one of the study started with the distribution of an email from the department directors to student employees (Appendix E). All the communication pieces used to contact participants are identified in Appendices F-K. An initial email, Appendix F, introduced the study and the researcher and provided a link to the instruments for participants. Participants were then directed to a webpage with informed consent clarification and a checkbox to mark indicating an agreement to participate. Once consent was given, participants had access to the instruments via the same web page collecting consent data.

All participants completed an online informed consent form by reading the information provided, entering their student ID's, and checking a box on the form agreeing to participate in the study. Identified in Appendix E, the consent form informed the participants of the purpose of the study, what the data would be utilized for, and

provided possible consequences of participation. Also, all participants in the test group receiving the training completed an additional informed consent stating they received training as part of the involvement in the study. Having human subjects in a study required intentional communication to ensure those participants were well informed during their participation in the study.

Research indicates response rates increase with the aid of several strategies (Schaefer & Dillman, 1998). Multiple contacts with the participants increase the likelihood of survey completion via email. Schaefer and Dillman (1998) assert that personalization of the communication between the researcher and participant increases participation. The emails were addressed and personalized to individuals by name to apply this strategy. The use of incentives to stimulate survey completion is part of the revised version of Dillman's total design method (Dillman, 2007). The use of token financial incentives increases response rates and has proven significantly more effective with respondents (Dillman, 2007). Week two consisted of thanking respondents and introducing the incentives, a gift card raffle, and reminding those who had not completed the instruments of the upcoming deadline. A text message, Appendix G, was distributed to participants reminding them to complete the pretest. In week three of the study, the researcher sent an email to participants with training logistics information. Three opportunities to participate in training were presented to the participants, permitting registration for training that best fits their schedule. During week four of the study, the training was scheduled to occur. Due to severe weather, the University was closed for a day during week four in which training was scheduled. Because of this, one training had

to be canceled and rescheduled for a week later. This unforeseen interruption delayed the process of the study by one week.

A commercial, off the shelf, training module from the Association of Talent Development (ATD) was utilized in this study as the EI training intervention. The training book, titled *Emotional Intelligence Training*, is a fully developed curriculum for emotional intelligence training. The training, authored by Karl Mullen, represents one of a collection of pieces of training endorsed by the ATD as a part of a Trainer's Workshop Series. Professionals in the training industry vetted the material; produced in 2016 (ATD, 2018). Mullen is a corporate trainer, author, and counseling psychologist specializing in emotional intelligence with 30 years of experience in the training industry. The ATD serves as an organized group of professionals in the areas of training, talent development, instructional design, and workplace learning (ATD, 2018). The predesigned training, intended for specific time allotments of four or eight hours, remains customizable by the unit. The training consists of four hours of activities and lectures. The four-hour training, designed with seven learning objectives, gives participants a well-rounded picture of emotional intelligence by identifying emotions, managing emotions, and leveraging emotions for success. The training presented in five to ten-minute increments fluctuates between lecture and learning activities. Nine activities directly related to the seven learning objectives drive the lecture content to the application. The facilitator guide provides a step by step reference for the presenter on each PowerPoint slide, lecture note, and activity.

In week six, an email, Appendix J, with the links to the posttest instruments, was distributed to participants in test and control groups. During week six, a reminder text



message, Appendix K, was distributed to participants with links to the instruments.

During week seven, thank you emails, Appendix I, were distributed to participants, and incentives were reiterated to participants to stimulate completion of the study. An email reminder (Appendix L) was sent to department heads with details on the progress of the research. The email requested they prompt employees to complete the posttest. In week eight, the researcher prepared the initial data gathered for comparison to posttest data. Collection of completed posttests continued in week eight, with thank you emails distributed to participants.

Week nine focused on finalizing data collection, creating a report of data, and the awarding of incentives. Those who completed the study, as determined by the Solomon four-group design, were sent a link to register for the incentives. The incentives, eight \$25 gift cards donated by Aramark and Barnes and Noble, were selected using a random number generator in the presence of the researcher's committee chair. Participants were notified via email, and gift cards were mailed to winners. Table 3 includes a plan for collecting data.

Table 3

*Data Collection Plan*

Week	Task
Week Zero	Obtained IRB approval.
Week One	Vice-President of Student Affairs sent email asking for support of study to  Division of Student Affairs department heads (Appendix D).

Table 3(*continued*)

Week	Task
	Distributed email from department heads to participants about study and incentives (Appendix E).
Week Two	<p>Sent participants email reminder to complete pretest and reminder of incentives (Appendix F).</p> <p>Sent text reminder to complete pretest (Appendix G).</p>
Week Three	Sent email asking participants to sign up for emotional intelligence training (Appendix H).
Week Four	<p>Conducted emotional intelligence training.</p> <p>Sent thank you emails to test group and reiterate incentives to test and control groups (Appendix I).</p>
Week Five	<p>Sent email reminder about posttest to test and control groups (Appendix J).</p> <p>Sent reminder text to test and control groups about posttest (Appendix K).</p>
Week Six	<p>Sent email to department heads on progress of study asking them to encourage employees to complete posttest (Appendix L).</p> <p>Sent thank you emails to participants (Appendix I).</p>
Week Seven	Collected posttest data.

Table 3 (*continued*)

Week	Task
Week Eight	Sent thank you emails to participants. (Appendix I)
	Selected gift card recipients randomly and mail to winners.
	Analyzed data using SPSS.
	Created report using results.

The demographic data collected via the EQ-i 2.0 was stored safely through the Multi-Health systems secure server. All information was accessible to the researcher via a secure login and password. The EQ-i 2.0 and WRI data were available through a researcher login and password set by the researcher. The data sets were then downloaded into Microsoft Excel before being loaded into Statistical Package for Social Sciences (SPSS) for analysis. The data analysis plan follows below.

#### Data Analysis

Data analysis converts raw data to statistical information to illustrate the impact of the study. The data collected for this study was imported from Multi-Health Services and Career Readiness JIST from which the online instruments were purchased. The data sets were downloaded from the respective secure servers to Microsoft Excel then loaded into the SPSS software for analyzation. The types of data that were analyzed were nominal, ordinal, and interval. Nominal data organizes information into two or more categories (Lunenburg & Irby, 2008). Ordinal data place information in rank order (Hinton, 2004). Interval Data is information presented in intervals because the gap between consecutive numbers is always the same (Hinton, 2004).

### *Descriptive Statistics and Comparison of Means*

Descriptive statistics and a comparison of means were used to determine if the intervention influenced the posttest scores of participants. Descriptive statistics “describe data in terms of measures of central tendency” (Fink, 2003, pg. 134). This type of statistic describes the study’s basic characteristics of the data. Simply, the descriptive statistics describe what the data shows (Fink, 2003).

To analyze Research Objective 1, descriptive statistics were used to describe the participants using the demographic information provided, including age, gender, and student employment position. The descriptive statistics determine the mean and standard deviation. These descriptive statistics identify the demographic depiction of the members of all four groups in the study. The mean identifies the average numeric representation of the data. The standard deviation reveals the spread of the data near the mean (Fink, 2003). The data generated from these descriptive statistics described the information in a manner that clarifies the results and reveals the patterns generated by the data.

Research Objective 2 utilizes similar descriptive statistics of mean and standard deviation. To analyze Research Objective 4, descriptive statistics determined the mean and standard deviation of the WRI data.

### *Mann-Whitney $U$ and Wilcoxon signed-ranks test*

Research Objective 3 used a Mann-Whitney  $U$  test to determine if pretest sensitization occurred. The researcher used the Mann-Whitney  $U$  test because the design separated the data into two independent samples (Huck, 2012). A series of four tests were executed as part of the Solomon four-group design. In Figure 3 below, the four tests are illustrated, demonstrating the separate Mann-Whitney tests, which were run in each of

the four steps. Each of the four tests assesses for a specific type of pretest sensitization. The four tests allow the researcher to separate the assessment effects from the intervention effects (Song & Ward, 2015). The four specific test effects are (a) the independent variable, (b) pretesting, (c) pretesting and measuring, and (d) random assignment. Song and Ward (2015), the reason that assessment effects may weaken a researcher's proficiency in making precise conclusions regarding intervention effects, thus rendering the four-step process essential and unique to the Solomon four-group design.

- Diagrammed as
 

– Experimental Group 1:	R	$O_1$	X	$O_2$
– Control Group 1:	R	$O_3$		$O_4$
– Experimental Group 2:	R		X	$O_5$
– Control Group 2:	R			$O_6$
- Effect of independent variable ( $O_2 - O_4$ ) & ( $O_5 - O_6$ )
- Effect of pretesting ( $O_4 - O_6$ )
- Effect of pretesting & measuring ( $O_2 - O_5$ )
- Effect of random assignment ( $O_1 - O_3$ )

*Figure 3.* Solomon Four-Group design and four-test process

After the four tests were completed, then the researcher determined if the intervention had an effect. EQ-i group scores of the pretest and posttest were then tested using the Wilcoxon test. The data generated compared the scores of the control and test groups and determined if a statistical difference existed after the training. The group scores of the WRI described the workforce readiness of the participants. The Research Objective 5 WRI data was analyzed using a Mann-Whitney *U*. The Mann-Whitney *U* design allows the researcher to measure the effect of an independent variable on a dependent variable (Hinton, 2004). The researcher then utilized the Wilcoxon signed-

ranks test to compare the pretest and posttest data from the WRI to determine if statistical significance occurred due to the training. Table 4 illustrates the analysis process showing the research objective, data category and statistical test.

Table 4

*Data Analysis Plan*

Research Objective	Data Category	Statistical Test
RO1: Describe the demographic characteristics of the study's participants, including age, gender, and student employment position.	Nominal (gender and employment) Interval (age)	Descriptive Statistics (frequency distribution) Descriptive Statistics (mean and standard deviation)
RO2: Identify the emotional intelligence of student employees.	Interval	Descriptive Statistics (mean & standard deviation)
RO3: Compare the emotional intelligence of student employees with emotional intelligence training to student employees without emotional intelligence training.	Ordinal	Mann-Whitney <i>U</i> and Wilcoxon signed-ranks test
RO4: Identify perceived workforce readiness of student employees.	Interval	Descriptive Statistics (mean and standard deviation)
RO5: Compare the perceived workforce readiness of student employees with emotional intelligence training to student emotional intelligence training.	Ordinal	Mann-Whitney <i>U</i> and Wilcoxon signed-ranks test

## Threats to Validity and Reliability

Shadish, Cook, and Campbell (2002, p. 34) define validity as the “approximate truth of an inference,” implying that if something is valid, then it remains true. Two kinds of validity impact experimental design, internal and external validity. While internal validity concerns the findings within the research, external validity refers to the degree to which the information gained through the study can apply to the larger population (Shadish et al., 2002).

### *Internal Validity*

The threats to internal validity that may impact the study are as follows: history, testing, and experimental mortality. The testing threat remains essential to the study due to pretest and posttest dynamics. Because both the pretests and posttests are the same, the danger of a participant learning how to master the instrument to improve their score is a testing threat (Slack & Draugalis, 2001). History could be a threat because the researcher cannot control for unplanned events that could happen during the study. The work atmosphere could be different in different parts of the division of student affairs and impact the participants during the study (Slack & Draugalis, 2001). Experimental mortality remains a threat to the validity of the study due to the length of the study from pretest to posttest. From pretest to posttest, a total of seven weeks passed. Experimental mortality refers to the drop-out rate of participants from start to finish (Slack & Draugalis, 2001).

### *External Validity*

The threats to external validity that could impact this study include the interaction of testing and population validity (Center for Innovation in Research and Teaching,

2018). Interaction of testing concerns the pretest and the influence it may have on participants. Exposure to the subject matter could cause participants to be more sensitive to the treatment, consequently influencing their reaction to the intervention (Center for Innovation in Research and Teaching, 2018). Hence the use of the Solomon four-group design process combats the threat through the design (Braver & Braver, 1998). The lack of diversity in a sample and lack of a representative sample remains a threat to the study. Due to this threat, the researcher used a university that is representative of national trends and a sample reflective of the university profile.

### *Reliability*

Reliability is defined as the “consistency” of a study (Shadish et al., 2002, p. 511). The threats to reliability to this quantitative quasi-experimental study lie in the consistency of the selection of groups, administration of the instruments, execution of the training, and collection of data. The researcher should be uniform in the selection of participants by using a sample reflective of the greater population and constructing groups reflective of the sample. The instruments should be delivered and collected at regular intervals, as outlined in the data collection plan. The training executed for the test group in three different sessions should be uniform with no inconsistencies in material, timelines, and learning outcomes. The researcher achieved this by delivering content already piloted, using a vetted unit of training, and serving as the only presenter of the information. As referred to earlier, the collection of data remains structured through a data collection plan with firm dates. These plans to ensure reliability attempt to deter the threats mentioned. One of the perceived threats to the study is a set of limitations on the research, which are described in the following paragraph.



### *Limitations*

A set of limitations guide the study. Limitations are factors the researcher cannot control that may impact outcomes (Shadish, Cook, & Campbell, 2002). Four limitations exist for this study and include 1) the length of the instrument; 2) self-reporting data; 3) built-in biases of student participants; 4) and generalizability.

#### *Length of the Instrument*

The instrument, the EQ-i 2.0, is one of several instruments used to measure emotional intelligence. The EQ-i 2.0 is the latest revision of the Bar-On EQi. While the Bar-On EQi is the most peer-reviewed instrument, the Bar-On EQi is a longer, 133 question instrument (Mayer, Salovey & Caruso, 2004). Participants needed approximately 20 minutes to complete the EQ-i 2.0 (Multi-Health Systems, 2018). The attention span of current students is five to twelve minutes (Therrell & Dunneback, 2015). Thus, the duration of the test presents a limitation.

#### *Self-Reporting Data*

A self-reporting instrument, like the EQ-i 2.0, impacts the data collected. Individual biases of the surveyed population may exist. Critics of emotional intelligence self-reporting instruments claim these instruments only indicate preferences and not actual ability (Ferris, 2010).

#### *Participant Bias*

Another limitation of the study includes the built-in biases students may have regarding their emotional intelligence. The participant could have a bias about their level of emotional intelligence and report an overvalue or undervalue of their ability (Coskun, Oksuz, & Yilmaz, 2017). The Millennial generation of college students indicates an

awareness of their emotional intelligence (Landrum, 2017). Preconceived notions about their level of emotional intelligence could inflate the initial benchmark data.

*Pretest Sensitization and Solomon four-group design*

An additional limitation of the study concerns the meticulousness of the study design and the added thoroughness of the four-step sensitization determination process. Campbell and Stanley (1963), describe the Solomon four-group design as rigorous and prestigious because of its complex execution. The four-step process permits the researcher to assess the key results of the assessment, the main effects of the assessment, and interaction between the two (Song & Ward, 2015). While the processes necessary to achieve these results indicate the rigor of the design, they also demonstrate the complexity of the design because of the number of comparisons required (Braver & Braver, 1998). The intricacy of the design, the time to execute all the necessary steps in application and analysis, the required components of completion for participants, and the impact of pretest sensitization all constitute limitations of the study.

Song and Ward (2015) term pretest sensitization as assessment effects. While Solomon's four-group design tests for pretest sensitization, the application of the four-step process, and in one case, its results, proved a limitation of the study. The results of executing the four-step process demonstrated sensitization in the second and third tests. Prior research indicated once results indicated sensitization, the remaining steps should halt (Braver & Braver, 1998; Campbell & Stanley, 1963; Song & Ward, 2015). By ceasing the four-step process, final results could not be generalized. Therefore, no findings could be determined in that specific application, establishing pretest sensitization as a limitation.

### *Generalizability*

The last limitation of the study relates to the sample. The sample includes student workers at one university. Limiting the sample to student employees in the Division of Student Affairs at one university limits the generalizability of results to all college student employees.

### *Summary*

This quantitative, quasi-experimental study examined the influence of emotional intelligence training on Millennial student employees on a university campus. The five research objectives of the study guided the direction and implementation of the methodology. These research objectives linked the research tools, the EQ-i 2.0 and the WRI, to the statistical output of the study. The instruments measured the emotional intelligence and workforce readiness of all participants in a pretest and posttest application. The use of a test and control group and the intervention of training the test group, indicate a quasi-experimental study. The statistical measures utilized in the study showed the demographic depiction of participants and the proposed influence of the training on participants. The data collection and data analysis plans provided structure to the study, recognizing threats to reliability and validity. The execution of these plans drove the consistency and clarity of the study. The results of data collection are analyzed in Chapter IV, and Chapter V examines the applicability of the research for the future.

## CHAPTER IV – RESULTS

The 21st-century workplace, identified as a highly competitive environment, creates a need for employees with soft skills (Dean & East, 2019). Millennial college students graduate without the necessary soft skills to excel in the workplace (Schneider, 2015). Soft skills are indispensable in the workplace, making emotional intelligence a critical component of achievement in the workplace (Dean & East, 2019). Research shows employers hire individuals because of their hard or technical skills, yet fire employees because of a lack of soft or interpersonal skills (Connolly & Reincke, 2017; Subhashini, 2008; M & Rajasekaran, 2018). A mastery of soft skills demonstrates high emotional intelligence (Wheeler, 2016). Training of employees became a part of workplace culture, and 21st-century employers emphasize the need to train for soft skills and emotional intelligence early in the hiring process to maximize productivity and ease the transition process from a new employee to a seasoned employee (Dean & East, 2019).

The purpose of this study was to determine the influence of emotional intelligence training on college student employee workforce readiness. Five research objectives focus on the demographics, emotional intelligence, and workforce readiness of participants. This chapter describes the results of the study.

The population of the study includes undergraduate college students at a regional mid-sized four-year university. The students were employees of the Division of Student Affairs. Human Resources at the university provided the list of student employees, including contact information via email.

Two survey instruments were utilized for the study; one measures emotional intelligence and the second workforce readiness. Data for this study were collected using two instruments. The researcher used descriptive and inferential statistics to analyze the data collected. Descriptive statistics illustrate the characteristics of a group (Hinton, 2004). Using this data from a sample group describes a larger population and allows the researcher to make determinations about the larger population (Fisher & Marshall, 2009). Fisher and Marshall (2009) describe descriptive statistics as the technique using numbers and graphs to organize and analyze data. Descriptive statistics also allow the researcher to describe the sample before delving deeper into the further analysis (Hinton, 2004). Inferential statistics enable the researcher to deduce information about the data (Hinton, 2004). A researcher can also use inferential statistics to predict whether an aspect of an experiment causes a significant effect (Haneda, Knijnenburg, & Wijshoff, 2005). Inferential statistics are classified as either parametric or nonparametric (Allua & Thompson, 2009). These inferential statistics circumscribe an array of tests determining statistical significance (Allua & Thompson, 2009).

The researcher used two instruments in the course of the study and utilized two different companies in securing and transferring the data. Multi-Health Systems provided the EQ-i 2.0 to the researcher and stored the data during the study. The EQ-I 2.0 data was securely stored on the Multi-Health Systems server and transferred as a Microsoft Excel file. The file contained the complete data set of all tests for the four groups in the study. The second instrument used in the study was the Work Readiness Inventory (WRI). JIST Career Solutions provided the researcher with the WRI and

supplied the researcher with a work readiness profile on each participant who was securely transferred to Microsoft Excel before data analysis.

### Data Results

The researcher conducted a study of undergraduate college student employees who were actively employed by the Division of Student Affairs at a regional four-year university. A comprehensive list of 465 student employees was provided to the researcher by Human Resources in the spring of 2019. The students were then randomly divided into four groups as part of the Solomon Four research design. All 465 of the students were contacted for participation in the study, and 100 students participated in one phase of the research. This yielded a response rate of 21.5% response rate. Group 1 contained 24 participants; Group 2 had 37, Group 3 had 21, and Group 4 had 18. Group 1 is the pretest/treatment/posttest group, Group 2 is the pretest/posttest group, Group 3 is the treatment/posttest group, and Group 4 is the posttest group. Participants are defined as individuals who completed all the phases of the study as required by their random group assignment. For example, a group one participant had to complete both pretests, complete training, and complete the posttests to be counted as a study participant. While other students assigned to another group may have completed one part of the required phase, but not another, therefore they could not be counted as a participant. After reviewing the guidelines of the Solomon four-group design, only 31 individuals could be identified as participants. Based on the description above, the participant response rate was determined as 7.1 %. The participant groups were subsequently distributed as follows: Group 1: 3, Group 2: 5,

Group 3: 5, and Group 4: 18. Table 5 below further illustrates the group distribution and definitions.

Table 5

*Illustration of Participant Groups*

Group number	Solomon four-group design by group	Original group distribution	Number of individuals participating in at least one phase of design	Number of participants completing all phases of the design)
1	Pretest/training/posttest	116	24	3
2	Pretest/posttest	116	37	5
3	Training/posttest	116	21	5
4	Posttest	117	18	18
	Total	465	100	31

Research Objective One (RO1)

Research Objective One (RO1) characterizes the demographic description of the participants in the study. These undergraduate students were student employees of the Division of Student Affairs at the university. The selected demographics include gender, age, and student employment position. The demographic data was reported on the EQ-I 2.0 and analyzed and reported in Table 5 and Table 6. A descriptive statistic, frequency distribution analysis was used to measure these demographic characteristics. As Hinton (2004), explains descriptive statistics allow the researcher to present the data in a clear and coherent format. The data is both nominal and interval. Reporting it

separately delineates the differences in the type of data reported. The narratives following Table 5 and Table 6 explain and clarify the results of the analysis.

The researcher utilized a frequency distribution analysis for the nominal demographics of gender and student employment position. Table 6, below, provides a summary of the number participants per demographic (*n*) and the percentage related to that number (%).

Table 6

*Participant Demographics for Nominal Data*

F	<i>n</i>	%
Gender		
Female	25	80.6
Male	4	12.9
Undisclosed	2	6.4
Total	31	100.0
Student Employment Position		
Health & Wellness	2	6.4
Administrative Support	1	3.2
Education	8	25.8
Service	3	9.6
Agriculture	1	3.2
Maintenance	1	3.2
Business	1	3.2
Undisclosed	14	45.1
Total	31	100.0

Of the 31 study participants, 25 or 80.6% identified as female while four or 12.9% identified as male. Two participants 6.4% chose not to disclose their gender. The participants were asked to identify their current employment position. The data shows the participants in seven categories with the eighth group notating those who did not disclose their current position. The data reported the following information



regarding employment. Fourteen (45.1%) participants did not disclose their employment, one (3.2%) reported employment in business, one (3.2%) reported maintenance work, one (3.2%) reported working in agriculture, three (9.6%) reported service, eight (25.8%) reported working in education, one (3.2%) reported working in administrative support, and the remaining two (6.4%) reported working in health and wellness.

In the second phase of the descriptive statistics, the researcher determined the mean and standard deviation for the interval demographic of age. Table 7, below, provides a summary of the total number of participants ( $n$ ), the mean ( $M$ ) and the standard deviation ( $SD$ ) of the sample.

Table 7

*Participant Demographics for Interval Data*

Demographic	$n$	$M$	$SD$
Age (in years)	31	20.930	1.067

The table above reports the mean ( $M$ ) or the average age of the 31 ( $n$ ) participants in the study as 20.93. Revealing the average age of the participants was nearly 21. The standard deviation ( $SD$ ) of the participant group was 1.067, indicating the range of ages was very close to the mean. The standard deviation, coupled with the mean reflects the average score of a group and the dispersion of the scores (Huck, 2012). The standard deviation describes the data as a measure of the spread of scores about the mean (Hinton, 2004). The standard deviation provides the researcher the basic distance a score is from the mean in the provided data set (Hinton, 2004). The

data, therefore, indicates the age range of the participants and identifies them as the end of the Millennial cohort.

### Research Objective Two (RO2)

Research Objective Two (RO2) identifies the emotional intelligence of student employees. The following tables, Table 8-Table 10, reflect the mean (*M*) and standard deviation (*SD*) of the participants. Each table represents the average scores of the participants or of a specific group and the “measure of spread about the mean” (Hinton, 2004, p. 16). The standard deviation is often used to measure variability in research (Huck, 2012). Huck states the standard deviation is viewed as “defining the length of an imaginary yardstick” (2012, p. 39). The standard deviation permits the researcher to determine conclusions about scores if the distribution is normal (Trochim, 2020).

The data in Table 8 depicts the mean (*M*) pretest scores and posttest scores of the EQ-I 2.0, and the standard deviation (*SD*) across the sample. The number (*n*) of participants completing the pretest (*n* = 8) and the number completing the posttest (*n* = 31). The comparison of the overall pretest and posttest scores and the analysis of the scores is summarized below in the table.

Table 8

*Participant pretest and posttest scores from the EQ-I 2.0*

Scales/Subscales	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Self-Perception	94.89	10.30	98.24	13.38
Self-Regard	30.33	5.83	32.15	7.23
Self-Actualization	36.22	3.93	38.58	4.94
Emo. Self-Awareness	28.33	3.46	27.52	4.20
Self-Expression	82.22	6.82	84.79	10.71
Emotional Expression	28.11	6.35	27.64	6.28

Table 8 (*continued*)

Scales/Subscales	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Assertiveness	25.67	2.50	26.82	3.60
Independence	28.44	4.28	30.33	5.54
Interpersonal	95.67	12.27	95.64	10.43
Interpersonal Relationships	32.56	5.77	34.49	4.15
Empathy	37.78	4.97	36.03	5.17
Social Responsibility	25.33	3.54	25.12	3.25
Decision Making	88.67	8.12	90.82	13.29
Problem Solving	27.44	4.72	29.97	6.23
Reality Testing	30.33	3.04	31.15	4.89
Impulse Control	30.89	4.78	29.70	5.53
Stress Management	81.78	11.21	89.55	13.22
Flexibility	22.00	5.27	26.88	5.80
Stress Tolerance	28.56	1.94	30.21	5.72
Optimism	31.22	6.06	32.46	6.24
Happiness	29.56	5.43	33.33	6.12

The table above, Table 8, describes the mean and standard deviation of the pretest and posttest sub-score and composite scores of the EQ-I 2.0, which was used to measure the emotional intelligence of participants. The data table illustrates the five clusters of subscales from the instrument. The clusters are *Stress-Management*, *Self-Perception*, *Self-Expression*, *Interpersonal*, and *Decision Making*. The data shows the subscales with the largest breadth of standard deviation, pre and posttest include the *Self Perception* composite (*SDs* = 10.30, 13.38), *Interpersonal* composite score (*SDs* = 12.27, 10.43), *Decision Making* sub-score (*SDs* = 8.12, 13.29), and *Stress Management* sub-score (*SDs* = 11.21, 13.22). The data indicates the greatest variance of scores in

both pretest and posttest occurred in these areas of the instrument. These larger standard deviations indicate the range of the scores on these sub-scales had a larger span, indicating a much greater variance in individual scores (Trochim, 2020). The remaining scores in the pre and posttest indicate much smaller standard deviations, suggesting the range of scores reported a smaller variance.

While one cannot determine statistical significance from descriptive statistics, the researcher can note observable differences in scores (Fisher & Marshall, 2009; Huck, 2012; Hinton, 2004). EI scores lower than 90 are considered lower by the interpretation standards of the EQ-i. Scores <90 indicate lower emotional intelligence, while scores >110 indicate higher emotional intelligence (Multi-Health Systems, 2020). A mean score of 88.64 indicates the participants completing the pretest ( $n = 9$ ) are considered at a lower emotional intelligence. According to the EQ-i researcher portal of Multi-Health Systems (2020), the mean composite scores from Table 8 can indicate the participants likely possess the following attributes: 1) difficulty understanding their own emotions and the emotions of others, 2) difficulty expressing thoughts and feelings, 3) difficulty making relationships and receiving feedback, 4) difficulty with everyday stressors and 5) difficulty working under pressure and are resistant to change (Multi-Health Systems, 2020). The posttest scores in Table 8 indicate a median score of 91.806. The score reveals the participants taking the posttest ( $n=33$ ) have average emotional intelligence. The mean composite of the posttest participants likely possess the following attributes: 1) average sense one's emotions, 2) reasonably adept at articulating emotions, 3) prepared to work in teams 4) comfortable making decisions, and 5) demonstrates resiliency (Multi-Health Systems, 2020).

The data in Table 9 depicts the mean (*M*) pretest scores and posttest scores of the EQ-I 2.0, and the standard deviation (*SD*) across Group 1 and Group 2. In a Solomon four-group analysis, only Groups 1 and 2 receive the pretest (Campbell & Stanley, 1963). The analysis of the pretest scores is summarized in the table below.

Table 9

*Participant pretest scores from the EQ-i 2.0 disaggregated by group*

Scales/Subscales	Group 1		Group 2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Score	86.25	9.96	90.56	3.08
Self-Perception	93.00	12.19	96.40	9.71
Self-Regard	29.25	4.35	31.20	7.19
Self-Actualization	36.50	6.03	36.00	1.87
Emotional Self-Awareness	27.25	4.19	29.20	2.95
Self-Expression	81.50	8.58	82.80	6.06
Emotional Expression	28.25	5.19	28.00	7.78
Assertiveness	26.50	2.52	25.00	2.55
Independence	26.75	3.59	29.80	4.66
Interpersonal	91.25	14.06	99.20	10.85
Interpersonal Relationships	29.75	7.50	34.80	3.19
Empathy	35.50	3.79	39.60	5.41
Social Responsibility	26.00	4.08	24.80	3.42
Decision Making	87.25	8.06	89.80	8.93
Problem Solving	24.25	1.71	30.00	4.90
Reality Testing	31.00	2.83	29.80	3.42
Impulse Control	32.00	4.76	30.00	5.15
Stress Management	78.25	13.33	84.60	9.79
Flexibility	20.75	5.56	23.00	5.43
Stress Tolerance	29.25	1.71	28.00	2.12
Optimism	28.25	8.02	33.60	3.05
Happiness	27.00	5.66	31.60	4.83

The table above, Table 9, describes the mean of the pretest composite scores and subscores for Group 1 and Group 2 of the EQ-I 2.0 which was used to measure the emotional intelligence of participants. The data indicates the mean for Group 1 is ( $M = 86.25$ ) while the mean for Group 2 is ( $M = 90.56$ ). The standard deviation for the groups follows, Group 1 ( $SD = 9.96$ ) and Group 2 ( $SD = 3.08$ ). Group 1 had a much larger standard deviation indicating the variance of scores was wider. A larger variance of scores indicates a larger variance of the scores from the mean (Trochim, 2020). The means of the composite scores although similar, one cannot infer similar group scores, as the mean is only an average of all the scores combined (Hinton, 2004). The standard deviations on the sub-scores of *Self Perception* ( $Ms = 12.19, 7.71$ ), *Interpersonal* ( $Ms = 14.06, 10.85$ ), and *Stress Management* ( $Ms = 13.33, 9.79$ ) were disproportionately greater than the other sub-scores. In comparison, the higher scores indicate a greater variance of individual scores by participants on these sub-scores (Huck, 2012). In contrast, the highest mean indicated in the table from both groups was in *Self Perception* ( $Ms = 93.0, 96.4$ ). *Self-Perception* is a composite score of *Self-Regard*, *Self-Actualization*, and *Emotional Self Awareness* and defined as one's feelings about his/herself and emotions (Multi-Health Systems, 2020). In conclusion, the data showed varied means and standard deviations by score and by group. One observable note from Table 9 concerns the total score means of Group 1 and Group 2. As defined by the EQ-i researcher portal, the average scores ( $M = 86.25, 90.56$ ) indicate Group 1 as having lower emotional intelligence, while Group 2 has average emotional intelligence (Multi-Health Systems, 2020).

The data in Table 10 depicts the mean (*M*) and the standard deviation (*SD*) of the EQ-I 2.0, across the posttest scores disaggregated by group. In a Solomon four-group analysis all four groups receive the posttest (Campbell & Stanley, 1963). The analysis of the posttest scores is summarized in the table below.

Table 10

*Participant posttest scores of the EQ-i disaggregated by group*

Scales/Subscales	Group 1		Group 2		Group 3		Group 4	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Score	83.62	9.29	91.88	5.08	95.72	10.15	92.88	10.39
Self-Perception	91.80	12.87	97.80	4.27	103.20	17.71	98.78	14.15
Self-Regard	29.00	3.32	31.80	6.50	32.80	11.80	32.94	7.03
Self-Actu.	36.00	6.04	38.40	2.70	40.60	7.64	38.78	4.32
Em. Self-Awa.	26.80	4.82	27.60	1.95	29.80	3.90	27.06	4.62
Self-Expression	77.00	14.35	85.00	8.57	89.80	8.17	85.50	10.43
Emotional Expr.	24.80	8.87	30.60	7.13	29.80	1.79	27.00	6.02
Assertiveness	25.60	2.07	24.20	3.11	28.00	4.30	27.56	3.65
Independence	26.60	6.35	30.20	4.32	32.00	6.63	30.94	5.31
Interpersonal	86.80	11.78	97.80	8.67	98.60	9.71	96.67	10.20
Interp. Rel.	30.20	4.97	35.60	2.30	33.60	4.04	35.61	3.76
Empathy	32.60	4.72	38.20	4.55	38.20	3.42	35.78	5.58
Social Resp.	24.00	4.12	24.00	3.00	26.80	4.49	25.28	2.72
Decision Making	87.40	9.13	89.00	12.17	96.60	9.53	90.67	15.57
Problem Solving	27.80	2.17	29.40	6.19	30.80	8.53	30.50	6.62
Reality Testing	30.40	5.77	30.00	1.87	33.60	4.22	31.00	5.47
Impulse Control	29.20	5.68	29.60	7.02	32.20	3.11	29.17	5.81
Stress Mgt.	76.60	10.99	89.80	8.70	90.40	14.69	92.83	13.08
Flexibility	20.20	4.82	25.00	4.30	27.00	5.57	29.22	5.13
Stress Tolerance	29.00	4.64	31.00	4.24	30.20	7.29	30.33	6.26
Optimism	27.40	6.73	33.80	4.60	33.20	7.56	33.28	5.93
Happiness	30.00	8.46	31.60	4.93	34.80	7.86	34.33	5.25

The table above, Table 10, describes the mean of the posttest composite scores and subs-scores for Groups 1 through 4 of the EQ-I 2.0 which was used to measure the emotional intelligence of participants. The data indicates the means are Group 1 ( $M = 83.92$ ), Group 2 ( $M = 91.88$ ), Group 3 ( $M = 95.72$ ), and Group 4 ( $M = 92.88$ ). The standard deviations for the groups are as follows, Group 1 ( $SD = 9.29$ ), Group 2 ( $SD = 5.08$ ), Group 3 ( $SD = 10.15$ ), and Group 4 ( $SD = 10.39$ ). The smaller standard deviation in Group 2 reveals the variance between the individual scores of this group were of a reduced range and indicate a smaller variance from the mean. The sub-score with the highest mean across all four groups was Self-Perception ( $Ms = 91.80, 97.80, 103.20, \text{ and } 98.78$ ). Multi-Health Systems (2020), the system administrator for the EQ-I 2.0, identifies Self-Perception as a composite of Self-Regard, Emotional Self-Awareness and Self-Actualization. This composite score indicates the participants feelings about self and their emotions (Multi-Health Systems, 2020). The sub-score with the lowest mean across all groups is Social Responsibility ( $Ms = 24, 24, 26.8, \text{ and } 25.28$ ). This subscale is defined as the ability for an individual to contribute and cooperate as a part of one's social group (Multi-Health Systems, 2020). The data reported demonstrates varied means and standard deviations across groups.

Information from the EQ-i researcher portal, indicates the average posttest total scores from Groups 2, 3 and 4 ( $M = 91.88, 95.72, 92.88$ ) indicate the participants have an average emotional intelligence, while Group 1 average posttest total score ( $M = 83.62$ ) indicates low emotional intelligence (Multi-Health Systems, 2020).



### Research Objective Three (RO3)

Research Objective Three (RO3) compares the emotional intelligence of student employees with intelligence training to student employees without emotional intelligence training. The Solomon four-group design analysis is based on a series of checks which determine if there is a pretest sensitization (Howard, Tang, & Austin, 2015). The pretest sensitization has been otherwise referred to as test reactivity (Campbell & Stanley, 1963). This reactivity or sensitization refers to the participant's desire to supply the researcher with what they need (in posttest) because they have previously seen the assessment (prior in pretest) (Campbell & Stanley, 1963). Treatment effects can be blurred or reduced because of the use of a pretest and can cause the sensitization referred to above (van Engelenburg, 1999). This experimental design tests the influences of independent variables on dependent variables where an intervention, pretest, and posttest method are used (van Engelenburg, 1999). The researcher determined if X (EI training) affected O (the test) (Braver & Braver, 1998).

To address the four phases of the pretesting to test sensitization, the researcher used a series of nonparametric Mann-Whitney U tests. An ANOVA is traditionally used in the analysis of a Solomon four-group test (van Engelenburg, 1999). Due to the small sample size, a Mann-Whitney group test was utilized (Huck, 2012; Hall R. M., 2013). Huck (2012) states if sample sizes are less than six, a nonparametric test should be utilized in the data analysis. A Mann-Whitney test is used to determine if differences exist between two groups. The Mann-Whitney was used because the data used was from a Likert-type inventory and had an ordinal value (Huck, 2012). The Mann-Whitney is also less likely to produce a Type II error (Huck, 2012). A Type II

error occurs when a null hypothesis is not rejected and the null hypothesis is essentially false (Huck, 2012). A researcher seeks to avoid any type of error (Type I or Type II) when analyzing collected data (Hinton, 2004). Finding non-statistically significant differences in the four checks on random assignment creates a solid base for the researcher to compare the treatment effect (van Engelenburg, 1999). This approach served to isolate the potential treatment effect and determine if the treatment may have influenced the EI scores.

#### *Solomon Four-Group, Test A*

The first check, identified as test A, determines if the pretesting influenced results. To determine this effect, the researcher tests to see if Group 3 posttest scores are significantly different than Group 4 posttest scores (Braver & Braver, 1998). Neither of these groups experienced a pretest. The Mann-Whitney test compared the ranked data of the two groups and yielded the  $U$  value (Hinton, 2004). The  $U$  value is the distribution of ranks between two groups (Huck, 2012). The analysis includes a sum of ranks shown in Table 11, below, and depicts the Mann-Whitney  $U$ , the Standard Error ( $SE$ ) and the  $p$ -value ( $p$ ).

Table 11

#### *Test A of Pretest Effects*

Scales/Subscales	$U$	$SE$	$p$
Total Score	39.50	13.41	0.69
Self-Perception	34.00	13.40	0.45
Self-Regard	41.00	13.26	0.80
Self-Actualization	29.50	13.34	0.26
Emo. Self-Awareness	28.00	13.33	0.23
Self-Expression	34.00	13.39	0.45

Table 11 (*continued*)

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Emotional Expr.	35.50	13.38	0.49
Assertiveness	41.00	13.30	0.80
Independence	37.00	13.36	0.59
Interpersonal	40.00	13.39	0.75
Empathy	32.00	13.39	0.36
Social Resp.	29.00	13.27	0.26
Decision Making	34.00	13.37	0.45
Problem Solving	42.50	13.38	0.86
Reality Testing	32.50	13.37	0.36
Impulse Control	28.00	13.38	0.23
Stress Management	50.00	13.38	0.75
Flexibility	55.50	13.37	0.45
Stress Tolerance	45.00	13.36	1.00
Optimism	44.50	13.35	0.97
Happiness	36.00	13.32	0.54

In the case of this analysis, there was no statistical difference in ranks in the *U* values of the total score or the sub-scores. Before the study and collection of data began a researcher selects an alpha to determine the level of significance (Huck, 2012). The alpha used in this study is generally used in social science research (Hinton, 2004). The selection of an alpha for a study is relevant because it directly relates to the subsequent power of the test (Hinton, 2004). The alpha of .05 indicates a test of medium power (Hinton, 2004). The alpha is set before the study and collection of data to test what is known as the null hypothesis (Huck, 2012). Setting an alpha allows the researcher a level of confidence in comparing the data without mistakes or errors (Type I or Type II; Huck, 2012). The researcher tries to avoid a Type I error by choosing alpha, the significance level (Hinton, 2004). In this study the alpha of .05 provides the

researcher a five in 100 chance, or smaller, of falsely rejecting the null hypothesis (Hinton, 2004). “The alpha level, therefore, directly determines the probability that a Type I error will be committed” (Huck, 2012, p. 149). In RO3 the alpha of .05, the known distribution, was used to directly compare the  $p$ -value, the unknown distribution. For this study the alpha level of .05 was used for the statistical tests where a  $p$ -value was generated. The  $p$ -value is a single number summary of the data collected (Huck, 2012). The single number is then compared to the established alpha of .05 to determine if the data generated by statistical test is significant. The data would be considered significant if the  $p$ -value is less than alpha ( $p < .05$ ). No statistical significance was shown because the  $p$ -values of all the scales and subscales were greater than alpha (.05). Considering this, the researcher found no evidence that the very act of pretesting unduly influenced results and did not cause test sensitization.

#### *Solomon Four-Group, Test B*

The second check, identified as test B, determines if there are significant factors (confounds) beyond the control of the researcher that may influence results (Braver & Braver, 1998). Specifically, the Mann Whitney  $U$  test analyzed the comparison of the ranked data of the two groups (Group 2 and Group 4) to determine the  $U$  (Hinton, 2004). The Mann-Whitney was used to determine if the Group 2 pretest scores were significantly different than Group 4 posttest scores (van Engelenburg, 1999). Neither of these groups experienced a treatment (EI training). Table 12 below depicts the Mann-Whitney  $U$ , the Standard Error ( $SE$ ) and the  $p$ -value ( $p$ ).

Table 12

*Test B of Pretest Effects*

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Total Score	47.00	13.41	0.91
Self-Perception	51.00	13.40	0.69
Self-Regard	53.00	13.33	0.59
Self-Actualization	61.50	13.30	0.23
Emo. Self-Awareness	27.00	13.34	0.20
Self-Expression	51.50	13.39	0.64
Emotional Expr.	38.00	13.39	0.64
Assertiveness	63.00	13.29	0.20
Independence	52.00	13.37	0.64
Interpersonal	38.50	13.39	0.64
Interpersonal Rel.	53.50	13.29	0.54
Empathy	28.50	13.38	0.23
Social Resp.	50.00	13.28	0.75
Decision Making	43.50	13.39	0.91
Problem Solving	49.00	13.38	0.80
Reality Testing	51.00	13.38	0.69
Impulse Control	40.00	13.36	0.75
Stress Management	62.00	13.38	0.23
Flexibility	72.50	13.39	0.04
Stress Tolerance	51.00	13.33	0.69
Optimism	48.50	13.37	0.80
Happiness	60.00	13.35	0.29

All sub-scores but one (*Flexibility*) and the composite EI score showed no significance because all the *p*-values reported were greater than alpha .05. This value was set as the standard for this study and discussed earlier in this section. There was one instance of concern as it related to Test B pretest effects. In the subscale of *Flexibility*, the distribution of scores was found to be statistically significant ( $p = .037$ ). This result showed significance because  $.037 < .05$ . In the literature, Braver and Braver

(1998) caution the researcher against dismissing the validity of the data because of a statistically significant result. Due to the power of the test checking the data, the evidence of a significant sub-score should not be adopted as irrefutable (Braver & Braver, 1998).

The research about Solomon four-group design analysis varies in clarifying next steps if a significant result in test B of the pretest effects occurs (Braver & Braver, 1998; Huck, 1973; van Engelenburg, 1999). Because of the contrasting literature, the researcher moved forward with the third test.

#### *Solomon Four-Group, Test C*

The third check, identified as test C, determines if the pretest had any effect on the treatment, EI training, itself. To determine this effect the researcher tests to see if Group 1 posttest scores are significantly different than Group 3 posttest scores (Braver & Braver, 1998). Both of these groups experienced a treatment (EI training), but only one experienced the pretest. Specifically, this Mann Whitney *U* test analyzed the comparison of the ranked data of the two groups (Group 1 and Group 3) to determine the *U* (Hinton, 2004). The Mann-Whitney was used to determine if the Group 1 posttest scores were significantly different than Group 3 posttest scores (van Engelenburg, 1999). Table 13 below depicts the Mann-Whitney *U*, the Standard Error (*SE*) and the *p*-value (*p*).

Table 13 *Test C of Pretest Effects*

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Total Score	20.500	4.773	.095
Self-Perception	18.000	4.773	.310

Table 13 (*continued*)

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Self-Regard	20.000	4.743	.151
Self-Actualization	20.500	4.758	.095
Emotional Self-Awareness	17.500	4.758	.310
Self-Expression	20.500	4.773	.095
Emotional Expression	15.000	4.758	.690
Assertiveness	17.000	4.758	.421
Independence	20.000	4.773	.151
Interpersonal	20.000	4.787	.151
Interpersonal Relationships	18.500	4.773	.222
Empathy	21.500	4.743	.056
Social Responsibility	17.000	4.670	.421
Decision Making	20.000	4.773	.151
Problem Solving	20.000	4.714	.151
Reality Testing	16.000	4.787	.548
Impulse Control	16.500	4.773	.421
Stress Management	21.000	4.787	.095
Flexibility	21.000	4.787	.095
Stress Tolerance	16.500	4.758	.421
Optimism	20.500	4.758	.095
Happiness	19.500	4.773	.151

None of the posttest scores, including total EI or any subscale, between Group 1 and Group 3 demonstrated significance because all the *p*-values reported were greater than alpha (.05). Considering this, the researcher found no evidence that the pretest had any direct effect on the treatment itself because no significance was found.

### *Solomon Four-Group, Test D*

The fourth check determines if the pretest itself effected behavior, independent of the treatment (Braver & Braver, 1998). The researcher tests for a significant difference between Group 2 posttest scores and Group 4 posttest scores (Huck & Sandler, 1973). Neither of these groups experienced a treatment, but one experienced a pretest. The Mann Whitney *U* test analyzed the comparison of the ranked data of the two groups (Group 2 and Group 4) to determine the *U* (Hinton, 2004). The Mann-Whitney was used to determine if the Group 2 posttest scores were significantly different than Group 4 posttest scores (van Engelenburg, 1999). Table 14 below depicts the Mann-Whitney *U*, the Standard Error (*SE*) and the *p*-value (*p*).

Table 14

#### *Test D of Pretest Effects*

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Total	20.500	4.773	.095
Self-Perception	18.000	4.773	.310
Self-Regard	20.000	4.743	.151
Self-Actualization	20.500	4.758	.095
Emotional Self-Awareness	17.500	4.758	.310
Self-Expression	20.500	4.773	.095
Emotional Expression	15.000	4.758	.690
Independence	20.000	4.773	.151
Interpersonal	20.000	4.787	.151
Interpersonal Relationships	18.500	4.773	.222
Empathy	21.500	4.743	.056
Social Responsibility	17.000	4.670	.421
Decision Making	20.000	4.773	.151
Problem Solving	20.000	4.714	.151



Table 14 (*continued*)

Scales/Subscales	<i>U</i>	<i>SE</i>	<i>p</i>
Reality Testing	16.000	4.787	.548
Impulse Control	16.500	4.773	.421
Stress Management	21.000	4.787	.095
Flexibility	21.000	4.787	.095
Stress Tolerance	16.500	4.758	.421
Optimism	20.500	4.758	.095
Happiness	19.500	4.773	.151

None of the posttest scores, total EI or any sub-score between Group 2 and Group 4 were statistically significant. The remaining sub-scores and the total EI score showed *p*-values were greater than alpha .05. Considering this, the researcher found no evidence that the pretest had a significant effect on results, independent of the treatment.

#### *Four Test Summary*

After the four tests and having general confidence in the checks on randomization, the researcher proceeded to test the effect of the treatment in the pretest and posttest groups (Group 1 and Group 2). Through the four tests, the researcher determined there was no test desensitization in the study. The researcher proceeded to compare the emotional intelligence of student employees with emotional intelligence training to student employees without emotional intelligence training, as stated in RO3.

#### *Wilcoxon Signed-Rank test*

The final step in the Solomon four-group design was to test the effect of the treatment in the pretest and posttest groups, identified as Group 1 and Group 2 (Braver & Braver, 1998). This analysis was conducted using Wilcoxon's signed-rank test.

Wilcoxon's signed-rank test is a nonparametric test used to determine if there is a difference between two groups. Because of small sample sizes, the Wilcoxon was utilized (Huck, 2012). The Wilcoxon was used for this analysis because of the pre and posttest data with comparable groups (Huck, 2012). In cases where the sample sizes are larger, the parametric t-test would generally be utilized (Braver & Braver, 1998). The Wilcoxon test is often referred to as a matched pairs test because it compares the scores of one sample with the scores of a second sample (Hinton, 2004; Huck, 2012). The Z scores in the table below, indicate differences in the scores of the two groups (Hinton, 2004). The *p*-value scores indicate if there is significance from the Wilcoxon test (Laerd Statistics, 2020). Table 15 shows the comparison of groups (Z) and the *p*-value (*p*).

Table 15

*Wilcoxon's Signed-Rank Test Results*

Scales/Subscales	Group 1		Group 2	
	<i>Z</i>	<i>p</i>	<i>Z</i>	<i>p</i>
Total Score	-0.73	0.465	-0.674	0.5
Self-Perception	-0.365	0.715	-0.73	0.465
Self-Regard	-0.557	0.577	-0.68	0.496
Self-Actualization	-0.552	0.581	-1.511	0.131
Self-Expression	-0.73	0.465	-1.089	0.276
Emotional Expression	-0.73	0.465	-1.761	0.078
Assertiveness	-0.535	0.593	-0.68	0.496
Independence	0	1.00	-0.272	0.785
Interpersonal	-1.461	0.144	-0.674	0.5
Interpersonal Relationships	-0.184	0.854	-0.736	0.461

Table 15 (*continued*)

Scales/Subscales	Group 1		Group 2	
	<i>Z</i>	<i>p</i>	<i>Z</i>	<i>p</i>
Empathy	-1.633	0.102	-0.921	0.357
Social Responsibility	-1.841	0.066	-0.962	0.336
Decision Making	-0.365	0.715	-0.405	0.686
Problem Solving	-1.473	0.141	-0.736	0.461
Reality Testing	-0.552	0.581	-0.368	0.713
Impulse Control	-1.069	0.285	-0.135	0.893
Stress Management	-1.461	0.144	-2.032	0.042
Flexibility	-1.289	0.197	-1.219	0.223
Stress Tolerance	-0.73	0.465	-1.826	0.068
Optimism	-1.841	0.066	-0.272	0.785
Happiness	-0.736	0.461	0	1.00

As indicated by *p*-value scores in Table 15, the composite scores for both Group 1 and Group 2 are greater than alpha (.05). This indicates the intervention of EI training did not influence the emotional intelligence or EI composite scores, of the study participants. The data revealed one subscale, *Stress-Management*, of Group 2 with a *p*-value = .042. Group 2 (non-treatment group) reported a decrease in their self-reported *Stress-Management* sub-scale compared to those who received the training, Group 1, that did not report a *p*-value less than .05. While the *p*-value for *Stress-Management* may indicate a statistically significant outcome, it could indicate an influence of EI training on Group 1 even though Group 2 group did not receive training.

#### Research Objective Four (RO4)

Research Objective Four (RO4) identifies the perceived workforce readiness of college student employees. The following tables, Table 17-Table 18, reflect the mean (*M*) and standard deviation (*SD*) of the participants. Each table represents the average scores of the participants or a specific group and the standard deviation (Hinton, 2004). The standard deviation is often used to measure variability in research (Huck, 2012). If the distribution of scores is normal, the researcher may make conclusions about the data (Trochim, 2020).

The data in Table 16 depicts the mean (*M*) pretest scores and posttest scores of the WRI, and the standard deviation (*SD*) across the sample. The number (*n*) of participants completing the pretest (*n* = 8) and the number completing the posttest (*n* = 31). The comparison of the overall pretest and posttest scores and the analysis of the scores is summarized below in Table 16. The Work Readiness Inventory does not have an overall composite score, only six sub-scores reflecting the participant's self-evaluation of their workforce readiness (Career Readiness JIST, 2010). The participants ranked each of the thirty-six Likert scale questions from 1-5 (Career Readiness JIST, 2010). The scale listed rankings from 1 (not concerned) to 5 (very concerned) (Career Readiness JIST, 2010).

Table 16

*Participants across all groups pretest and posttest scores from the WRI*

Scales	Pretest (n=8)		Posttest (n=31)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Flexibility	11.00	3.42	12.77	3.87
Communication	11.38	4.81	12.77	3.88
Health- Safety	8.63	1.60	10.39	3.15
Responsibility	11.38	4.41	12.87	3.90
Self-View	11.25	0.89	13.90	3.42
Skills	12.25	3.45	13.23	3.22

The table above, Table 16, describes the mean and standard deviation of the pretest subscores for Group 1 and Group 2 of the WRI, which was used to measure the workforce readiness of participants. The mean describes the average score, and the standard deviation denotes the range of scores from the mean (Hinton, 2004). The participants completing the pretest ( $n = 8$ ) report a smaller standard deviation on the areas of *Health-Safety* ( $SD = 1.60$ ) and *Self-View* ( $SD = .89$ ). A smaller standard deviation indicates a smaller variance of scores by the participants (Huck, 2012). The pretest group showed a larger standard deviation on *Flexibility* ( $SD = 3.42$ ), *Communication* ( $SD = 4.81$ ), *Responsibility* ( $SD = 4.41$ ), and *Skills* ( $SD = 3.45$ ). The scores indicate a slightly larger variance of the scores from the mean due to the reported standard deviations (Hinton, 2004). The posttest group ( $n = 31$ ) posted standard small standard deviations on all subscales *Flexibility* ( $SD = 3.87$ ), *Communication* ( $SD = 3.88$ ), *Health-Safety* ( $SD = 3.15$ ), *Responsibility* ( $SD = 3.90$ ), *Self-View* ( $SD = 3.42$ ), and *Skills* ( $SD = 3.22$ ). A statistical significance cannot be determined from descriptive statistics, but the researcher can note observable differences in scores (Fisher &

Marshall, 2009; Huck, 2012; Hinton, 2004). Notable from the table, the Health-Safety average ( $M_s = 8.63, 10.39$ ) in both pretest and posttest indicates the participants were the least concerned with health and safety in the workplace.

The data in Table 17 depicts the mean ( $M$ ) pretest scores of the WRI, and the standard deviation ( $SD$ ) across the two groups completing the pretest Group 1 and Group 2). The number ( $n$ ) of participants completing the pretest per group are ( $n = 3$ ) and ( $n = 5$ ). The comparison of the overall pretest scores and the analysis of the scores is summarized below in the table.

Table 17

*Participant pretest scores from the WRI disaggregated by group*

Scales	Group 1( $n = 3$ )		Group 2 ( $n = 5$ )	
	$M$	$SD$	$M$	$SD$
Flexibility	8.00	1.00	12.80	3.03
Communication	13.00	1.73	10.40	5.98
Health & Safety	8.00	1.00	9.00	1.87
Responsibility	6.67	1.16	14.20	2.59
Self-View	11.00	1.00	11.40	0.89
Skills	11.00	3.61	13.00	3.54

The table above, Table 17, describes the mean and standard deviation of the pretest subs-cores for Group 1 and Group 2 of the WRI which was used to measure the workforce readiness of participants. The mean describes the average score and the standard deviation denotes the range of scores from the mean (Hinton, 2004). The participants completing the pretest in Group 1 ( $n = 3$ ) report a small standard deviation on all but one subscale, *Skills*. The sub-scores indicating a minimal variance of scores from the mean due to the reported standard deviations are as follows: *Flexibility* ( $SD =$

1.0), *Communication* ( $SD = 1.73$ ), *Health-Safety* ( $SD = 1.0$ ), *Responsibility* ( $SD = 1.16$ ), and *Self-View* ( $SD = 1.0$ ). The one subscale with a larger standard deviation reported was *Skills* ( $n = 3.61$ ). Group 2 ( $n = 5$ ) reports the smallest standard deviation in the areas of *Health-Safety* ( $SD = 1.87$ ) and *Self-View* ( $SD = .89$ ). This indicates a smaller variance in the scores of this group from the mean in these selected subscales (Huck, 2012). The variance for the remaining sub-scores are *Flexibility* ( $SD = 3.03$ ), *Communication* ( $SD = 5.98$ ), *Responsibility* ( $SD = 2.59$ ), and *Skills* ( $SD = 3.54$ ). The mean of the *Responsibility* sub-score ( $M = 6.67$ ) can indicate the Group 1 participants were the least concerned with potential job responsibilities. While Group 2 participants could demonstrate they were somewhat concerned due to sub-score means. The *Health-Safety* score ( $M = 9.00$ ) was lower and can indicate the participants were not concerned with the health and safety of their potential workplace.

The data in Table 18 depicts the mean ( $M$ ) pretest scores of the WRI, and the standard deviation ( $SD$ ) across the two groups completing the posttest, Group's 1-Group 4. The number ( $n$ ) of participants completing the pretest per group are ( $n = 31$ ). The comparison of the overall pretest scores and the analysis of the scores is summarized below in Table 18.

Table 18

*Participant posttest scores from the WRI disaggregated by group*

Scales	Group 1 (n = 3)		Group 2 (n = 5)		Group 3 (n = 5)		Group 4 (n = 18)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Flexibility	7.67	1.53	12.40	3.21	14.80	1.30	13.17	4.16
Communication	11.67	5.86	10.40	5.68	14.80	2.78	13.06	3.15
Health-Safety	14.00	4.36	8.00	1.00	10.00	1.58	10.56	3.22
Responsibility	7.00	1.00	14.40	2.70	12.40	3.13	13.56	3.91
Self-View	12.33	5.13	11.20	0.84	14.60	4.04	14.72	3.18
Skills	11.67	5.51	13.00	2.92	14.80	3.11	13.11	3.05

The table above, Table 18, describes the mean of the posttest subs-scores for Groups 1 through 4 of the WRI, which was used to measure the workforce readiness of participants. The means and standard deviations vary across the groups. The scores illustrate no patterns notable through this type of descriptive statistic. The highest mean ( $M=14.80$ ) occurs in the *Skills* sub-score of Group 3 and the lowest mean ( $M = 7.00$ ) occurs in the *Skills* sub-score of Group 1. The greatest variance in the table noted by the largest standard deviation occurs in Group 1, sub-score *Communication* ( $SD = 5.86$ ). The smallest variation in reported in the data above occurs in Group 2, *Self-View* ( $SD = .84$ ).

The average *Skills* score for Group 3 could demonstrate the group's concern about the skills they will need to utilize in the workplace. Also, observable are the higher average sub-scores of Group 1 *Health-Safety*, Group 2 *Responsibility*, and Group 4 *Self-View* ( $Ms = 14.00, 14.40, 14.72$ ) indicating the participants concern over these aspects of the workplace.



### Research Objective Five (RO5)

Research Objective Five (RO5) compares the perceived workforce readiness of college student employees with emotional intelligence training to student employees without emotional intelligence training. The Solomon four-group design analysis is based on a series of checks which determine if there is a pretest sensitization (Howard, Tang, & Austin, 2015). The sensitization refers to the participants desire to supply the researcher with their desired outcomes (in posttest) because they have previously completed the assessment (prior in pretest) (Campbell & Stanley, 1963). This study uses an experimental design which tests the influences of independent variables on dependent variables where an intervention, pretest and posttest method are used (van Engelenburg, 1999). The researcher determined if X (EI training) affected O (the test) (Braver & Braver, 1998).

To address the four phases of the pretesting to test sensitization, the researcher used a series of nonparametric Mann-Whitney U tests. As stated earlier, an ANOVA is traditionally used in the analysis of a Solomon four-group test (van Engelenburg, 1999). Due to the small sample size a Mann-Whitney group test was utilized (Huck, 2012; Hall R. M., 2013). Huck (2012) states if sample sizes are less than six, a nonparametric test should be utilized in the data analysis. The Mann-Whitney test determines if differences exist between two groups. Finding non-statistically significant differences in the four checks on random assignment creates a valid base for the researcher to compare the treatment effect (van Engelenburg, 1999). This approach served to isolate the potential treatment effect and determine if the treatment may have influenced the WRI scores.

### *Solomon Four-Group, Test A*

The first check, identified as test A, determines if the pretesting influenced results. The researcher tests to see if Group 3 posttest scores are significantly different than Group 4 posttest scores to determine if there is a pretest effect (Braver & Braver, 1998). Neither of these groups experienced a pretest. The Mann-Whitney test compared the ranked data of the two groups and yielded the  $U$  value (Hinton, 2004). The  $U$  value is the distribution of ranks between two groups (Huck, 2012). The analysis includes a sum of ranks, shown in Table 19 below, and depicts the Mann-Whitney  $U$ , the Standard Error ( $SE$ ) and the  $p$ -value ( $p$ ).

Table 19

#### *Test A of Pretest Effects*

Scales	$U$	$SE$	$p$
Flexibility	33.00	13.36	0.37
Communication	27.50	13.28	0.19
Health-Safety	49.50	13.33	0.74
Responsibility	52.00	13.37	0.60
Self-View	43.00	13.30	0.88
Skills	28.50	13.31	0.22

None of the posttest scores between Group 3 and Group 4 were valued below .05. The  $\alpha$  utilized for this study is (.05). For the purpose of determining significance in this study the researcher will compare the  $p$ -values to alpha to determine significance. Considering this, the researcher found no evidence that the act of pretesting unduly influenced results and did not cause test sensitization.

### *Solomon Four-Group, Test B*

The second check, identified as test B, determines if there are significant factors beyond the control of the researcher that may influence results (Braver & Braver, 1998). Specifically, the Mann Whitney *U* test analyzed the comparison of the ranked data of two groups (Group 2 and Group 4) to determine the *U* (Hinton, 2004). The Mann-Whitney was used to determine if the Group 2 pretest scores were significantly different than Group 4 posttest scores (van Engelenburg, 1999). Neither of these groups experienced a treatment (EI training). Table 20 below depicts the Mann-Whitney *U*, the Standard Error (*SE*) and the *p*-value (*p*).

Table 20

#### *Test B of Pretest Effects*

Scales	<i>U</i>	<i>SE</i>	<i>p</i>
Flexibility	46.00	13.35	0.94
Communication	54.00	13.31	0.50
Health- Safety	59.00	13.32	0.29
Responsibility	39.00	13.36	0.65
Self-View	80.00	13.28	0.01
Skills	46.00	13.31	0.94

There was one instance of concern as it related to Group 2 pretest scores and Group 4 posttest scores. In the subscale of *Self-View*, the distribution of scores was statistically significant ( $p = .007$ ), suggesting that some external confound beyond the control of the researcher may have unduly influenced results as they pertain to the *Self-View* subscale. The remaining subscales and the total WRI did not significantly differ. Braver and Braver (1998) caution the researcher against dismissing the validity of the

data because of a statistically significant result. The research about Solomon four-group design analysis varies in clarifying next steps if a significant result in test B of the pretest effects occurs (Braver & Braver, 1998; Huck, 1973; van Engelenburg, 1999). Because of the contrasting literature, the researcher moved forward with the third check.

#### *Solomon Four-Group, Test C*

The third check, identified as test C, determines if the pretest had any effect on the treatment, the EI training. To determine this effect, the researcher tests to see if Group 1 posttest scores are significantly different from Group 3 posttest scores (Braver & Braver, 1998). Both groups experienced a treatment (EI training), but only one (Group 1) experienced the pretest. Specifically, this Mann Whitney *U* test analyzed the comparison of the ranked data of the two groups (Group 1 and Group 3) to determine the *U* (Hinton, 2004). The Mann-Whitney was used to determine if the Group 1 posttest scores were significantly different than Group 3 posttest scores (van Engelenburg, 1999). Table 21 below depicts the Mann-Whitney *U*, the Standard Error (*SE*), and the *p*-value (*p*).

Table 21

#### *Test C of Pretest Effects*

Scales	<i>U</i>	<i>SE</i>	<i>p</i>
Flexibility	15.00	3.33	0.02
Communication	10.00	3.33	0.45
Health-Safety	2.00	3.31	0.10
Responsibility	15.00	3.33	0.02
Self-View	10.00	3.35	0.46
Skills	10.00	3.31	0.45

Two of the posttest scores (*Flexibility* and *Responsibility*) between Group 1 and Group 3 were statistically significant ( $ps = .024$ ). Considering this, the researcher observed some evidence that the pretest sensitized the participants in the areas of *Flexibility* and *Responsibility*, thereby biasing those treatment effects. This poses a threat to external validity in the form of an interaction effect of testing. Due to the results of three sub-scores in two of the prechecks (B and C) the researcher concluded the four-step analysis (Braver & Braver, 1998) Considering the results of the data, the researcher sought clarification on the sensitization and generalization of results. Song and Ward (2015) note although great effort is exerted to form designs which “control assessment effects in intervention trials, these designs can control some, but not all, assessment effects” (p. 242).

#### *Pretest Summary*

Considering the review of the literature and the analysis of the data, the researcher concludes pretest sensitization existed. Results cannot be generalized if pretest sensitization exists (Huck & Sandler, 1973). Because of the determination of pretest sensitization, the researcher could not determine if X effects O (Braver & Braver, 1998). The researcher could not continue further in the analysis to determine if the treatment (EI training) had an effect.

#### Summary

Chapter IV summarizes the data analysis of the study. Through the use of non-parametric tests and descriptive statistics, the researcher tested the data generated through the use of two instruments, EQ-i 2.0 and WRI. The data described the participants, compared pretest and posttest scores, and through a series of tests the

Solomon four-group design determined pretest sensitization. Although the study's data did reflect prior research, opportunities for further research surfaced. Chapter V which follows, describes the findings, conclusions, and recommendations of this study examining the influence of emotional intelligence training on college student employees.

## CHAPTER V – FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Today's workforce seeks an employee with strong soft or interpersonal skills (Dean & East, 2019). These soft skills are linked to the emotional intelligence of individuals (Rateau et al., 2015). While employers seek these skills, Millennial graduates enter the workplace unprepared and lack soft skills (Murti, 2014). By mastering soft skills and raising emotional intelligence, performance in the workplace increases (Singh, 2008). The previous four chapters discussed the gap between Millennial college student employee's emotional intelligence, workforce readiness, and the influence of emotional influence training. A literature review, Chapter II, showed a depth of research on Millennials, emotional intelligence, and the skills gap between the two. Although limited research exists on the influence of emotional intelligence training on college students. The research methodology of this study was presented in Chapter III, while the results of the study were presented in Chapter IV.

In Chapter V, the researcher provides findings, conclusions, and recommendations determined through data analysis in Chapter IV. The study utilized an experimental quantitative design, the Solomon four-group design. The researcher employed the use of two instruments in the pretest, two instruments in the posttest, and an intervention of emotional intelligence training across four groups, both control, and test. Descriptive and inferential statistics were utilized to examine five research objectives associated with the emotional intelligence and workforce readiness of Millennial college student employees. The researcher used both the EQ-I 2.0 and the WRI to survey college student employees in the Division of Student Affairs at a four-year university. Two electronic instruments were utilized with the four groups over

eight weeks. In addition to the instruments, an intervention of emotional intelligence training was used with two of the four groups. The data collected were then inputted into SPSS and analyzed. Frequency distribution, mean, standard deviation, Mann-Whitney *U*, and Wilcoxon matched-pairs analyses were utilized for data analysis.

### Limitations

Shadish et al. (2002) identify limitations as those factors which could influence a study that is out of the locus of control of the researcher. The study measured the influence of emotional intelligence training on the emotional intelligence and workplace preparedness of the participants. The survey data measuring the emotional intelligence and workforce readiness were both self-reporting instruments. A self-reporting instrument reports on the perception or preferences of the participant, not the actual ability (Ferris, 2010).

A second limitation of the study was the duration of completing both tests, totaling nearly 35 minutes. Today's college student is inherently limited in free time. Also, the length of the study from the first phase to the last phase was eight weeks. Thus, asking for a substantial commitment of follow-through for participants to remain as participants in the study over the eight weeks. Survey fatigue appears to be a byproduct of both the instrument lengths and study duration.

Lastly, the size of the sample challenged the generalizability of the study. While a group of 465 students was targeted for the study, only 31 completed all of the necessary steps of the survey design to be considered participants. Although a sufficient number of college student employees were targeted in the creation of the study, very few of those students completed all of the steps necessary to be considered



participants. The rigor of the study design and the length of the study could have been factors in the lack of participation. While strategies were used to increase engagement, such as incentives and personalized communication, the eight-week length of the study could have caused participant fatigue and thereby negatively impacting participation. The unexpected rescheduling of a training date due to a university weather closing could have also impacted the number of training participants. Twice as many students signed up to be trained than those who participated.

Another factor in the low participation rate can be attributed to participant mortality. The attrition of participants which happens during a study from beginning to end is defined as participant mortality (Huck, 2012). In some cases, a student was expected to complete two testing instruments, complete training, and again complete the same two testing instruments. The sheer volume of work it took to participate in the study could have caused participant mortality. With a small number of participants, the results of the survey cannot be generalized for widespread use.

### Findings, Conclusions, and Recommendations

The following chapter, Chapter V, describes a summary of the findings based on Chapter IV content, statistical analysis. The findings of a study enhance the body of research, building on previous information. Insight is gained through the study findings regarding the influence of emotional intelligence training on college student employee's workforce readiness. In addition to the findings, the researcher provides conclusions and recommendations for future research. The results of this study indicate three key findings. The paragraphs which follow outline each finding, conclusion, and recommendation.

### *Finding One*

*For the participants in this study, emotional intelligence training did not influence the emotional intelligence of college student employees.*

The emotional intelligence of groups of college student employees at a four-year institution was measured using an instrument to determine baseline emotional intelligence and their emotional intelligence after training. The EI scores for these students indicated no increase as a result of participating in the training. Therefore, for the participants in this study, one cannot infer that the emotional intelligence training delivered in this study caused individuals to become more emotionally intelligent.

### *Conclusions*

The results of the study did not show emotional intelligence training as an impact on the emotional intelligence of college student employees. Emotional intelligence identifies as the ability for individuals to understand their own emotions and the emotions of others (Berrocal & Extremera, 2006). Goleman's (1995) research implies emotional intelligence can be developed and maintains the skills related to emotional intelligence are improvable. Sadri (2012) indicates training regarding the factors of emotional intelligence can increase an individual's ability to understand their emotions and recognize the emotions of others. The study did not support earlier research on the impact of EI training on one's emotional intelligence.

A factor that could have influenced the information about emotional intelligence is the actual training. The training was conducted in one four-hour session. Research has shown training influences levels of emotional intelligence, yet the quantity or duration of training is not specified. One cannot determine if the type of training had

an impact. Even though the EI training was well-vetted by subject matter experts, upon the completion of the training, the content was not evaluated by participants. Length, content, timing of delivery, and repetition of material could have influenced the study.

### *Recommendations*

As Millennial college students graduate and enter the workforce, employee feedback indicates a gap in new employee soft or interpersonal skills (Komarraju, Swanson, & Nadler, 2014). Employers observed a lack of emotional intelligence as a deficit of Millennial graduates and employees (MacDermott & Ortiz, 2017). Goleman (1998) indicates the training of emotional intelligence in the workplace will impact those skills directly related to emotional intelligence, such as leadership, communication, and self-awareness. Millennials enter the workforce lacking the skills necessary to thrive (Murti, 2014). The required soft skills to excel in the workplace are not typically taught in the classroom (Rateau et al., 2015). Institutions of higher learning should adjust curriculum and adapt teaching styles to impact the development of soft skills and emotional intelligence (Sharma, 2009).

Higher Education has the opportunity to change the way students are prepared with the necessary competencies for success in the workplace. By teaching, not just hard skills or technical knowledge, universities have the chance to harness chances for skill-building in and out of the classroom. Co-curricular learning is a more holistic approach to education that develops a multitude of applicable soft skills valued in the workplace.

### *Finding Two*

*For the participants in this study, emotional intelligence training influenced the Stress-Management of college student employees.*

The emotional intelligence of groups of college student employees at a four-year institution was measured using an instrument to determine baseline emotional intelligence and their emotional intelligence after training Group 1 and Group 2. EI composite and sub-scores were compared. Of the two groups of participants Group 2, the EI score, in the area of Stress-Management, impacted the students. Group 2 indicated higher Stress-Management scores, yet they did not receive the training. While Group 1 was trained, the EI training did not influence the participant scores. Therefore, for the participants in this study, one can infer that emotional intelligence training caused individuals in Group 1 to become more self-aware of their stress management skills. Consequently, the EI scores of Group 1 were not impacted. One could argue their awareness of stress management due to training influenced their scores because they were better able to self-evaluate. This awareness allowed them to more honestly assess themselves and not show a significant difference in pre and posttest scores.

### *Conclusions*

Research indicates leaders in the workforce impact the environment with higher emotional intelligence (Krishnaveni & Deepa, 2011). Specifically, mastery of conflict management and stress management influence the positive nature of the workplace (Krishnaveni & Deepa, 2011). Stress management is one of five critical areas measured in the study through an emotional intelligence tool (Multi-Health Systems,

2018). Because stress occurs mainly as an emotional response to different provocations, research has shown emotional intelligence could assist individuals with coping and managing strong emotions like stress (Ioannis & Ionnis, 2002). How individuals react to adverse emotional experiences, specifically stress relates to the method one uses to integrate those emotions (Mayer et al., 2002). An outcome of the study concerned the group who did not receive the training, because of a difference in their stress management score. One could infer the group who received the training was influenced by their training, and the information learned, no difference appeared in their score. Because they were more self-aware in the posttest as opposed to an uneducated response in the pretest, pre and post-training scores did not indicate a change in Group 1's stress management. Training impacted their self-view and therefore could have made them more aware of an uneducated view of stress management in pretesting, causing posttest scores to be a better assessment of participant stress management.

### *Recommendations*

Managing one's emotions is a cornerstone of emotional intelligence (Mayer et al., 2011). Individuals who are more emotionally intelligent adapt better to change and have mastered the depth of their emotions (Connell & Travaglione, 2004). Goleman (1995) established stress management as a key component of emotional intelligence. Calls for further research on the relationship between stress and emotional intelligence have arisen, specifically whether EI is a "moderator of stress or a consequence" (Slaski & Cartwright, 2003, p. 238). The question arises whether a heightened awareness of one's stress and ability to manage that stress is a function of or consequence of high

emotional intelligence. Being hyper-aware of those stressful influences in one's life could contribute to one's ability to manage that stress. Further research into the relationship between stress and emotional intelligence could clarify the causal effect of stress on personal emotional management.

### Recommendations for Further Research

While prior research indicates training in the workplace can impact the emotional intelligence of employees, little research exists on the influence such training could have on college student employees. The emotional intelligence of college students and their effect on the future of workplace preparedness could change the cultural climate of the workforce. Further research on the influence of emotional intelligence training should be conducted across several universities with the same standardized training used across campuses. An enlarged pool of participants could elicit more responses and produce further generalizable results. The rigor of the design of the study should be reviewed and modified to increase participation. While the Solomon four-group design touts' rigor, a negative impact of the rigor was experienced in the time it took participants to complete the study. A simple test/retest with one control and test group may prove the best method of testing the theory regarding emotional intelligence training.

Research on the emotional intelligence of college students could impact how the next generation, Generation Z, is prepared for the workforce. As Millennials were technology natives, Generation Z is technology-saturated. Their preoccupation with digital communication methods could impact their emotional intelligence and subsequently, soft or interpersonal skills. Research providing a baseline standard for

college student emotional intelligence could provide researchers the information necessary to advise universities on potential curriculum changes. With baseline data, one can determine how those scores could be enhanced. To increase the number of participants, future researchers should consider the use of more significant incentives and ways to encourage participant follow-through. One should consider financial incentives and other incentives, especially appealing to college students. Associating a study with academic classes could also benefit future research by offering extra credit for participation. Lastly, the researcher should ensure they have full university and department buy-in for the research to assure students of expectations and benefits associated with the study. Universities and colleges can benefit from a better understanding of the implications of emotional intelligence and emotional intelligence training on graduates.

### Discussion

The first chapter of this study began with a single quote, “Don’t fall for the myth that soft skills are too intangible to improve with concrete methods” (Tulgan, 2018, p. 1). In this experimental study, the researcher set out to determine the influence of emotional intelligence training on college student employees. In the course of the process, information surfaced from the literature and the data analysis.

The study was supported by three pillars of research, Millennial college students, emotional intelligence, and workforce readiness. According to employers, college students graduate without the skills necessary to be successful in the workforce (Association of American Colleges & Universities, 2015). Even more troubling, employers are dissatisfied with graduates (Schneider, 2015). Soft or interpersonal skills

are as necessary to employers today as the skills acquired through traditional classroom instruction (Jenkins, 2017). Soft skills link to emotional intelligence, and mastering the skills can produce success in the workplace (Wheeler, 2016). Soft skills are emotional intelligence in action, and one cannot underestimate their importance in the workforce (Dean & East, 2019).

Although this study did not confirm previous research, evidence suggests a soft or interpersonal skills gap exists. Employers are not satisfied with the graduates' higher education institutions currently produce. Research exists, suggesting the need for strategies to help college students develop soft skills for the workplace. A dual responsibility rests with both employers and educators to have a well-trained workforce. Higher education has the opportunity to change curriculum, and deliver a holistic education to students, equipping them with hard and soft skills to thrive in the workplace. As generations and employer's needs change, content and delivery of education must evolve in our education system. A coordinated effort by institutions of higher learning and leaders in the workforce to strategically educate today's student could yield the results both entities desire, successful graduates positively impacting the economy. Millennial college graduates provided with critical opportunities for growth in soft skills and emotional intelligence give the employers the prepared employees they seek. By approaching the challenge of the soft skill gap jointly, and utilizing tactics based on common goals, the current generation and those to follow will not only confront workplace opposition but overcome it.



## Summary

Chapter V offered a review of the study, along with the findings, conclusions, and recommendations. The chapter provided findings as they relate to the literature. The limitations of the study, lack of generalization, self-reporting instruments, and length of the study and instruments were summarized. Also, the researcher provided recommendations for further research.

Chapter I of the study introduced the current research on the topic of emotional intelligence and the workplace preparedness of college student employees. The chapter provided background information on the three pillars of the study, emotional intelligence, workforce readiness, and college student employees. The statement of the problem, the purpose of the study, and a definition of pertinent terms anchored the components of the study. Five research objectives guided the study, and the conceptual framework illustrated the study. The delimitations of the study were defined in Chapter I, along with the significance of the study.

The second chapter reviewed the related literature on the three main components of the study, coupled with the theories that support the research on each pillar. Chapter III provided an outline of the research process and detailed descriptions of the components of the study. The third chapter also described the research design, study population, sample, and the two instruments utilized in the study. A survey map, data collection plan, and data analysis plan outlined procedures used in the study. The fourth chapter presented the data analysis and results as they pertain to the five research objectives. Chapter IV also described the step by step procedure of the Solomon four-group design. The last chapter, Chapter V, provided the three findings, conclusions, and

recommendations of the study. All of the chapters combined to explain the research, execution, and results of the study.

The emotional intelligence of today's college students has implications for the future of the workplace and higher education. After researching the Millennial college student and their impact on the current workplace, further research should be conducted to inform curriculum changes in higher education related to the development of soft skills and, ultimately, emotional intelligence. While universities and colleges across the country graduate students in record numbers, these students are equipped with skills insufficient for long-term success in the workplace. Men and women graduate without the skills to perform at peak levels in the workplace. Their lack of soft or interpersonal skills places them at a disadvantage and puts employers in the business of educating new hires with the necessary soft skills. While the researchers have pointed to emotional intelligence as an indicator of success in the workplace, those in academia have yet to adapt curriculum and teaching methods to enhance this skill. Emotional intelligence is synonymous with success, yet its early application into the workplace continues to cause a lack of adoption of emotional intelligence theory into academia. Higher education and today's employers have the opportunity to work together and produce a thriving workforce able to impact the global economy.

## APPENDIX A – EQ-i 2.0

EQ-i 2.0 Document is copywritten and cannot be reproduced for publication.

## APPENDIX B – Work Readiness Inventory

WRI- Document is copywritten and cannot be reproduced for publication.

## APPENDIX C – Informed Consent for Training

### THE UNIVERSITY OF SOUTHERN MISSISSIPPI AUTHORIZATION TO PARTICIPATE IN RESEARCH PROJECT

Participant's Name \_\_\_\_\_

Consent is hereby given to participate in the research project entitled The Influence of Emotional Intelligence Training on College Student Employees. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained by Wynde Fitts. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to Wynde Fitts at 601-467-4856. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-5997.

A copy of this form will be given to the participant.

Signature of participant

Date

Signature of person explaining the study

Date

## APPENDIX D – Vice President’s Letter

Good morning,

The Division of Student Affairs has the opportunity to be a part of an important research study. The study focuses on the influence of emotional intelligence training on college student employees. Our own Wynde Fitts will be conducting the research as part of her dissertation. I need your help in encouraging your student employees to participate in this project. The study will take place over the spring 2019 semester.

She will need your assistance with the following:

1. Forwarding a pre-constructed invitation with embedded survey links to your student employees
2. Encouraging your students to participate in the study
3. Allowing your student employees to participate in a 4 hour training
4. Compensating your employees when participating in a 4 hour emotional intelligence training

This study could position the division as leaders on our campus in preparing student employees for their future workplace. The potential learning outcomes from the study could improve student employee workplace competencies. If you have questions about the research, please contact Wynde. This is an excellent opportunity for our division to highlight learning outcomes and the value of student employees. I appreciate your support of this initiative.

SMTTT

Dee Dee Anderson  
Vice President of Student Affairs and Vice Provost

## APPENDIX E – Department Communication to Students

Dear (insert student name)

As a student employee in the Division of Student Affairs, you have been chosen to participate in a study on emotional intelligence (EI) of college student employees. You will have the opportunity to complete a self-assessment and participate in training aimed at improving your workplace skills.

By participating in this study, you will be automatically entered into a drawing for one of eight \$25 gift cards from Barnes and Noble and Eagle Dining. The gift cards will be awarded at the end of the semester. As your employer, I encourage your full participation. You will be compensated at your regular rate of pay for the 4 hour training on EI.

All information will be confidential and only viewed by the study administrator, Wynde Fitts, Associate Dean of Students. This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. There are no human risks associated with this study.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

By checking the box below consent is hereby given to participate in this research project.

**Please complete the two self-assessments attached below:**

(Insert link EQI 2.0)

(Insert link WRI)

Thank you for your participation. If you have any questions you can direct them to Wynde Fitts at [wynde.fitts@usm.edu](mailto:wynde.fitts@usm.edu).

## APPENDIX F – Reminder 1

Good morning (insert name)

*Reminder!* Please complete the two surveys below. This should only take about 20 minutes of your time. By participating you will be entered into a drawing for one of eight \$25 gift cards to Barnes and Noble or Eagle Dining.

Don't delay. Complete today.

All information will be confidential and only viewed by the study administrator, Wynde Fitts, Associate Dean of Students. This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

By checking the box below consent is hereby given to participate in this research project.

**Please complete the two self-assessments attached below:**

(Insert link EQI 2.0)

(Insert link WRI)

Thank you for your participation. If you have any questions you can direct them to Wynde Fitts at [wynde.fitts@usm.edu](mailto:wynde.fitts@usm.edu).



## APPENDIX G – Reminder text 1

Good morning

*Reminder!* Please complete the two surveys. This should only take about 20 minutes of your time. By participating you will be entered into a drawing for one of eight \$25 gift cards to Barnes and Noble or Eagle Dining.

Don't delay. Complete today.

Go to this website to [www.FittsElStudy.org](http://www.FittsElStudy.org) to complete the consent and surveys.

Thank you for your participation. If you have any questions you can direct them to Wynde Fitts at [wynde.fitts@usm.edu](mailto:wynde.fitts@usm.edu).

## APPENDIX H – Training email 1

Good day-

You now have the opportunity to complete a training as a part of a Division of Student Affairs initiative. This 4 hour interactive training is offered on three dates. Please click on the link below and find a training time and date that fits your schedule. Remember you will be compensated for your time in training.

Sign up below.

(Insert sign up genius link)

Wynde Fitts

Wynde.fitts@usm.edu

## APPENDIX I – Training email 2

Thank you (insert name) for participating in the emotional intelligence training. To complete the study please complete the two surveys below. It will only take approximately 20-25 minutes.

(insert EQ-I 2.0 link)

(insert WRI link)

Your participation has been a vital part of this study. I appreciate your time and commitment to the Southern Miss experience.

Wynde Fitts

Wynde.fitts@usm.edu

## APPENDIX J – Follow-up email

Hello (insert name)

I am writing to remind you to complete your final the surveys. It should onlu take about 20 minutes to complete both surveys below. Remember by participating you are entered into a drawing for a \$25 gift card to Barnes and Noble or Eagle Dining.

Don't delay. Complete them today.

Questions contact Wynde Fitts, [wynde.fitts@usm.edu](mailto:wynde.fitts@usm.edu)

Insert EQ-I 2.0 link

Insert WRI link

## APPENDIX K –Follow-up text

Hello

I am writing to remind you to complete the surveys below. It should only take 20 minutes to complete both surveys below. Remember by participating you are entered into a drawing for a \$25 gift card to Barnes and Noble or Eagle Dining.

Don't delay. Complete them today.

Questions contact Wynde Fitts, [wynde.fitts@usm.edu](mailto:wynde.fitts@usm.edu)

Insert EQ-I 2.0 link

Insert WRI link

## APPENDIX L – Update email to Departments

Good morning,

Thank you for your support of my dissertation research. I am in the final stages of gathering data and seek your support in encouraging participants to complete the study. Upon the completion of the study and approval from my dissertation committee, I will distribute information to you all about results.

I appreciate your continued support.

Wynde Fitts

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