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Interactions Among Learning Style Preferences, Generational Cohorts, and Gender

Cassaundra De-Vonne Gilchrist
Walden University

Walden University

College of Management and Technology

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Cassaundra Gilchrist

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Review Committee
Dr. Holly Rick, Committee Chairperson, Management Faculty
Dr. David Cavazos, Committee Member, Management Faculty
Dr. Aridaman Jain, University Reviewer, Management Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
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Abstract

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by

Cassaundra Gilchrist

MA, Kaplan University, 2010

BS, New Jersey City University, 2008

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The body of literature on learning -style preferences reflects differences among generational cohorts in the constructs of values, attitudes, and personality. While scholars have theorized learning, styles vary based on membership in generational cohort, very little research has been conducted on generational preferred learning preference. The problem was the need to understand the preferred learning style of multiple generations due to individuals 55 years and older having a longer life expectancy and working beyond retirement age. The purpose of this quantitative nonexperimental comparative survey study was to determine the learning style score based on generational cohort, gender, and the interaction between generational cohort and gender. Experiential learning theory served as the foundation for this study. The sampling frame consisted of 210 Qualtrics participants born between 1960 and 2000 who were currently enrolled in college business courses in the United States. The independent variables were generational cohort and gender, and the dependent variable was learning style. The results of the two-way ANOVA showed neither statistically significant main effects of both independent variables nor interaction effect between generational cohorts and gender. Social change implications are for managers to develop strategic training solutions for the multigenerational workforce and may be of value to businesses because strategic training could help organizational productivity.

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Dedication

This dissertation is dedicated to my loving mom, Surella Manley Spry. I am so proud to be her daughter. My mom at an early age inspired me to always seek opportunities for education. Until now, I never fully understood the sacrifices she made to pursue her own education. Thank you for setting such a tremendous example and for making an extraordinary difference in the lives of others. My mom has always been the one to encourage me and remind me that I can do anything I put my mind to. Before this dissertation process ended, the good Lord called my mom home, but I will always be grateful for her teachings and examples of love.

I also dedicate this dissertation to my loving husband, Randolph Sr., and my wonderful children, Randolph Jr., David, and Surreatha. Randolph, you are my best friend and the love of my life. I realize this process was not an easy one for you, and I am grateful for your love, patience, and continued confidence in me. Jr., David, and Surreatha, I love you more than words can describe. Your smiles, hugs, and cheerleading kept me motivated throughout this process. I hope years from now you will look back on this time in your life and be inspired to pursue your own goals with perseverance and hard work. If your mom can do this, the sky is the limit with what the three of you can accomplish! I also want to dedicate this to my beautiful daughter in law, Candis, and my adorable grandchildren, Avah (Sunshine) and David II (Son shine). You have also been incredibly supportive. To God be the glory for all he has done. Much love always, kiss, kiss, kiss.

Acknowledgments

I would be remiss if I did not acknowledge the contributions of my mentor, the fabulous Dr. Holly Ann Rick. I was blessed to be mentored by Dr. Rick, who provided guidance, support, and encouragement throughout this dissertation process. I also want to acknowledge and thank Dr. David Eduardo Cavazos for the valuable time he spent serving as a member of my dissertation committee. I want thank Dr. Aridaman K. Jain for his feedback and comments as university research reviewer. I want to thank the Korn Ferry Hay Group, Inc. for granting permission to use the Learning Style Inventory 3.1 for this study.

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Chapter 1: Introduction to the Study

Learning style preferences among generational cohorts and gender leadership implications based on Kolb's experiential learning model was the topic for this study. According to D. A. Kolb (2007, 2017), the need to understanding multiple generations' preferred learning style is important in all types of organizations. Individuals 55 years and older have a longer life expectancy and are working beyond retirement age (Butler, Di Rosa, Principt, & Smeaton, 2018). According to the Bureau of Labor Statistics (2017), the population of individuals in the labor force 55 years and older will have increased from 22.4% in 2016 to 24.8% in 2026. The intent of the current study was to gain a clearer understanding of the educational learning style needs among generational cohorts and gender while providing leadership implications. Chapter 1 provides information on the background of the study, the problem statement, the purpose of the study, the research questions, and the hypotheses. Also provided are the theoretical framework for the study; the nature of the study; and the definitions of the independent variables, dependent variables, and any terms used in the study. I conclude this chapter with the assumptions, scope and delimitations, limitations, significance of the study, and a summary.

Background

According to D. A. Kolb (2017), the need to understanding multiple generations' preferred learning style is important in all types of organizations. The general business problem was that three generations currently prevalent in the workforce are baby boomers, who are considered experts at their jobs but need training in technology, and Generation Xers and millennials, who are considered high-tech experts but not loyal

(Reed Business Information Inc, 2020). As more Generation Xers have entered the workforce and the traditionalists and baby boomers have continued to retire, the workplace environment has seen changes. Baby boomers are individuals born between 1946 and 1964. The oldest are the 79 million baby boomers who reached age 65 in 2011, and the youngest will get there by 2029 (Kane, 2019). According to Kane (2019), following World War II the average age of marriage dropped and the number of children increased dramatically, making the baby boomer generation substantially larger than the traditionalists.

According to Matre (2017), traditionalists are individuals born before 1945, also known as the silent generation, and are considered the oldest active generation in the workforce. A few decades ago, it was rare to see Americans working much beyond age 62. However, people are living longer, social security does not provide the comfort it once did, and traditionalists often do not want to stop working. Most traditionalists who are still working work fewer than 40 hours per week but still hold valuable positions in their organizations. One of their most prominent and defining characteristics is a strong work ethic; because they grew up in the aftermath of the Great Depression, they often saw working as a privilege. In the workplace, they are considered the most loyal generation; traditionalists often stay at one organization for their entire career. In the workplace, they are engaged, follow rules, rarely question authority, prioritize stability, and may have trouble with technology (Matre, 2017).

According to Carin, Jiang, and Spiller (2017), the growing use of online educational content and related video services has changed the way people access

education, share knowledge, and make life decisions. According to Lin, Zhang, and Hauser (2015), there has been a substantial academic interest in modeling consumer experiential learning. Optimal solutions to forward-looking experiential learning problems are complex, limiting their behavioral plausibility and empirical feasibility. According to Marsh (2018), millennials have been in the workforce for over a decade. By 2025, millennials are projected to make up 75% of the workforce. It is important for organizations to understand the defining traits of this rapidly growing cohort.

QuestionPro Inc. (2019) defined quantitative research as the systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational analysis. Cherry (2019) examined D. A. Kolb's experiential learning theory and defined learning as "the process whereby knowledge is created through the transformation of experience" (p.50). D. A. Kolb (as cited in Cherry, 2019) noted that there are different learning styles that are helpful in the research of learning style preferences among generational cohorts and gender. Generation Xers are less likely to idolize leaders and are more inclined to work toward long-term institutional and systematic change through economic, media, and consumer actions (Dimock, 2018; Myers & Sadaghiani, 2010; Stack, 2018). The specific problem was the need to understand the preferred learning style preference of multiple generations due to individuals 55 and older having a longer life expectancy and working beyond retirement age (Butler et al., 2018).

Problem Statement

As more Generation Xers enter the workforce and the traditionalists and baby boomers continue to retire, the workplace environment is experiencing major changes. The preferred learning style of Baby Boomers, Generation Xers, and millennials are not well understood. According to D. A. Kolb (2017), there are multiple ways of characterizing learners based on their learning preferences. The research literature on millennials indicated that millennials' relationship with technology has changed their relationships with their learning style preferences. According to America's Job Exchange (2020), employers are seeking certain characteristic qualities beyond the ability to fill a job description. Employers want employees who demonstrate dependability, are self-motivated, provide a positive representation of their brand, are team players, and have a positive attitude (America's Job Exchange, 2020). As reported by CNBC LLC. (2019), managers are seeking the desired teamwork, analytical skills, and computer skills demonstrated by millennials. Generation Xers represent a more heterogeneous generation, embracing social diversity in terms of characteristics such as race, class, religion, ethnicity, culture, language, gender identity, and sexual orientation (CNBC LLC, 2019). Generation Xers are less likely to idolize leaders and are more inclined to work toward long-term institutional and systematic change through economic, media, and consumer actions (Dimock, 2018; Myers & Sadaghiani, 2010; Stack, 2018). The specific problem was the need to understand the preferred learning style of multiple generations due to individuals 55 and older having a longer life expectancy and working beyond retirement age (Butler et al., 2018).

Purpose of the Study

The purpose of this quantitative nonexperimental comparative cross-sectional survey study was to determine (a) the interaction in the Learning Style Score (Dependent Variable), as measured by the Learning Style Inventory 3.1 based upon Generational Cohort (Independent Variable). (b) The interaction in the Learning Style Score (Dependent Variable), as measured by the Learning Style Inventory 3.1 based upon Gender (Independent Variable). (c) The interactions in the Learning Style Score (Dependent Variable), as measured by the Learning Style Inventory 3.1 between Generational Cohort (Independent Variable) and Gender (Independent Variable). The purpose of this research was to further examine David Kolb's learning theory by utilizing David Kolb's Learning Style Inventory Tool 3.1. The results of this research study may contribute knowledge to inform the practice of management education and workforce curriculum design, development, and implementation.

Research Questions and Hypotheses

RQ1: What is the degree of interaction between the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV)?

H_o1: There is not a statistically significant interaction between the means of Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on the generational cohort (IV).

H_a1: There is a statistically significant interaction between the means of Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV).

RQ2: To what extent is there interaction in the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV)?

H_o2: There is not a statistically significant interaction between the means of Learning style Index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV).

H_a2: There is a statistically significant interaction between the means of the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV).

RQ3: To what extent is there interaction in the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV) and gender (IV)?

H_o3: There is not a statistically significant interaction in the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV) and gender (IV).

H_a3: There is a statistically significant interaction in the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV) and gender (IV).

Theoretical Framework

Experiential learning theory served as the foundation for this study of learning style interactions among generational cohorts. As described by D. A. Kolb (1984, 2007, 2017), experiential learning theory does not represent a behavioral or cognitive theory of learning; rather, experiential learning theory is a holistic approach that embraces aspects

of experience, perception, cognition, and behavior when learning. A significant component of experiential learning theory is learning style; D. A. Kolb (1984, 2007, 2017) defined *learning style* as an individual's unique self-processing of learning, as conditioned by experience, which is demonstrated through emphasis on modes of learning processes, including concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Nature of the Study

The purpose of this study was to examine the interactions of learning style preferences among generational cohorts and gender. I examined (a) the interactions of the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on generational cohort (independent variable); (b) the interactions in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on gender (independent variable); and (c) the interaction in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, between generational cohort (independent variable) and gender (independent variable). According to Hewitt (2016), what can be controlled and influenced with appropriate effort is how employees show up for work and how effectively they are able to get their work done. Many organizations that value their employees as their most important asset are creating continuous listening strategies, so they have a thorough understanding of the employee experience from hire to exit (Hewitt, 2016).

I used a quantitative nonexperimental comparative cross-sectional survey design. Regoniel (2015) stated that quantitative methodology is aligned with a positivist

philosophy, and Muijs (2004) stated that quantitative methods are used to examine the relationship between variables. Chan (2012) stated that experimental studies are not always practical in behavioral or social sciences; a nonexperimental design is necessary to enable the researcher to make inferences from samples to explain relationships. Chen, Knight, Ma, and Wu (2011) also contended that a nonexperimental design is more likely to provide real-world insight than experimentally designed studies. A quantitative nonexperimental comparative cross-sectional survey design was appropriate for the current study. Findings from this study may be used by managers to develop strategic training solutions for the multigenerational workforce and may be of value to the business because strategic training could help organizational productivity.

Definitions

Several terms related to the constructs of generational theory and learning style theory were used throughout this study. These terms are defined as follows:

Accommodators: People with this learning style are strongest in concrete experience and active experimentation. This style is basically the opposite of the assimilator style. Accommodators are doers; they enjoy performing experiments and carrying out plans in the real world. Out of the four learning styles, accommodators tend to be the greatest risk-takers. They are good at thinking on their feet and changing their plans spontaneously in response to new information. When solving problems, they typically use a trial-and-error approach. People who have this learning style often work in technical fields or in action-oriented jobs, such as sales and marketing (Tritsch, 2020).

Assimilators: Assimilators are skilled in the areas of abstract conceptualization and reflective observation. Understanding and creating theoretical models is one of their greatest strengths. They tend to be more interested in abstract ideas rather than in people, but they are not greatly concerned with the practical applications of theories. Individuals who work in math and the basic sciences tend to have this type of learning style. Assimilators also enjoy work that involves planning and research (Tritsch, 2020).

Baby boomers: Individuals born between 1946 and 1964 (Kane, 2019).

Convergers: People with this learning style have dominant abilities in the areas of abstract conceptualization and active experimentation. They are highly skilled in the practical application of ideas. They tend to do best in situations in which a single best solution or answer to a problem is available (Tritsch, 2020).

Divergers: Divergers' dominant abilities lie in the areas of concrete experience and reflective observation, essentially the opposite strengths of the convergers. People with this learning style are good at seeing the big picture and organizing smaller bits of information into a meaningful whole. Divergers tend to be emotional and creative and enjoy brainstorming to come up with new ideas. Artists, musicians, counselors, and people with a strong interest in the fine arts, humanities, and liberal arts tend to have this learning style (Tritsch, 2020).

Experiential learning theory: A holistic theoretical approach to learning that values styles of learning through cognitive, behavioral, and other aspects (D. A. Kolb, 1984). For the current study, experiential learning theory served as a theoretical basis for the construct of learning style.

Gender: Male or female.

Generational cohort: A group of individuals classified by birth during a specific span of years. Generational cohorts for the current study were individuals born between 1960 and 2000 (Nisen, 2013).

Generation X: A term used to describe a group of people born between 1965 and 1979 (Lewis & Wescott, 2017)

Leadership: The ability of the organization's manager to make good decisions and encourage other organizational members to perform their duties properly. The characteristics of a good leader include self-confidence, ability to control people, dynamism, and good communication skills. If properly applied, those skills lead to business success (Kolb, 2007).

Learning modes: A way of learning. D. A. Kolb's (1984) experiential learning theory recognizes that learning occurs in four modes. Concrete experience is described as "feeling," reflective observation is described as "watching," abstract conceptualization is described as "thinking," and active experimentation is described as "doing" (D. A. Kolb, 1984, p. 68).

Learning style: An individual's unique self-processing of learning, as conditioned by experience, which is demonstrated through emphasis on modes of learning processes, including concrete experience, reflective observation, abstract conceptualization, and active experimentation (D. A. Kolb, 1984). Learning style refers to a range of competing and contested theories that aim to account for differences in individuals' learning (Coffield, Moseley, Hall, & Ecclestone, 2004). Those theories propose that all people

could be classified according to their style of learning, although the theories present differing views on how the styles should be defined and categorized (Coffield et al., 2004). A common concept is that individuals differ in how they learn (Cuevas, 2015).

Learning Style Index: The outcome scores that are derived through quantitative assessment considering the learning styles of students that are identified through qualitative assessment (Snow et al., 2002; D. A. Kolb, 1984). Outcome scores are measured by asking 12 questions based on a ranking-order of preferences on a scale from 1 to 4, with 1 representing "least like you" and 4 representing "most like you" using the Kolb's Learning Style Inventory Tool 3.1 (D. A. Kolb, 1984). The items on the Learning Style Inventory correspond with four learning modes; the degree of emphasis on the learning modes yields one of four preferred learning styles by dominant learning modes of diverging, assimilating, converging, and accommodating (D. A. Kolb, 2007).

Learning Style Instrument Version 3.1: The Learning Style Instrument is a questionnaire used to measure individual learning style via rank ordering of preferences on a scale from 1 to 4, with 1 representing "least like you" and 4 representing "most like you." Items on the Learning Style Instrument correspond with four learning modes; the degree of emphasis on the learning modes yields one of four preferred learning styles. Figure 1 depicts the four learning styles by dominant learning mode (A. Y. Kolb & Kolb, 2005).

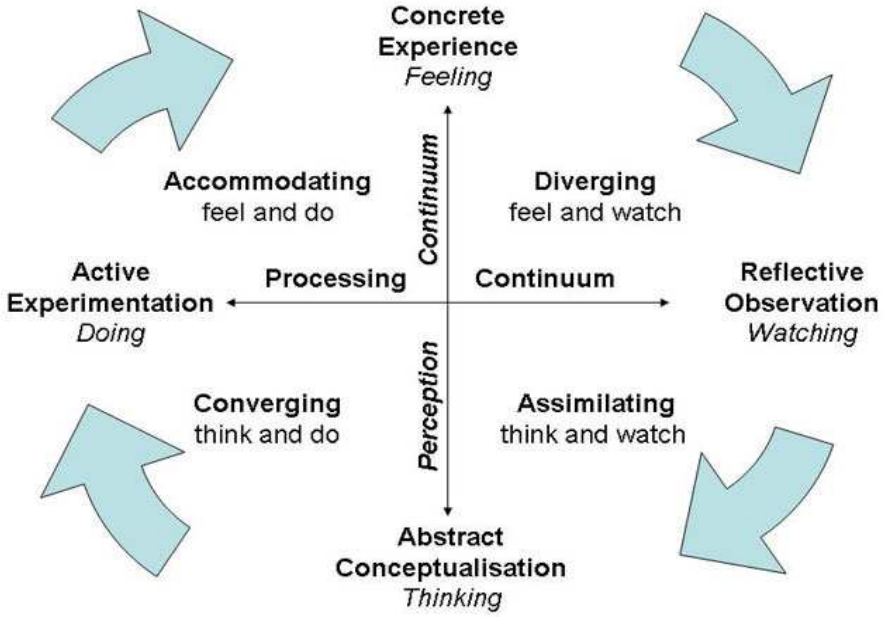

Figure 1. Relationship among study variables.

Likert Scale: A summated rating scale that requires participants to respond using a predefined rating scale (Vinney, 2019).

Millennial: A term used to describe a group of people born between 1980 and 1994 (Ferri-Reed, 2015). *Traditionalists*: A term used to describe a group of people born before 1945, also known as the silent generation (Matre, 2017).

Assumptions

Assumptions are claims that are assumed to be true but cannot be verified (Marshall & Rossman, 2016; Wargo, 2015). One assumption was that the participants would provide accurate and truthful responses during the interview process. Another assumption was that participants would remain open, honest, and cooperative throughout

the process. The other assumptions associated with the research design for this study could be categorized as theoretical, topical, and methodological.

The theoretical assumptions for this study were based on the experiential learning theory that defines learning as a process in which knowledge is created through the transformation of experience (Cherry, 2019; Marshall & Rossman 2016). The experiential learning perspective posits that learners can extract learning from distinct concrete experience through a process of cognitive reflection that is optimal when undertaken separate from the experience, ideally through educator facilitation (Leaf Group Education, 2018). The topical assumption of this study was that regardless of the study's outcome, an understanding of learning style trends among generational cohorts would be beneficial to management education and organizational practitioners.

The statistical model used in this study was assumed to be effective in measuring the statistical significance between the independent and dependent variables. Two-way analysis of variance (ANOVA) was used to analyze the data in this study and had six specific assumptions (Lee, 2015; Lund Research LTD., 2016):

1. One dependent variable measured on a continuous scale (either interval or ratio scale).
2. Two independent variables measured on a categorical scale where each independent variable consists of two or more categorical groups.
3. Independence of observations.
4. No extreme outliers.

5. Residuals should be approximately normally distributed for each cell of the design.
6. Homogeneity of variances.

Scope and Delimitations and Limitations

Delimitations are elements that bind the study (Marshall & Rossman, 2016). The delimitations of this study existed within the population. Students who attended business management courses constituted a delimitation because they did not include all courses or students attending college. Limitations are potential weaknesses of the study (Marshall & Rossman, 2016). One limitation was the socioeconomic backgrounds of the participants. Differences in income, education, and occupation could have affected their decisions in the workforce and responses during the survey. Another limitation was the ethnic backgrounds of the participants. Different ethnic backgrounds may have resulted in different experiences in their upbringing that may have affected their decisions in the workforce and responses during the survey. Another limitation was the gender of the participants. Men and women may endure different experiences resulting in answers reflecting those experiences. Another limitation was the participants' length of service, which could have affected their perception of the other generations. The older generations may have had more years of service and experience working with other generations than the younger generations (Becton, Walker, & Jones-Farmer, 2014).

The limitations of this study also involved components of the study's design, which included the sampling frame, recruitment method, and the instrument used to measure learning style preferences. The sampling frame was recruited from Qualtrics,

Inc., an online survey company. Participants in the Qualtrics audience may have had biased outlooks in response to the questions asked. Taylor (2018) indicated that when an individual taking a survey is confused by the question, they typically do not answer the question in a way that is useful. The length of the survey, more than 12 questions, may have adversely affected the quality of the responses. The use of quantitative methodology may have also been a limitation in this study. Quantitative analysis has a research goal of accepting or rejecting a null hypothesis to produce generalizable results. A qualitative design may have allowed participants to provide more detailed responses, which might have given more insight into the reasons for the answers that the participants provided.

The use of the Learning Style Inventory Tool 3.1 may have also constituted a limitation in this study. The questions extrapolated from the organization studied asked participants to rate their learning style preferences. The questions in the Learning Style Tool 3.1 were related to self-view, which may have been a limitation of this study. The length of the survey, more than 12 questions, may have adversely affected the quality of the responses. Bosnjak and Galesic (2009) conducted research on the effects of questionnaire length on participation and response quality in web surveys. The results suggested that electronic surveys that require more than 5 minutes result in lower participation, higher incompletions, and lower quality responses. Because Qualtrics.Com was asked to disregard any surveys that were completed in less than 3 minutes, some participants who were able to complete in less time may have affected the results of this study.

The sample size in relation to the general population of college students currently enrolled in business courses in the United States was also a limitation. This study's sample size was 210 participants. The sample size was small compared to the size of the general population of college business students. Based on information obtained from Statista (2016), a projection of enrollment for 2018 college business students in both public and private colleges was 14.8 million. Another limitation to the study was that in terms of gender, the survey asked participants to be identified as male or female.

Significance

In the field of business management, this study may provide a better understanding of generational cohorts attending school in the United States and could lead to a better understanding of preferred learning style preferences. Many scholars posited that much remains unknown about today's multigenerational workforce and advocated further inquiry into generational differences and learning style preferences (Lipman, 2017; Regoniel, 2015; Bush, Geist, & Reynolds, 2008).

I compared learning style preference of millennials and generation Xer students enrolled in business courses in colleges in the United States. Researchers noted that members of this generation possess different personalities, values, and attitudes compared to members of older generational cohorts (Milliron, 2008; Stewart & Bernhardt, 2010; Twenge & Foster, 2010). Learning style interactions present unique challenges for organizational leaders, managers, and trainers to effectively manage, motivate, and educate a multigenerational workforce due to technology and communications media (Bolser, 2015). The current study may expand experiential learning theory by informing

researchers of new applications or processes that address the learning style preferences of millennial students compared to generation Xers students and based on gender.

Research conducted on generations within multiple settings indicated that significant differences exist among cohorts (Businessball.com, 2017; Milliron, 2008; Stewart & Bernhardt, 2010; Twenge, 2009). I combined the constructs of generational differences with learning style to advance knowledge of how styles of learning vary among multigenerational students and among gender. The results of this study may inform experiential learning theory, may affect understanding of generational learning interactions among gender, and may inform future research.

The practical implications for the field of business management were that results may provide better understanding of generational cohorts attending college business courses in the United States and could lead to a better understanding of preferred learning styles. Many scholars posited that much remains to be learned about today's multigenerational working population and advocated further inquiry into generational differences in the workforce (Bush et al., 2008; Nicholas, 2009; &Yang & Guy, 2006). However, my interest in investigating this topic originated from returning to school at the age of 45. Years of experience attending brick-and-mortar and online classes in corporate and educational sectors prompted this interest. I began my Bachelor of Science program at age 45, continued with my Master of Business Administration, and now at age 62 am working on my doctorate. The knowledge gained through this study may assist researchers in identifying the diverse educational needs of a multigenerational workforce and may inform management education and the effective design and delivery of content.

Original Contribution

Another contribution was that this study has the potential to help managers more effectively manage people from multiple generations (see Cloutier, Felusiak, Hill, & Pemberton-Jones, 2015). Findings from this study may be used by managers to develop strategic training solutions for the multigenerational workforce and may be of value to businesses because strategic training may enhance organizational productivity.

Contribution to Professional Practice

The results of this study may contribute to the improvement of business practice because training multigenerational workers and retaining older workers to stay employable may benefit organizations by maximizing the generations' learning and enhancing their job productivity.

Positive Social Change

Retirees or workers near retirement are looking for ways to work beyond retirement age and to earn a substantial income. Older workers are performing paid work following retirement and are working longer and not always voluntarily (George, Harper, Kulik, & Ryan, 2014). The results of the study may lead to the formulation of strategies that may contribute to the continued growth of the multigenerational workforce, thereby positively contributing to social change. Kulik et al. (2014) found that retraining and updating the skills of the multigenerational workforce could help aging individuals meet the challenge of social fairness and equity by compensating them for their support. Many older workers want to give back to their community with intergenerational solidarity and reciprocity to promote intergenerational fairness (Thijssen, 2016). Training of multiple

generations may impact social change by accommodating personalized learning styles to acknowledge diversity within the workforce and encourage an understanding of skills (Dwyer & Azevedo, 2016). To provide adequate training to a multigenerational workforce, managers could employ a variety of engagement practices that may benefit society with increased economic productivity through decreased costs of retirement benefits and promotion of healthier living and greater longevity.

Summary

This chapter provided an overview of the research problem, research questions, and methodology. In Chapter 2, I review the scholarly literature pertaining to generational and learning style theories, both seminal and current, to reveal the existing application of the theories in today's millennial and Generation X college students enrolled in business courses in the United States.

Chapter 2: Literature Review

According to Kolb (2007, 2017), the need to understanding multiple generations' preferred learning style is important in all types of organizations. According to the Bureau of Labor Statistics (2017), the population of individuals in the labor force 55 years and older will have increased from 22.4% in 2016 to 24.8% in 2026. The general management problem was that there are three generations that were in the workforce, which are baby boomers, Generation Xers, and millennials (Reed Business Information Inc, 2020). The purpose of the current study was to examine interactions of learning style preferences among generational cohorts and gender by utilizing Kolb's Learning Style Inventory Tool 3.1. The results of this study may be used to inform the practice of management education and workforce curriculum design, development, and implementation.

This chapter includes a review of the literature associated with Kolb's experiential learning style theory, a discussion of Kolb's Learning Style Instrument, and a review of empirical research findings on generational interactions in higher education. A summary concludes the chapter.

Literature Search Strategy

Searches were conducted using the Walden University library, Summon, and Google Scholar. Search terms included keywords such as *Experiential Learning Theory*, *Kolb's Learning Style Instrument 3.1*, *learning-style preferences*, *millennials*, *generation-X*, *generational cohorts*, *two-way ANOVA*, *survey*, *quantitative methods*, *questionnaire*, and *leadership implications*. Databases used in the search included Academic Search

Premier, Business Source Complete, PsycARTICLES, Regional Business News, and SocINDEX. Initially, searches included all dates to ensure I gained a historical perspective of the literature. Later queries were restricted to articles published in the last 3-5 years.

A literature search of relevant literature was performed from 2015 to 2020. The initial searches were performed January 1984 and intermittent searches took place until 2020. A systematic search was conducted using the Walden University library databases, Summon, and Google Scholar. The searches were limited to scholarly peer-reviewed literature. A combination of the search terms was also used to find different types of articles. In addition, I searched David Kolb's published work concerning his learning styles model and learning style inventory tool.

The EBSCOhost web-based search engine served as a primary resource of information for research material. The web-based search process included keywords and phrases containing specific construct terms. The search also included specific theory references (e.g., two-factor theory) and names of seminal researchers (e.g., Herzberg). Search engines used to identify relevant literature included ABI/INFORM Global, Academic Search Premier, Business Source Complete, Subject Collection - Social Sciences, and Dissertation and Thesis Global databases. New Jersey City University library systems facilitated access to academic literature not readily available online. The selected reference material contributing to the literature review primarily consisted of contemporary scholarly peer-reviewed research and journal articles.

Bibliographies and reference lists were also mined to find sources that provided additional insight into the study's topic. Contemporary articles were selected by limiting the timeframe of published references to 5 years ago. In some cases, reference material included published research older than 5 years but was considered relevant and necessary to support a comprehensive analysis of the subject.

Theoretical Foundation

The theoretical framework of experiential learning theory served as the foundation for this study of learning style interactions among generational groups. As described by D. A. Kolb (1984), experiential learning theory does not represent a behavioral or cognitive theory of learning; rather, experiential learning theory is a holistic approach that embraces aspects of experience, perception, cognition, and behavior when learning. A significant component of experiential learning theory is learning style; D. A. Kolb defined learning style as an individual's unique self-processing of learning, as conditioned by experience, which is demonstrated through emphasis on modes of learning processes, including concrete experience, reflective observation, abstract conceptualization, and active experimentation.

This literature review provided further information on empirical studies of learning styles and interactions due to several factors. Kolb's experiential learning theory (learning styles) was the basis for this study. Kolb's learning theory sets out four distinct learning styles (or preferences), which are based on a four-stage learning cycle. In this respect Kolb's model was particularly elegant because it offered a way to understand

people's different learning styles and to explain a cycle of experiential learning that applies to everyone (Kolb 2007, 2017; McLeod, 2017).

Kolb included this cycle of learning as a central principle in experiential learning theory, typically expressed as four-stage cycle of learning, in which immediate or concrete experiences provide a basis for observations and reflections. These observations and reflections are assimilated and distilled into abstract concepts, producing new implications for action that could be actively tested to create new experiences (Kolb 2007, 2017; McLeod, 2017). Kolb's model includes a four-stage cycle:

- concrete experience,
- reflective observation,
- abstract conceptualization, and
- active experimentation.

A four-type definition of learning styles, (each representing the combination of two preferred styles, rather like a two-by-two matrix of the four-stage cycle styles, as illustrated below). Kolb used the terms:

- Diverging (Concrete Experience/Reflective Observation) (Kolb 2007, 2017; McLeod, 2017).
- Assimilating (Abstract Conceptualization/Reflective Observation) (Kolb, 2007, 2017; McLeod, 2017).
- Converging (Abstract Conceptualization/Active Experimentation) (Kolb 2007, 2017; McLeod, 2017).

- Accommodating (Concrete Experience/Active Experimentation) (Kolb, 2007, 2017; McLeod, 2017).

These explanatory ideas from Kolb's theory were used to support the research focus between generational cohort and gender. Supporters of Kolb's work include Baker, Passarelli, Robinson, Sharma, and Van Oosten (2012);Bati, Gurpinar, & Tetik, (2011); Beilefedt, Berdanier, Caves, Dewoolkar, & Patterson, (2011); Bethell & Morgan, (2011); Brower (2011); Lawrence (2013); Luby, (2012); McNamee & Rimken (2012); Slavich & Zimbardo (2012), Parker (2013); others include Cherry (2019); Cuevas (2015);DeCato and Peterson (2015); Eggen & Kauchak (2016); Elrick (2018); Fuller (2017); Gemmell (2017), Kotecha (2019); Passarelli (2020); and Wu (2014); Arguments from neuroscientists and other researchers efforts to match student learning styles with certain types of instruction showed no impact on learning outcomes. Dobolyi, Hughes, and Willingham (2015); Smith, (2004), found despite public conceptions, were little scientific evidence to support the efficacy of the theory of learning styles. Several studies have noted measurements of learning styles models were too variable to provide useful data. Others have suggested that exposing students to narrowed ideas about how they learned could limit their openness to learning and prevent them from thinking in new ways.

Literature Review

This literature review was based on two very separate constructs that has been combined for investigation in this study. The first section will present the history of experiential learning theory and associated research. Learning style research across multiple contexts will be reviewed, and various learning style instruments will be

discussed. Then, learning theory schools of thought will be introduced, followed by a discussion of the various generational classifications and a summary of each generational group's shared characteristics. Research on generational differences in higher education and workplace environments will be discussed. Finally, research specifically addressing learning differences among generational groups will be summarized.

Introduction to the Literature

As economic, technological, and social factors in society have shifted, researchers have taken interest in how constructs such as, personality, values and attitudes evolve over time. Social differences among age groups led to the term generation, defined as an aggregate of individuals, born at a similar time that share a collective persona (Howe, & Strauss,2016). The literature of earlier scholars recognized social conflict among generational groups Mannheim (1952) and Gasset (1933), served as a theoretical foundation for early research of value differences among older and younger individuals (Berger,1959; Connolly, 2019; Elder, G. H.,1967; Elder, J. W., et al. 2017; & Umut, 2019). In the late 20th century, generational theorists Howe and Strauss (2016) asserted that a new turning of generations occurs approximately every 20 years.

Howe and Strauss (2016) introduced the cycle of 4 theories, four periods within each generational cycle: high, awakening, unraveling, and crisis. The high period represented by the introduction of new values and the decay of old ones, followed by an awakening period in which new values attack the status quo (Howe, & Strauss, 2016).

The unraveling period occurred when the newer values began to deteriorate, followed by a crisis period of the replacement of old values with newer values (Howe, &

Strauss, 2016). The construct of generations was cyclical. As time evolved, so did generational groups. Howe and Strauss (2016) the two types of generational research existed in the literature: (a) familial and (b) cohort. The literature reviewed addressed generational research of cohorts, were defined as research that informed change associated with social generational groups (Howe, & Strauss, 2016). Patterns of behavior, personality, value, and attitude differences among generational groups has been studied for decades, providing evidence that generational groups differ from one another.

In a survey of students, Kolb and Goldman found a correlation between student learning styles and their chosen departmental major. Students who planned to graduate in their selected major had learning styles that were related to their areas of interest. For example, students entering management fields had a more accommodative style, while those pursuing mathematics degrees had a more assimilative approach. The results indicated that students who were pursuing a degree aligned with their learning style had a greater commitment to their field than students who were pursuing degrees not related to their learning references (Kolb, & Goldman, 1973, McLeod, (2017).

The concept of learning styles has been criticized by experts that suggest little evidence to support the existence of learning styles at all. One study looked at more than 70 different learning style theories and concluded each lacked enough research to support the claims. Educator Mark K. Smith argued that Kolb's model was supported by weak empirical evidence and the learning process was far more complex than the theory suggested. He noted the theory failed to fully acknowledge how different experiences and cultures may impact the learning process (Smith, 2018).

Differences in learning styles became of interest in the 1990s, with the onset of generationally diverse student learning populations in post-secondary environments. Oblinger (2003) noted that as of 1999, 73% of post-secondary students were classified as non-traditional, with 80% employed. The introduction of non-traditional, older working students presented a shift in the classroom dynamics. Higher education faculty and administrators noticed differences between generational groups within the classroom. The millennial generation, the youngest generation, became of interest in the literature, resulting in comparisons of this cohort with older generations in the constructs of communication, interaction, technology, and values. Scholars theorized millennial students possessed a unique style of learning (Fearon, & Meisel, 2007; Haytko, Matulich, & Papp, 2008; Morgan & Pardue, 2008); no conclusive statements regarding differences in learning styles could be made as these theories had yet to be validated in the literature.

Critical thinking was an active behavior against information processing which influenced the way individual and organizational decision making was done. While different levels of critical thinking in different individuals, millennials were observed to possess low critical thinking skills given their habit of passively receiving information through social media (Braccini, & Menichelli, 2020).

Another construct of interest in the literature was learning. How do people really learn? Over time, theories have been presented that attempted to address this question. Some theories emphasize cognitive processes of learning while others examined behavioral and social aspects. Traditionally defined, cognitive learning was described as the recognition, assimilation, and utilization of new knowledge (Anderson, & Cazzell.,

2016; Huber, 1991). Cognitive learning was depicted through a theoretical framework that classified knowledge as tacit or explicit was the view of Ikujiro Nonaka in 1994. Tacit knowledge was recognized as the personal knowledge one beholds, while explicit knowledge was realized through formal, systematic channels, such as, books or process manuals. Nonaka's thinking was the rejection of the common view of knowledge management as an IT function. The data management part of knowledge management was a minor – indeed, incidental – component. The fundamental part was the creation and sharing of knowledge, which takes place via the relationships between people. He therefore asserts spending tens, or hundreds of thousands of dollars on technology systems misses this truth and argues that true knowledge creating companies are ones with a generous community feel (Clayton,2016).

In contrast, behavioral theories of learning were depicted through the assumptions that learning was manifested through observable behavior because of environmental factors (Baumgartner, Caffarella, & Merriam, 2020). Social learning theories suggested learning occurs collectively through interactions and observations (Easterby-Smith, 2020; Illeris, 2018; Merriam et al., 2014).

Experiential Learning Theory

According to McLeod (2017), the experiential learning theory was developed by Kolb in 1984, drew on the works of scholars including Dewey (1938), Jung (1928) and Piaget (1952), Gupta and Gyan (2016), Praveen (2017). In the work of Dewey (1938), experiential learning theory suggested an individual's learning could be fostered by experience. Kolb (1984) expanded on learning through experience by recognizing

environments of tensions between experience and analysis as beneficial in the learning process. The experiential learning theory, learning was acknowledged as a holistic, adaptive knowledge creation process of relearning, driven by conflict, and resulting from interaction between person and environment (Kolb, 1984). The experiential learning theory model included two classifications: grasping experience and transforming experience. Grasping experience was depicted through two related modes, concrete experience, or "feeling", and abstract conceptualization, or "thinking," Transforming experience was depicted through two related modes, reflective observation, or the word "watching," and active experimentation, or "doing" (p. 68) (McLeod, (2017).

S. A. McLeod (2017) defined Kolb's work from 1984 on the concrete experience mode as an "artistic" preference to learning, with an emphasis on experience and relating to others (p. 68). Learners with high concrete experience orientation enjoyed talking problems out and interacting with others during the learning process. In contrast, Kolb (1984) defined the abstract conceptualization mode as an orientation toward thinking and logic when learning. These were learners that enjoy logical, objective subjects, such as, mathematics or science. The reflective observation mode was depicted by a learner preference of examining ideas and situations via observation (Kolb, 1984). The active experimental mode was defined as an orientation toward the practical application of "doing" (p. 69). These types of learners do not want to sit down and observe while learning but prefer active involvement in applying concepts when learning. An individual's preferred style of learning was measured by which modes are dominant

when learning. Learning styles was further defined and examined in a later section of this literature review.

Experiential learning theory was utilized as a theoretical base for examining learning across many contexts. Experiential learning methodologies have been noted as beneficial in enhancing learning in post-secondary education (Bethell & Morgan, 2011; Feldman et al, 2015; Karpova et al,2011; Li, 2019; and Yates et al 2015). Bethell and Morgan (2011) qualitatively examined how students responded to experiential learning methodologies; enhanced knowledge and learner engagements were noted as advantages of experiential methods. Karpova et al. (2011) investigated the learning experiences and outcomes of 172 undergraduate global apparel students. Virtual team-based collaborative projects were assigned to mimic real-world working conditions. Karpova concluded that experiential activities were successful in student acquisition of knowledge and skills, and prepared students for success in global apparel organizations (Karpova et al., 2011).

In workplace settings, Akella (2015) regarded experiential learning theory as a theoretical foundation to specifically examine worker learning preferences. Kok-Yee, Soon, and Van Dyne (2009), Van Dyne et al (2019) noted learning – and ultimate change – was manifested through a learner's experiences; thus, an organization's desire for workers to develop, grow and ultimately change was driven through an understanding of how workers experience learning on-the-job. Russ (2016) examined the use of experiential learning theory programs on worker outcomes, and found most-training improvements in organizational engagement, motivation to change, and overall job motivation. Another study investigated the use of experiential learning theory techniques

in a leadership development program; findings reflected that post- program, participants demonstrated enhanced decision-making and an increased ability to put leadership principles to practice (Stewart, et al 2011). A similar study by Kark (2016) explored how play, such as experiential games, could be used in leadership development programs; Kark (2016) concluded that play could contribute to processes of cognitive and behavioral development in leaders. Experiential instructional methods were noted in the literature as advantageous in the knowledge acquisition and skill development of both students and workers.

David Kolb presented his work on learning styles in 1971 and offered his experiential learning theory in 1984. Kolb's work was based on the research of John Dewey, Hurt Lewin, and Jean Piaget (Miettinen, 2010, Miettinen, et al 2015). Kolb's theories suggested that individuals possessed learning styles, he stated that the model was best used to sensitize, rather than assign learners to the multiple learning style opportunities that were available (Atkinson, 1991; Atkinson, & Krutson, 2012; John, 2016). Learning styles referred to a consistent way in which a learner responds to or interacts with stimuli in the learning context (Loo, 2004; Lil, et al 2016). Kolb indicated an individual's membership in various groups, such as, those found in academic settings or vocations, triggers alignment with different learning styles (Atkinson, 1991; Atkinson, & Krutson, 2012; John, 2016). Many theories related to learning styles (Curry, 2002; Curry, L. & Curry, A. 2010), Kolb's theory provided insights about the integration of learning styles into the educational process.

Experiential learning theory (Kolb, 1984) included two independent dimensions. The first dimension, consisted of real experiences, such as, feeling, and abstract activities like thinking. The second dimension was processing, which included active experimentation and reflective activities. Four learning styles, labeled accommodator, diverger, assimilator, and converger, were assigned under these two dimensions. "Kolb (1985) describes accommodators as people who learn primarily from 'hands-on' experience and 'gut' feelings rather than from logical analysis. Divergers were best at viewing concrete situations from many different points of view.

Assimilators were best at understanding a wide range of information and putting the information into concise and logical form, and convergers were best at finding practical uses for ideas and theories" (Loo, 2004; Lil, et al 2016). Individuals might find membership in one learning style, successful learners do not limit their application to one style (Kolb, 1984). Successful learners utilize all the styles by efficiently aligning a learning style(s) to each learning opportunity. Kolb's research was supported by his use of a 12-item data collection and analysis tool called the Learning Styles Inventory (Atkinson, 1991; Epitropaki, & Mainemelis, 2017).

Researchers who reported the value of identifying divergent learning approaches support Kolb's experiential learning theory and the Learning Styles Inventory. While many were supporters of the experiential learning theory, however, some were critics (Garner, 2010; Loo, 2004; Lil, et al 2016). Opposing research suggested a linkage between Kolb's learning styles and the general use of experiential learning (Atkinson, 1991); much of this research was directed toward assessing whether a correlation

between the Learning Styles Inventory and the assignment of students to specific learning styles exists. The assessment did not synchronize with Kolb's suggested use of the models. Kolb has acknowledged that the process was appropriately used to sensitize learners to the subject of learning styles, not to provide for definitive assignments of students. The debate had provided Kolb the opportunity to update his theories and present additional findings. "In an attempt to 'enhance scientific measurement specifications,' Kolb revised the Learning Styles Inventory by improving the format, simplifying the language, increasing internal consistency, using representative normative samples, providing clearer instructions, and simplifying scoring" (Atkinson, 1991, p. 156). Garner made an important note that although Kolb's theories have been criticized, they have not been disproved (Garner, 2010). Despite the discussion, experiential learning theory enjoys wide acceptance (Loo, 2004; Lil, et al 2016).

The transition between learning styles and the practical use of experiential learning theory was aided by Kolb's (1991, p. 280) presentation of the following 3 research findings: "Skills are domain specific and knowledge rich. A skill described by an integrated transaction between the person and environment. Skills were developed by practice." Kolb (1991) suggested that those findings move one's educational orientation away from a traditional directed instruction environment towards the immersion in a situationally appropriate experiential learning environment.

Experiential learning methodology, sometimes referred to as service learning, provided dynamic learning alternative. A generic experiential learning program uses expandable training boundaries in association with active hands-on or real-world learning

environments. This methodology was defined as “a multidimensional pedagogy (a form of experiential learning), which was integrated within a credit-bearing course in the form of an organized, thoughtful, and meaningful project” (Madsen, 2004, p. 329; Madsen, & Andrade, 2018). As stated above, John Dewey’s work influenced David Kolb. Dewey’s early 1900s research facilitated the start of the progressive education movement. Accordingly, this movement’s educational philosophy was the early stages of experiential learning theory (Hickcox, 2002). Dewey suggested that educational programs that were energetic, student-centered, and use shared inquiry, would provide a robust educational experience for students. This view synchronizes with experiential learning methodology. The use of experiential learning techniques grew in popularity during the 1960s and 1970s (Sherr, 2000). Since the end of the Cold War Era, many international relations programs have increased their use of experiential learning practices due to dynamic situations and vast cultural diversity (Lantis, 1998).

Experiential learning curricula included the blending of directed learning and real-world factors found in actual occupational situations. Experience alone does not provide for a robust learning environment that meets the goal of career preparedness. Knowles, Holton, & Swanson, (1998) research suggested a balance of both directed and experiential methods would provide for maximum value. Experiential learning programs are designed to provide learners and educators the chance to interact in a more individualized manner, enabling a focus on specific developmental items. Since many of the experiential learning activities were unique, such as, internships, faculty involvement was increased, permitting the use of mentoring activities. Additional examples of

experiential learning environments include on-site service projects, apprenticeships, work-study, and job shadowing.

The benefits of experiential learning included the flexibility to move students out of a traditional classroom environment and away from exclusively directed instructional methods. Instead, students were placed into real world work situations (Babbar, 1994). The environment naturally provided expandable lesson boundaries while facilitating learning by immersing students into typical practitioner surroundings (Ousnamer, 2002). This permitted students to observe cases firsthand rather than through predefined academic lenses. Experiential learning environments permitted students to have their performance assessed by both academic and practitioner standards (Rocha, 2000). As well, most environments facilitate two-way communication, which aided in a higher-level educational customization. The familiarity provided by experiential learning environments helped to reduce a student's anxiety about career choices and performance expectations (Hickcox, 2002). While participating in an experientially delivered academic program, learners had a clearer understanding of their own abilities in vocations of their interest. This was based on academic feedback and their personal assessment of their performance. Combined, this empowered learners to modify their career choices or to obtain the finishing skills required to meet real world expectations.

Cruickshank and Schenck (2015) pursued a refined Learning Styles Inventory (LSI), Kolb had moved away from the original cyclical nature of his model of experiential learning. Kolb's model had not adapted to current research and had failed to increase understanding of learning. A critical examination of Kolb's experiential learning

theory in terms of epistemology, educational neuroscience, and model analysis revealed the need for an experiential learning theory that addresses these issues.

A disadvantage of experiential learning instruction was the considerable logistical requirement needed to identify the desired real-world locations. The monitoring and assessment of learners at remote locations reduced teaching contact hours. The transition from a scholar to a scholar/practitioner focus was likely to reduce the traditional focus on educational basic skills. Experiential learning methodology was viewed by some educators as focusing too much time on competence-based strategies, thus restricting basic skills education (Hyland, 1994). Various educators suggested the learner preparation facilitated by this method was not aligned with an educational institution's goals. This position pointed to poorly designed experiential learning assignments, which utilize a large amount of institutional resources yet provide educational credit for performing basic administrative tasks (Marlin-Bennett, 2002).

Experiential learning programs were used by some business colleges to meet the goal of preparing students for their careers. "Non-traditional educational experiences connect student's cognitive learning inside the classroom with the affective learning lab, on the job, or at the service-learning site" (Steffes, 2004, p. 46). Research indicated that students who participate in experiential learning environments earn higher grade point averages, while the experiences increased their self-esteem, reasoning abilities, critical thinking, and moral and ethical sensitivity (Kreber, 2001). The use of experiential learning methods promoted the accomplishment of skill based academic outcomes and

provided the benefits associated with a learner's immersion in a practitioner setting. Experiential learning approaches include a diverse collection of methods.

Evaluation of Experiential Learning Methods

"A substantial body of literature supported the value of experiential education, and particularly of service learning, for both academic and societal goals" (Marlin-Bennett, 2002, p. 385). Experiential learning's value included educational environments that were comprised of a blend of academic instruction and experiential learning. Studies comparing directed instruction and experiential learning programs have found an increased level of student engagement in the experiential environment that correlates with higher course grades (Marlin-Bennett, 2002), while providing a practical application for the subject matter not available to traditional directed learning settings. Learner engagement is an indicator that forecasts a student's likelihood of meeting an educational program's objectives.

Kolb's (1984) experiential learning theory provided the theoretical framework for experiential learning's use. This theory offered, "learning was the process whereby knowledge was created through the transformation of experience" (Madsen, 2004, p. 329). Experiential learning programs also provided for the development of critical reflection skills (Miettinen, 2000). Experiential methodology aided the adult student's transition into an educational program. Many new adult students reference increased levels of anxiety associated with learning environments that mirror directed learning classrooms.

In meeting the formal training outcomes of career preparedness, research suggested (Knowles, Holton & Swanson, 1998) directed learning was limited to providing indicators that may be used to forecast a student's career abilities. As class participation and attendance may be used to suggest test performance, course grades and degree obtainment may be used to forecast a learner's workplace abilities. In caparison to this forecasting method, research indicates (Kolb, 1984) that experiential learning provides authentic assignments in true vocational settings. This facilitates the obtainment of subject matter expertise on the application level.

Experiential learning methods also provided for a collection of supporting information, such as, environment appropriate dress and activities and provides for genuine workplace assessment. Specific practitioner preparedness goals generally suggest a student should be able to demonstrate an understanding of, and the ability to use, the following skills (Kerby & Weber, 2000): (a) computer; (b) critical thinking – non-quantitative; (c) critical thinking –quantitative; (d) demographic diversity; (e) environmental; (f) ethics and social responsibility; (g) global perspective; (h) oral, political; (i) social, legal & regulatory; (j)research ability; (k) team building; (l) technological; (m) writing. This specific list of outcomes may be met using a well-designed directed instruction methodology, in which the desired skills are integrated throughout the curriculum or addressed in specific courses. The purpose of this discussion, however, was to evaluate the experiential learning method's ability to meet the skill-based outcomes.

Experiential learning methods have been found to provide for an increased ability to employ educational information in unfamiliar situations (McKeachie, 2002). They also have been found to provide for higher levels of ethics and social responsibility in students. When experiential learning engagements include writing assignments and discussion, research indicates that students have performed better on essay exams and demonstrated an increased ability to use moral reasoning (McKeachie, 2002). Conversely, the implementation of experiential learning provides for faculty challenges. "Supervising experiential learning requires finding a balance between student independence and teacher control" (McKeachie, 2002, p. 247). Students are likely to have different reactions to this perception of freedom and some students might confuse effort or time on task with results. Faculty must multitask and balance their desire to direct with the need to encourage student participatory learning. Complexity is also added with the varied rates at which students learn; however, this too mirrors the real world and provides an educationally sound benefit to students.

To increase the benefits of an experiential exercise and to meet a business school's outcomes, engagements must be planned. This includes the mapping of activities and assignments for specific learning outcomes. Experiential exercise also requires the use of writing assignments to increase student reflection, thus aiding in the understanding of theoretical concepts. After the assignment is organized, students should be clearly communicated with and made aware of the expectations. During the execution of the activity, faculty must monitor and mentor students to provide for appropriate learning paths. This again is the area in which directed balance is critical. After the activity has

concluded, students should be provided with prompt feedback and assessment details. This after-action review should be treated as part of the learning activity. An experiential exercise is intended for students to modify their behavior during future engagements based on information provided after an experiential learning activity. Collectively, the proper implementation of experiential learning as an educational delivery process is designed to meet practitioner-desired skills (Kolb, 1984).

Numerous perspectives are utilized by scholars in examining and describing the phenomenon of learning, including behavioral, cognitive, and social schools of thought. Behavioral schools of thought are typically thought of as a traditional, positivist viewpoint of learning – an observable process of behavior demonstrated by an individual. In contrast, cognitive learning schools of thought examine unobservable, interpretive facets of learning through mental processes. Similarly, social learning schools of thought also recognize unobservable, interpretive processes of learning that occur through an individual's interactions with others. Whereas learning was recognized as an objective, stable process under the behavioral school, cognitive and social schools of thought recognize learning as a constructive, fluid process that occurs over time.

Theories of learning styles suggested that individuals think and learn best in different ways. These are not differencing of ability but rather preferences for processing certain types of information or for processing information in certain types of ways. If accurate, learning styles theories could have important implications for instruction because student achievement would be a product of the interaction of instruction and the student's style (Dobolyi, D. G.; Hughes, E. M.; & Willingham, D. T.2015).

Behavioral Learning

Levitt and March (1998) defined behavioral learning as an individual's process of adapting to an environment based on past or recent experiences. Merriam et al. (2007) further described behavioral learning as observable learner behavior because of environmental factors. Thus, behavioral learning is best described as an objective, observable process; individual learn through response to various stimuli. Influential theorists associated with behaviorism include Thorndike (1931), Skinner (1974) and Watson (1994). Thorndike (1931) noted learning as facilitated by an individual's conditioned identification of a situation and subsequent response. Skinner (1974) described behaviorism as the philosophy of science of human behavior and argued that an understanding of human behavior can solve major problems in our world. Watson (1994) described behaviorism as a purely objective theory that predicts and controls behavior. A common theme among these theorists is a positivist orientation of explaining and examining learning; behavioral learning is arguably objective, static, and predictable.

Cognitive Learning

Traditionally defined, cognitive learning is described as the recognition, assimilation, and utilization of new knowledge (Huber, 1991). Cognitive learning is best depicted through a well-known theoretical framework that classifies knowledge as tacit or explicit (Nonaka, 1994). Tacit knowledge is recognized as the personal knowledge one beholds, while explicit knowledge is realized through formal, systematic channels, such as books or process manuals. Thus, cognitive knowledge was best described as an

individually inherent and unique method of mentally processing, storing, and sharing knowledge.

Influential theorists associated with cognitive learning included Bode (1929), Piaget (1952), and Gardner (1983). These theorists introduced less predictable and fluid elements of learning and questioned the complexity of how one's mind works during the learning process. Bode (1929) challenged conventional behavioral perspectives of learning as scientifically observable and argued that the mind was of central importance in the character of one's thinking. Piaget (1952) later built on Bode's work by recognizing that one's cognitive structure changes through experience and external stimuli. Gardner's (1983) theory of Multiple Intelligences recognized the unique cognitive abilities of individuals while learning, and cited seven intelligences individuals possess: linguistic, musical, logical-mathematical, special, bodily-kinesthetic, interpersonal, and intrapersonal.

Social Learning

A perspective that learning was manifested through person-to person interaction and observation best described the social learning school of thought (Easterby-Smith, 1997; Illeris, 2004). Where behavioral schools of thought emphasize observable characteristics of learning, social learning recognizes a constructive learner response to stimuli that manifests into learning behaviors. External stimuli could include both formal and informal interactions with peers, managers, or organizational stakeholders. The role of a learner's past or recent experiences were also recognized as an element of social learning (Leavitt and March 1998).

Influential theorists of social learning include Rotter (1954) and Illeris (2004). Rotter (1954) introduced a framework for social learning and made key observations that learning is an interactive process between the individual and environment, with a person's experiences serving as a critical influencer of learning. A model by Illeris (2004) acknowledged cognitive and emotional elements of learning but introduced societal aspects. Illeris (2004) theorized that the societal dimension of learning was depicted through an individual's participation, communication and cooperation in communities and society. Thus, like cognitive learning, social learning theories share a constructivist orientation that learning was developed over time through subjective, social interactions with others and the environment.

Generational Groups

Generational researchers suggest that each generational group possesses a distinctly unique set of personality traits, values, and attitudes (Lancaster & Stillman, 2002; Filipczak, Raines, & Zemke, 2000). The term generational personality was used to describe shared characteristics and traits within a generational cohort (Howe & Strauss, 1991; Zemke et al., 2000). Howe and Strauss identified three components of a shared generational personality, including common age, shared beliefs and behavior, and perceived identification as a member of a common generational group. Following was an overview of the generational classifications, accompanied by a discussion of the generational personalities of generation Xers and millennial cohorts. Table 1 includes the dominant classifications within the literature, noted by author and span of birth years.

Table 1

Generational Classifications by Birth Year

Government definition	Generation X	Millennial
Howe & Strauss (1991, 1993, 2000)	1961-1981	1982-2004
Lancaster & Stillman (2002)	1965-1980	1981-1999
Oblinger & Oblinger (2005)	1965-1982	1982-1991
Zemke et al. (2000)	1960-1980	1980-2000

Generational Differences in Higher Education

According to Joshi and Kaushik (2016) there were multiple ways of characterizing learners based on their learning preferences (Joshi, & Kaushik 2016). The research literature on millennials indicated that millennials relationship with technology had completely changed their relationships with their learning-style preferences. We also knew from the literature that the qualities employers want in job candidates were those considered symptomatic of successful employees. As reported by CNBC LLC., (2019) managers were seeing the desired teamwork, analytical, and computer skills demonstrated by millennials. Meanwhile, generation-X represented a more heterogeneous generation, embracing social diversity in terms of characteristics as race, class, religion, ethnicity, culture, language, gender identity, and sexual orientation (CNBC LLC, 2019).

Unlike their parents who challenged leaders with intent to replace them, generation-Xers were less likely to idolize leaders and were more inclined to work toward long-term institutional and systematic change through economic, media and consumer actions (Myers & Sadaghiani, 2010, Stack, 2018 & Dimock, 2018). The specific problem was the need to understand the preferred learning style preference of

multi-generations due to individuals 55 and order having a longer life expectancy and are working beyond retirement age (Butler, Di Rosa, Principt, & Smeaton, 2018).

Communication

Varying preferences and styles of communication have been noted among generational groups by several authors (Gibson, 2009; McNeely, 2005; Oblinger & Oblinger, 2009; Windham, 2009). Millennials, noted as technologically savvy, have shown a strong interest in virtual communication. The technological savvy of the millennial cohort has resulted in a strong preference toward virtual communication. Windham (2009) noted that the internet serves as a portal for millennial students to communicate with others via email, blogs, social media, and other media streams. Oblinger and Oblinger's (2009) research noted millennials are known to use technology extensively for communication and perceive those exchanges as valued and personal; the ability for millennials to move seamlessly from in-person and virtual communication was also recognized.

According to Hanna (2003), traditional higher education communication channels were recognized as largely vertical and formal in nature. With the entrance of millennials to higher education environments, Hanna (2003) recommended a shift to horizontal, informal communication strategies. Morgan and Pardue's (2008) research revealed that millennial students may have trouble in communicating though traditional channels. Koeller (2012) noted that millennials expect instant feedback, suggesting that perceptions of timely communication may vary among students, and between millennial students and instructors. Older student cohorts may be more comfortable with traditional, formal

communication patterns and delays in feedback; thus, instructors are challenged to accommodate varying communication preferences and expectations of cohorts.

Some scholars suggest millennials have shortcomings that hinder effective communication. Hartman and McCambridge (2011) noted deficiencies in oral, written, and interpersonal communication. These shortcomings resulted in recommendations that educators hone millennial interpersonal skills by teaching students to recognize the personal communication styles of their own self and adapt to the styles of other students. A similar area of interest has been how millennials interact and perform in team settings. While millennials have been acknowledged to be team players (Gursoy et al., 2008; Dykema, Kooi, Quisenberry, Roehling, & Vandlen, 2011), others posit that how millennials function and interact in groups has not been fully empirically tested (Fogarty, 2008; Allen, R. S., Allen, D. E., Karl, K., & White, C. S. 2015).

Interaction

Several scholars advocate interaction as a key component of instructing Millennials (Dziuban, Hartman, & Moskal, 2005; McNeely, 2005; Oblinger & Oblinger, 2005; Windham, 2005; Allen, R. S., Allen, D. E., Karl, K., & White, C. S. 2015), Whereas generation Xers students may be accustomed to traditionally passive academic instructional strategies, such as lecture and video, millennials have expressed a strong desire for active learning. While learning, millennials want and crave interactivity – with technology, with professors and with student peers (McNeely, 2005). Research of generational differences in online learning systems by Stapleton et al. (2007) found high levels of interaction among classmates in discussion is most likely in millennial learners.

Stapleton et al. (2007) and Allen, R. S., Allen, D. E., Karl, K., and White, C. S. (2015). also noted a high expectation by millennials of high quality interactive technological components in the course room.

Millennial students demonstrated strong social needs for discussion and interaction with students when learning. Hartman et al. (2005) examined multi-generational student online learning experiences and found distinct differences in interactive perceptions between generation Xers and millennials. Gen Xers students found most of virtual interactions as pointless; millennials expressed disappointment in the inadequacy of interactive technology employed in the classroom (Hartman et al., 2005). Windham (2005) noted that the internet serves as a portal for Millennial students to interact with people and material, citing email, chat rooms and streaming videos as interactive components craved by millennials.

McNeely (2005) noted that while millennials were perceived as learning better through distance learning technology-enabled courses, millennials indeed enjoy socially interactive components of face-to-face learning. Similarly, Windham (2005) posited that the socially interactive needs of millennials are often not met in virtual learning environments, and recommended faculty encourages interaction both in and out of the course room. Thus, while the integration of technologically interactive methods is recommended in the course room, higher education should also recognize a need for synchronous face-to-face interaction among generational groups.

Technology

Scholars recognize millennial students as technology savvy, with high familiarity of web 2.0 applications such as social media, blogs, and podcasts (McNeely, 2005; Roberts, 2005; Wankel; 2009; Gardner & Weyant, 2010 Williams & Chinn, 2009; Allen, R. S., Allen, D. E., Karl, K., & White, C. S. 2015). Roberts (2005) examined millennial views on technology and found Millennials view technology as "what's new," and expect technology to adapt to their needs (p. 3.2). Gardner and Weyant (2010) investigated millennial student familiarity with web 2.0 applications in higher education environments; findings reflected high millennial familiarity with most web 2.0 applications, but also suggested limited integration of web 2.0 integration in classroom experiences. Chinn and Williams (2009) noted that use of web 2.0 tools would support active learning by a millennial student audience and further enable transferability of essential skills to the workplace. These findings suggest that millennial expectations for the application and integration of technology in classrooms is quite high; this expectation is potentially not always met in post-secondary learning environments.

Several researchers have investigated generational characteristics in online learning environments (Hartman et al., 2005; Stapleton et al., 2007). Stapleton et al. (2007) investigated 966 multi-aged students' use of online learning systems and noted some distinctly different characteristics of millennials compared to older cohorts. While high levels of interactivity between students was noted, millennials were found to interact less with instructors in online environments (Stapleton et al., 2007). Additionally, the likelihood of commitment to an online study plan was found to be lower than other

generational groups (Stapleton et al., 2007). These findings suggest a need for instructors to take an active, lead role in communicating with millennials in virtual learning environments. A similar study conducted by Hartman et al. (2005) assessed millennial student evaluations of online learning experiences against those of generation Xers and baby boomer students. Hartman found that older learners reported great learning engagement, whereas millennial students expressed disappointment with the lack of immediacy and delayed faculty response times in online environments (Hartman et al., 2005). Online learning expectations vary among groups, presenting challenges for faculty in meeting the diverse needs of multi-generational students in virtual learning environments.

Windham (2005) noted that perhaps technology had made Millennials lazy, as so much information was retrievable via the internet. An important implication to the convenience and accessibility of technology was that Millennials may rely on inaccurate web sites for information; Windham (2005) recommended a strong need for faculty to teach Millennials critical research skills. Perhaps an area of further empirical interest is the impact of millennial reliance on technology and factors, such as plagiarism and accurate knowledge of topics and concepts. As of the date of this publication, no known studies could be located on the topic of millennial over-reliance on technology.

Values

As historical studies on values have reflected significant interactions among cohort, Milliron (2008) was not surprising to find that the values of younger student cohorts have been found to differ from older student cohorts. Milliron (2008) investigated

275 millennial and non-millennial accounting students to compare values during the course selection process; findings reflected a significantly higher value on low workload by millennial students. Similarly, Twenge's (2009) investigation of personality differences concluded lower levels of self-reliance among millennial students. Stewart (2009) noted minimal self-responsibility in reading and digesting course materials by millennials and concluded millennials hold instructors largely responsible for learning. Major challenges in motivating millennial students were noted for higher education faculty (Milliron, 2009; Stewart, 2009; Twenge, 2009). Sax (2003) posited that millennials may have unrealistic expectations of the performance necessary to be academically successful, having previously succeeded with little effort.

Prior to college, millennials were rarely publicly criticized or informed of mistakes (Roehling et al., 2011). As millennials tend to value lower workload and guidance from others when learning, scholars had presented strategies for overcoming these obstacles. Wilson (2004) noted that millennial students are likely to value clear expectations, structure classroom environments and assignments. McGlynn (2008) recommended that faculty actively guide and mentor millennials and cited a need for parent orientations to set expectations for millennial student commitments.

Multiple scholars agree that work values vary significantly among generational groups (Bartley et al., 2007; Cennamo & Gardner, 2008; Hewlett et al., 2009; Murphy et al., 2010; Sullivan et al., 2009; Smola & Sutton, 2002; & Baird, C. H. 2015). Cennamo and Gardner (2008) examined values among working cohorts and noted significant differences in the values of status and freedom. Younger generations valued status much

higher than older generations, and millennials were found to value freedom higher than generation X workers (Cennamo &Gardner, 2008). Another study found that job security and stable working environments more strongly than younger groups (Smola & Sutton, 2002). Bartley et al. (2007) and (Baird, C. H. (2015), noted that the attributes and morals of generational groups starkly differ. Other studies have reported significant shifts in values and preferences among generational groups (Hewlett et al., 2009; Murphy et al., 2010). These findings suggested a strong need for organizations to equip managers with an understanding of generational value interactions and develop methods for establishing meaningful work for each generational group (Hewlett et al., 2009; Murphy et al., 2010).

There were many ways experiential learning could be implemented (Law, 2019). Experiential learning fits into categories which range from a perfect alignment to the job at one end, to activities where the individual must infer or extrapolate generalized learnings into the workplace (Law, D. 2019). The field of learning styles is expansive and complex. In a comprehensive review of learning style literature, Coffield et al. (2004) identified over 700 models of learning styles and argued that the research field was extensive. The learning style field was noted as consisting of three areas: learning theories, pedagogical strategies of teaching and learning, and commercial use of learning style instruments (Coffield et al., 2004; Miah, M. & Newton, P. 2017; Newton, P., 2015). The review of learning styles yielded 5 families, or Classifications, of learning styles: constitutionally based styles, cognitive structure styles, stable personality styles, flexibly stable learning preferences, and conceptions of learning (Coffield et al., 2004; Miah, M. & Newton, P. 2017; & Newton, P. 2015).

Constitutionally based learning styles were described by Coffield et al. (2004), Newton (2015) and later by Miah and Newton (2017) styles that classify learning as visual, auditory, kinesthetic, or tactile. Visual auditory learners were typically passive during learning; visual learners prefer to watch or observe while learning, whereas auditory learners prefer to listen while learning. Kinesthetic and tactile learners preferred proactive involvement in the learning process and are typically active participators. Dunn and Dunn's learning style model is noted by Coffield et al. (2004), Newton (2015) and Miah and Newton (2017) as a constitutionally based model.

Cognitive-structure models are reflective of patterns of cognitive ability, and are psychoanalytic in nature (Coffield et al., 2004; Miah, M., & Newton, P. 2017; & Newton, P. 2015). Riding's 1998 Cognitive Styles Analysis (CSA) was noted as a cognitive structure model. This instrument distinguishes between style and ability, and assumes style was physiological and fixed. Similarly, stable personality type models assume learning style is a fixed component of personality (Coffield et al., 2004; Newton, P. 2015; & Miah, M., and Newton, P. 2017). The Myers-Briggs Type Indicator was a well-known personality instrument that fits this classification, and measures personality dimensions on four spectrums: extroversion vs. introversion, sensing vs. intuition, thinking vs. feeling, and judgment vs. perception (MacArthur, K. 2017; McCaulley, M. H. & Myers, I. B. 1985).

Other learning style instruments were classified as flexibly stable learning preference models. Kolb's learning style model 1984 falls under this classification and was noted as a model that incorporates growth and development over time (Coffield et

al., 2004; Newton, P. 2015; and Miah, M., & Newton, P. 2017). Other well-known learning style instruments that shared this classification include Honey and Mumford's Learning Styles Questionnaire (LSQ) and Hermann's Brain Dominance Instrument (HBDI) (Coffield et al., 2004; Newton, P. 2015 & Miah, M., and Newton, P. 2017). The last learning style classification was learning strategies, which separated style and addressed one's orientation or strategies utilized during the learning process (Coffield et al., 2004; Newton, P. 2015 & Miah, M., and Newton, P. 2017). Vermunt's Inventory of Learning Styles (ILS) was an example of this classification; Vermunt (2005) and Victor (2015) advocates the use of the instrument to gain a constructive understanding of the processes one applies when learning.

Kolb's (1984) Experiential Learning Theory model led to the development of Learning Style Instrument (LSI) that measures an individual's dominant modes when learning. The Learning Style Instrument served two purposes in the measurement of learning styles: (a) As an educational tool to enhance an individual's self-awareness of how they learn and (b) As a research tool to examine and measure characteristics of individual learning styles as defined under the Experiential Learning Theory (Kolb & Kolb, 2005, 2019). While each of the modes reflected in the Experiential Learning Theory model were experienced by individuals when learning, some learners place greater value on one mode versus another. The Learning Style Instrument has evolved over time and the most recent version, version 3.1, contains 12 questions that measure mode preference and classify learning style as one of four styles: diverging, assimilating,

converging, and accommodating. Table 2 depicts the dominant mode associated with each of Kolb's (1984) learning styles.

Table 2

Kolb's Learning Styles

Learning style	Dominant modes	Description
Diverging	CE, RO	Values information gathering and various viewpoints
Assimilating	AC, RO	Values logic when learning
Converging	AC, AE	Values technical tasks and problem-solving
Accommodating	CE, AE	Values hands-on action-oriented learning

The wide array of learning style instruments and the various learning constructs measured by each provided challenges in making conclusive statements regarding learning style research. Bishka (2010) and Goh et al (2017) noted that after 30 years of learning style research, no literary consensus has been reached about the effective measurement of learning styles. Maintaining awareness of limitations when interpreting learning style research is critical (Bishka, 2010; Goh et al, 2017). Researchers have examined the construct of learning style within multiple settings. Noteworthy themes in learning style research include studies on behavior and demographics, culture, virtual learning, and workforce. Following is a description of research associated with each theme.

Research on learning styles has revealed relationships between one's preferred styles of learning and behaviors including personality type, educational specializations,

professional career, present job, and adaptive competencies (Kolb, 1984). As Kolb's (1984) theory is rooted in the work of psychologist Carl Jung, was not surprised that research reveals personality influences learning style. Introverted personality types may be more prone to diverging or assimilating learning styles whereas extroverted personality types may be more prone to converging or accommodating learning styles (Kolb & Kolb, 2017). Threeton (2008), Magulod (2019) examined the relationship between personality type and learning style among automotive technology students; findings revealed a relationship. This relationship demonstrates the complexity of the learning style constructs and reveals underlying theoretical implications of influencers of learning style.

A relationship between academic specialization and learning style was noted in several studies. Ahad's (2007) Ahmar and Rahman (2017) study of undergraduate students revealed relationships between learning styles and academic discipline. In a similar study of undergraduate students, Awang et al (2017) not only found significant correlations between learning style and academic discipline, but also student GPA and ethnicity. In the field of nursing, D'Amore, James, and Mitchell (2015) investigated over 300 nursing undergraduate students and found a higher frequency of diverging and assimilating learning styles among the students.

Numerous studies have examined interactions in learning style due to culture in organizational and educational environments. Allinson and Hayes (2016) work was restated by Berisha, Krasniqi and Pula (2019) as they examined learning style interactions of mid-career managers representing three different cultures and determined

a country's culture impacts development of learning style. Holtbrugge and Mohr (2017) investigated Barmeyer work that was done in 2004, the learning styles of over 300 business students in France, Germany, and Quebec and not only found significant interactions related to culture, but also in gender. Yamazaki (2005) utilized Kolb's Learning Style Instrument to examine relationship between culture and learning styles and concluded a correlation between the constructs. Tripp's (2011, 2017) study found the interaction of ethnicity and gender impacted learning style among Hispanic and non-Hispanic undergraduate students. As today's learning environments and workforce were becoming increasingly diverse, an understanding of the relationship between culture and learning style is critical in the effective education of a multi-national.

The constructs of learning style and virtual learning tools has been of interest to researchers as significant advancements in technology have occurred over time. A study by DuFrene, Kellermans, Lehman, and Pearson (2009) and Russ (2016) found learning styles influence the utilization of technological learning tools among business communication students. Cohen and Hauptman (2011) investigated whether students with a learning style would benefit from a combination of self-regulating questions and virtual environment while learning; findings suggest that the impact of learning in virtual environments vary based on learning style.

Researchers have examined how personalized technological games and programs can be utilized to adapt to one's learning style. One study evaluated the suitability of an automatic tutoring system that adapts to student learning style; results suggested that customized learning style programs are highly accommodating to learners and may

improve overall quality of learning (Budimac, Klasnja-Milicevic, Ivanovic, & Vesin, 2011). Huang, Hung, Hwang, Sung, and Tsai (2012) examined the use of electronic gaming customized to student learning style; their research suggested that personalized games improve learning motivation and ultimately lead to greater achievement when learning. The literature on learning styles and personalized technology was still young; as technological capabilities continue to evolve; further empirical research was needed to fully understand the relationship between these constructs.

Other scholars had suggested that an assumption in value differences among generational workers may not clearly apply to all workers. Real, Mitnick and Maloney (2010) examined the values of over 2,500 skilled trade workers; their research suggested not differences, but similarities, among generational groups in the constructs of work beliefs, job values, and gender beliefs. The researchers advised construction firms to avoid stereotyping generational groups and posited that firms should focus on effective communication and management strategies for younger workers in general. Perhaps other factors, such as profession, influence the relationship of value differences among workers. This is not fully understood within the literature and thus warrants further empirical examination.

A study by Lester, Standifer, Schultz and Windsor (2012) examined the perceived differences among generational groups versus actual differences in the workplace. The researchers examined how members of each generational group personally valued fifteen works-related concepts and gathered perceptions from participants of how other generational groups would value these items. Findings concluded that the differences

perceived among generations significantly exceed actual differences (Lester et al., 2012). An interesting implication of this study is that generational misunderstandings may occur due to stereotypes within the literature. Further empirical examination of differences would enable a greater understanding of actual value differences among generational groups.

Job Satisfaction

Several researchers have investigated job satisfaction differences among generational groups (Ayudhya, C. N., 2016 Kaifi, B. A.,2012; Kaifi, M.,2012; Khanfar, 2012; Martin, 2006; Nafei, 2012; Smithson, J., 2016; &Tulgan, 2006). Martin and Tulgan's (2006) mixed-method research noted differences among generations can manifest into friction between workers, thus impacting job satisfaction and productivity. Organizational managers and trainers were advised to customize every aspect of the employer-employee relationship to accommodate generational needs (Martin & Tulgan, 2006). A study of 148 Information Technology millennial workers suggested that gender may play a role in job satisfaction; higher job satisfaction was noted among male millennials while higher levels of organizational commitment was noted among female millennials (Kaifi et al., 2012).

Organizational Commitment

Several scholars agree higher turnover levels may exist among younger generation workers (Cennamo, 2008; D'Amato, 2008; Gardner, 2008; Herzfeldt, 2008; & Kaifi et al., 2012). D'Amato and Herzfeldt (2008) examined over 1,500 emerging European leaders to examine the influence of organizational commitment on talent

retention among generational groups. Results reflected a lesser likelihood of retention among younger cohorts due to lower organizational commitment. Similarly, Cennamo and Gardner (2008) investigated differences among Australian worker cohorts in organizational commitment and intention to leave; findings reflected that younger cohorts require autonomy and work-life balance and may have higher intentions to leave an organization in pursuit of these values. Conversely, Kowske et al. (2010) found no differences in turnover intentions among large sample of multi-generational workers. Other factors may mediate the relationship between generational group and intent to leave. For example, a study of Millennial Information Technology workers conducted by Kaifi et al. (2012) found millennials with graduate degrees are less likely to quit employment with an organization than millennials without graduate degrees. Findings of these studies suggested HR practitioners and managers should employ a generational-specific approach for talent retention (D'Amato & Herzfeldt, 2008).

While retention has been acknowledged as a problem in the literature, several scholars have noted challenges with acquisition of generational talent. Lancaster and Stillman's (2002) Ayudhya, C. N., and Smithson, J. (2016). research of multi-generational workers resulted in conclusions that the utilization of varying recruitment strategies will appeal to multi-generational candidates. For example, while flexible scheduling was noted as appealing to all generational groups, these benefits may be perceived differently by each generation (Ayudhya, 2016; Lancaster, 2002; Smithson, 2016; & Stillman, 2002). When recruiting gen Xers and millennials, an emphasis on work/life balance was critical (Zemke et al., 2000).

Personality

Lancaster and Stillman (2002), Ayudhya, C. N., and Smithson, J. (2016), noted that personality differences among cohorts have been determined in educational settings; researchers have also expressed interest in understanding the implications of generational personality differences in the workplace. Campbell and Twenge (2008) reviewed personality data gathered between the 1930s and 2008 to assess personality traits of over 1.4 million individuals; their findings reflected higher self-esteem, narcissism, anxiety levels and lower need for social approval among millennials. The researchers noted a strong need for heightened managerial awareness of personality traits among the youngest cohort, advising managers to expect unrealistic expectations, difficulty with criticism, and job-hopping among millennial workers (Campbell, & Twenge 2008).

Some researchers have cautioned organizational practitioners on stereotyping generational group personalities. Coulon, Gardiner, Lang, and Wong, (2008) examined generational differences in motivation and personality and found few meaningful differences among generational groups. The researchers argued for a focus on individual differences among workers in lieu of categorizing personality based on generational group (Wong et al., 2008). As a consensus was not fully recognized in the research, further empirical examinations of personality differences among cohorts were warranted (Fry, R. 2016).

Summary and Conclusions

Many scholars have expressed concern over the potential of labeling or stereotyping learners because of learning style research (Cuthbert, 2005; Muse, 2001:

Reynolds, 1997). Reynolds (1997) acknowledged the use of the Learning Style Instrument as a tool for professional and vocational development but raised concerns about positivistic conclusions on learning style. Cuthbert (2005) cautioned educational practitioners on using learning styles to stereotype demographic groups of students. Muse (2001) noted that the "front end" of learning style theory, in which assessment and identification of learning style occurs, is most important; Muse cautioned on the "closing end" of the theory, in which instructional strategies are shifted to accommodate learning styles (p.6). Most scholars acknowledged the measurement of learning style as advantageous tool in building self-awareness and professional development; however, many express concerns about instructional practices associated with learning style.

These critiques of learning style result in a significant debate within the literature. Should educational practitioners adapt and customize instructional strategies to accommodate learning styles? One camp argues wholeheartedly for customization of instructional strategies to learning style (Hawk, 2007; Kahn, 2007; Norwich, 2007; Shah, 2007; Slack, 2007; & Smith, 2002), while another camp argues customization and shifting of instructional practices may be unnecessary (Bennett et al., 2008; Reynolds, 1997; Sadler Smith, 2001). The learning style field has been referred to as a disorganized proliferation no doubt because of scholarly dissension in how practitioners should apply knowledge of learning style. As argued by Bishka (2010), after 30 years of research, no consensus can truly be reached on whether matching instruction design to learning style will enhance individual learning.

Assertions that learning styles do or do not vary among generational groups are largely theoretical within the literature. While a significant number of authors agrees that younger cohorts possess distinct learning styles when compared to older cohorts (Fearon, 2007; Matulich et al., 2008; Meisel, 2007; Pardue, 2008; Prensky, 2001; & Roberts, 2005), these conclusions have yet to be empirically validated. As of the date of this publication, only two studies were identified that specifically examined learning style differences among generational groups in workforce settings (Tyberg, 2012; Victor, 2012). Both authors concluded that generational differences in learning style did not exist; however, limitations, such as small sample size and underrepresentation of millennials within the sample population impacted the validity of findings.

The learning preferences of millennial students alone have been the focus of other authors (Koeller, 2012; McNeely, 2005; Roehling et al., 2011). McNeely (2005) reflected on his own experiences as a millennial learner and argued that millennials learn by "doing," citing a need for hands-on, experimental, and interactive learning activities (p.4.4). Similarly, learning preferences among millennials were noted by Koeller (2012) as a desire for experiential learning activities, structure, and integration of technology. Roehling et al. (2011) conducted focus groups of millennial undergraduate learners and found a strong preference for active learning; students shared a low tolerance for boredom and expressed desire for highly stimulating activities. Thus, shared perspective by more than one author that Millennials are not passive learners and prefer active involvement in learning processes (Roehling et al., 2011).

Technology has certainly been theorized as a factor of influence in millennial learning styles. Millennial students have been referred to as "Digital Millennial Learners," a term utilized to depict highly networked learners with extensive familiarity and use of technology (Matulich et al., 2008, p.1). Oblinger and Oblinger (2005) referred to millennials as the net generation, a term depicting millennial expertise and familiarity with technology. Meisel & Fearon (2007) theorized that technology has defined a new and unique reality of learning for Millennials, resulting in distinct information-seeking styles. Similarly, Matulich et al. (2008) noted Millennials process information differently than older generations, and prefer self-paced, informal, visually stimulating learning environments. Prensky (2001) noted that Millennial students "think and process information fundamentally differently from their predecessors" (p.1). Combined, these authors present a sound theoretical foundation for the further investigation of how Millennials prefer to learn and cognitively process information.

Perhaps with the millennial audience being of primary focus, older generational cohorts have been overlooked in scholarly literature on learning styles. Nonetheless, a gap lies not only in concluding whether learning styles vary among cohorts, but also in addressing the earning needs of a non-traditional older learning population. Not all scholars agree that learning styles vary among cohorts. Bennett et al. (2008) conducted a critical review of the literature to assess the debate on millennial technical skills and learning preferences; little empirical evidence was found to support claims that learning style differences exist among generational groups. While learning style and cognitive differences among individual learners were noted, Bennett et al. (2008) highly questioned

attributing a learning preference of learning to an entire generational group. Thus, the empirical study of learning style differences among generational groups is warranted so that conclusive statements can be made regarding variances, if any.

As only limited empirical evidence was available to review the relationship between the constructs of generational group and learning style, having no differences is entirely possible that learning style differences are not distinctly notable among generational groups, and that shared characteristics exist among all groups. O'Dell (2009) noted a shared desire among generational groups for personalization and flexibility in online learning. Even if significant interactions did not exist, an enhanced understanding of learning preferences and trends among generational groups would be beneficial to management education and organizational learning practitioners. Additionally, learning is a complex construct that quite likely is related to numerous factors, including prior life experiences, cognitive style, personality, and existing knowledge and skills. Only through the further investigation of potentially related factors can scholars understand the complex phenomenon of learning processes among generational groups.

This review presented the complexity of research associated with generational interactions and learning styles. The millennial population has been of primary interest in many studies of generational differences in higher education settings; main themes were identified among generational groups including interactions in communication, technology, and values. As millennials entered the workplace shortly after the turn of the 21st century, research is limited on this cohort in workplace settings. 21st century scholars have examined generational differences in the constructs of job satisfaction,

organizational commitment, personality, values, work attitudes and work/life balance and concluded differences among groups. The field of learning theory and styles is a proliferation of various theoretical frameworks and instruments for measuring learning. Numerous perspectives were noted in examining and describing the phenomenon of learning, including the behavioral, cognitive, and social schools of thought. The theory of experiential learning (Kolb, 1984) was selected for this study because the experiential learning theory is described as a holistic theory that encompasses behavioral, cognitive, and social aspects. Additionally, experimental learning theory has been noted as an ideal theoretical foundation to specifically examine worker learning preferences (Akella, 2010). Noteworthy themes in learning style research include studies on behavior and demographics, culture, virtual learning, and workforce learning.

In conclusion, this literature review revealed that managing and accommodating generational differences in workplace and higher education settings were a significant problem. As millennials entered the workforce around the year 2001, scholarly literature was limited on the investigation of this youngest cohort in organizational settings. Scholars have shown interest in how generations differ in the constructs, such as work values and attitudes, but an understanding of how different generational groups learn in the workplace is not fully understood. Prior research conducted on generational groups within multiple settings establishes a foundational theoretical base that multiple significant differences exist among cohorts. Further research on these interactions will enable managers, organizational leaders, and management education practitioners to

deliver learning solutions that appeal to a diverse and complex multi-generational audience.

Chapter 3: Research Method

The purpose of this study was to determine (a) the differences of the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on generational cohort (independent variable); (b) the differences in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on gender (independent variable); and (c) the difference in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, between generational cohort (independent variable) and gender (independent variable). Another purpose of this study was to examine Kolb's learning theory by utilizing Kolb's Learning Style Inventory Tool 3.1. The results of this study may contribute knowledge to inform the practice of management education and workforce curriculum design, development, and implementation.

The chapter includes an explanation of the methodology and procedures used to answer the research question. I describe the research design and explain the suitability of the quantitative nonexperimental explanatory cross-sectional survey design used in this study. The chapter also provides a description of the target population and sample, testing procedures, survey instruments, and an explanation of how the instruments and procedures were used to collect and analyze the data. The chapter also provides the justification for the use of statistical analysis in the study.

Research Design and Rationale

I used a quantitative nonexperimental comparative cross-sectional survey research design. The nonexperimental quantitative approach includes numeric, quantifiable data.

Nonexperimental research focuses on statistical relationships between two or more variables rather than manipulations of an independent variable (QuestionPro Inc. 2019). Quantifiable data offer a systematic process that allows findings to be generalized across groups. Babbie (2016) indicated that quantitative research is appropriate for studying relationships between variables using statistical analysis. Quantitative methodologies require the use of quantitative measurement, and statistical analysis is conducted on the quantitative data to explain the topic being investigated (Silva, 2017).

Bryman and Bell (2015) stated that quantitative methodology is aligned with a positivist philosophy, and Muijs (2014) stated that quantitative methods are used to examine the relationship between variables. Sanderson (2017) stated that experimental designs are not always practical in behavioral or social sciences; therefore, a nonexperimental design is necessary to enable the researcher to make inferences from samples to explain relationships. Tanner (2018) also contended that a nonexperimental design is more likely to provide real-world insight than an experimental design. A quantitative nonexperimental comparative cross-sectional survey design was appropriate for the current study.

Explanatory studies are systematic, factual explanations aligned with the positivist assumption that learning is objective and quantifiable. This research methodology was appropriate for the current study because the data used in the analysis were collected using surveys. In the social sciences, surveys and questionnaires are commonly used to increase the understanding of a population. The methodology is used to quantify perception of learning preferences or areas of interest when researchers are attempting to

explain relationships between variables (Leedy & Ormrod, 2019). The research goals in an explanatory study are to explain and evaluate a situation as it exists, without any manipulation of variables (Silva, 2017). In the current study, measurement of the dependent variable (learning style) was achieved using Kolb's Learning Style Inventory Tool 3.1 (D. A. Kolb, 1984), which was consistent with previous academic and organizational research on the subject.

The explanatory design was appropriate for use in this study because I was interested in determining whether the dependent variable of learning style was significantly different across the groupings of the independent variable. I sought to test how the learning style and gender of college business students born between 1960 and 2000 was related or different from other cohort members born between 1960 and 2000.

Cross-sectional studies are based on observations that take place in different groups at one time. This means there is no experimental procedure, so no variables are manipulated by the researcher. Instead of performing an experiment, the researcher records the information observe in the groups being examined. A cross-sectional study can be used to describe the characteristics that exist in a group but cannot be used to determine any relationship that may exist. This method was used to gather information only. The information was then used to develop other methods to investigate the relationship that was observed.

Survey research is a method of collecting information by asking questions. Sometimes interviews are done face-to-face with people at home, in school, or at work. Other times questions are sent in the mail for people to answer and mail back.

Increasingly, surveys are conducted by telephone. I used interval questions and Likert scale questions from a questionnaire that was administered through Qualtric.Com. The design was appropriate for studying the differences between millennial and generation Xers learning style as measured by the Kolb's Learning Style Inventory 3.1 (DV) based on generational cohort (IV) and gender (IV) of students enrolled in college business courses in the United States.

Methodology

Population

The population for this study consisted of students born between 1960 and 2000 that were currently enrolled in college business courses in the United States. The target population for this study included both male and female business college students. The U. S. Census Bureau (2016) estimated over 20.4 million people enrolled in college in the year 2015 in the United States.

Sampling Frame and Sampling Procedures

The sampling frame consisted of the Qualtrics audience participants who were born between 1960 to 2000 that were currently enrolled in college business courses in the United States. Random sampling was used for this study. Random sampling is a straightforward sampling strategy. It is also a popular method for choosing a sample from a population for a wide range of purposes. In random sampling each member of population is equally likely to be chosen as part of the sample. It has been stated that the logic behind random sampling is that it removes bias from the selection procedure and should result in representative samples (Forzano & Gravetter, 2019).

The minimum sample size for this study was determined to be 210 using G*Power 3.1.9.2 software with a medium effect size (f = 0.25), a significance level of α = 0.05, a power of 0.80 (1 – β), and two groups. The input parameter α = 0.05 is the probability of incorrectly rejecting a true null hypothesis (a Type I error). The input parameter β = .20 is the probability of incorrectly accepting a false null hypothesis (Type II error). The Power of the test is the probability of rejecting a false null hypothesis, which in this case is .80. The input and output data from the G*Power analysis is presented in Table 3 and Figure 2. Table 3 provides the input parameters utilized in the power analysis and the output parameters resulting from the analysis. Figure 2 provides the central and noncentral distribution plot based on the power calculation. According to Buchner, Erdfelder, Faul, and Lang, (2014), G* Power 3 is a software program to use when calculating the power of statistical tests for social and behavioral studies.

Table 3

*Protocol Parameters of Power Analyses for G*Power 3.9.1.2 Used to Determine the Minimum Sample Size*

F tests -	ANOVA: Fixed effects, special, main effects, and interactions
Analysis:	A priori: Compute required sample size
Input:	Effect size f = 0.25
	α err prob = 0.05
	Power (1-β err prob) = 0.80
	Numerator df = 1
	Number of groups = 2
Output:	Noncentrality parameter λ = 8.0000000
	Critical F = 3.9163246

Denominator df = 126

Total sample size = 210

Actual power = 0.8014596

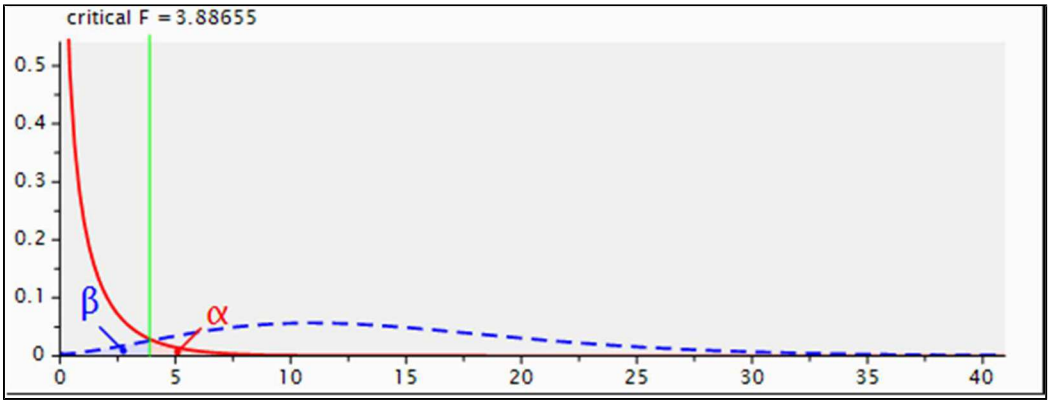

Figure 2. Plot of central and noncentral distributions from G*Power 3.1.92.

Procedures for Recruitment

Qualtrics® was contracted to collect responses from 216 participants using a random sample selected audience who met the sample frame inclusion criteria. Participants then responded to the survey questions electronically. The inclusion criteria for this study required participants to be enrolled in college business courses in the United States. Other criteria were based on the age of the participants born between the years 1960-2000. A detailed informed consent process was utilized to ensure the research would be bound to key ethical principles of justice, beneficence, and respect (U.S. Department of Human & Health Services, 2020). Individuals that volunteered to participate in the study was advised of their rights through an electronic informed consent process, which took place prior to any data collection. The informed consent process was facilitated electronically via Qualtrics's secure online web platform. Participants had a

chance to read the informed consent and electronically acknowledge consent to participate via an “I agree” button. Participants that did not consent immediately were exited from the study. Participants were asked questions prior to the survey to identify enrollment in college business courses, gender, and date of birth. At no time did the researcher have access to individual names or other identifying information.

Participation

Individuals that agreed to participate in the study were advised of their rights through an electronic informed consent process, which was provided prior to any data collection. The purpose of the informed consent was to provide sufficient information on the nature of the study, risks and or benefits, and emphasis on a participant’s voluntary right to participate (U.S. Department of Human & Health Services, 2020). As learning style score data was gathered electronically from participants, the informed consent process was facilitated electronically via Qualtrics secure online web platform. Participants had to read the informed consent and electronically acknowledge consent to participate via an “I agree” button. Participants that did not consent could immediately exit this study. The data collection process was furthered facilitated in a manner that would protect the identity of all participants. At no time did the researcher have access to individual names or other identifying information. All data collected was coded by case numbers and reported anonymously. Data was directly exported into Statistical Package for the Social Sciences (SPSS) software.

Data Collection

Studies by Crossman (2020) and Amyx, Bennett, and Darrat (2017) has validated the use of online survey instruments. Figure 3 provides a graphical summary of the data collection process.

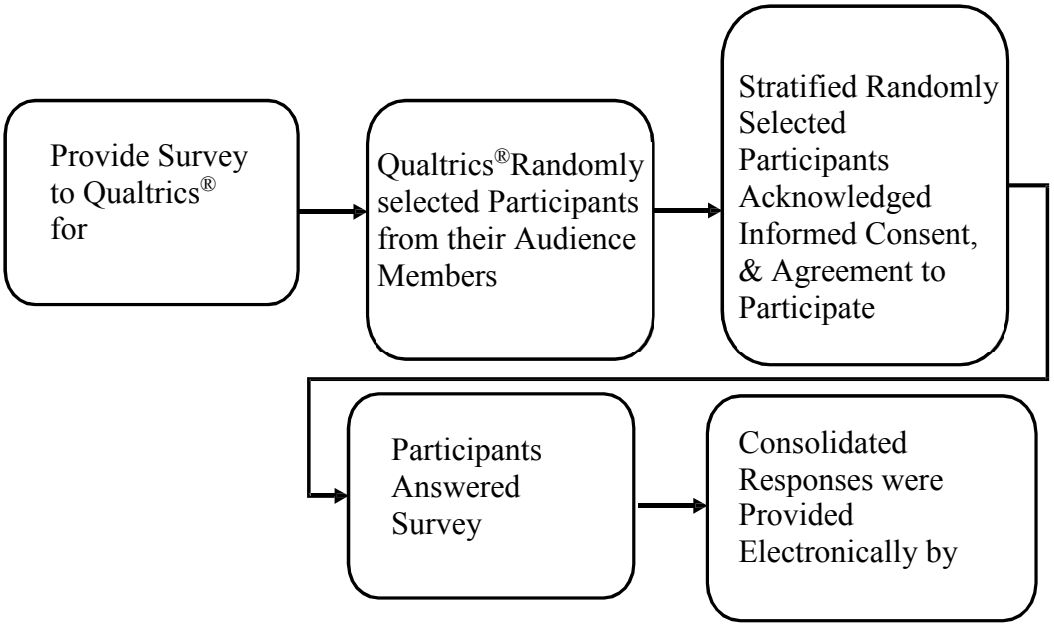

Figure 3. Data collection process.

The study used Qualtrics, an online professional survey company, to collect responses from participants of their audience panel. The Qualtrics online research and data collection service allowed researchers to upload survey questions to Qualtrics's secure servers. The Qualtrics staff then selected participants who met the inclusion criterion using a random sampling procedure from their existing audience panel. Qualtrics did not allow incomplete responses to be submitted. Willingham (2018) stated online data collection methods provides more responses to the survey in a short period of time (Willingham, 2018); Dibb and Michaelidou (2016) stated online surveys provides

easy access to participants while maintaining anonymity. The subjects would be more comfortable in answering the survey online and would eliminate any effect the presence of the researcher may have on the subjects.

Participants in the survey received screening questions, an informed consent form titled, Interactions Among Learning Style Preferences, Generational Cohorts and Gender. The screening questions presented in the Appendix were designed to ensure participants were members of the desired population of college business students within the United States who were currently enrolled in business courses and were born between 1960 and 2000.

The survey included an informed consent which required participants to read and agree to prior to entering the survey questionnaire. Study participants were given two options, “Yes” (agree to informed consent), or “No” (does not agree to informed consent). Participants who chose not to agree to the informed consent by choosing “No” was immediately taken to the end of the survey and thanked for their participation. Only participants that chose the “Yes” option, and agreeing to the informed consent, was allowed access to the survey questionnaire. Individuals whose responses to the screening questions that did not meet the inclusion criteria was taken to the end of the survey and thanked for their participation.

The questionnaire was delivered through a web link to the study participants in the Qualtrics audience. If the panelists elect to complete the survey, they were rewarded by Qualtrics with an undisclosed minimal payment. The web link included an introductory page that explained the purpose of the study, instructions on how to answer

the survey questionnaire, an informed consent form that included the promise of anonymity and confidentiality, and the survey questionnaire. First, participants were asked the question "What is the year of your birth? Only participants that answers within the years of "1960 to 2000" could advance to the next question.

Data collection was stopped when responses were obtained from participants that met the inclusion criterion of the study. Qualtrics included parameters in the survey to ensure all questions were answered, and panelists would only be allowed to take the survey one time.

Permission for Instrument's Use

Permission was obtained from the Korn Ferry Hay Group, Inc. to use the Kolb's Learning Style Inventory 3.1 after requesting permission in writing.

Demographic Questionnaire

The survey included four demographic questions. Respondents were asked:

Question 1. What is the year of your birth?

Question 2. Are you currently enrolled in college business courses in the United States?

Question 3. What is your highest earned degree?

Question 4. What is your gender?

Learning-Style Inventory Sentences

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of endings. Rank the endings for each sentence according to how well you think each one

fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job or at school. Then, using the spaces provided, rank a "4" for the sentence ending that describes how you learn best, down to a "1" for the sentence ending that seems least like the way you learn. Be sure to rank all the endings for each sentence unit.

The new Learning Style Inventory 3.1 described here modified the Learning Style Inventory 3 to include new normative data described below. Figure 3 revision included new norms that were based on a larger, more diverse, and representative sample of 6977 Learning Style Inventory users (Kolb, 2010). The format, items, scoring, and interpretative booklet remain identical to Kolb's Learning Style Inventory 3. The only change in Kolb's Learning Style Inventory 3.1 was in the norm charts used to convert raw Learning Style Inventory scores.

Table 4

Example of Completed Sentence Set 1993 David A. Kolb Experience-Based Learning Systems Inc.

Sentence Set	A	B	C	D
5. When I learn:	I like to deal with my feelings	I like to think about ideals	I like to be doing things	I like to watch and listen
6. I learn best when:	I listen and watch carefully	I rely on logical thinking	I trust my hunches and feelings	I work hard to get things done
7. When I am Learning:	I tend to reason things out	I am responsible about things	I am quiet and reserved	I have strong feelings and reactions
8. I learn by:	feeling	doing	watching	thinking
9. When I learn:	I am open to new experiences	I look at all sides of the issues	I like to analyze things, break them down into parts	I like to try things out
10. When I am learning:	I am observing	I am an active person	I am an intuitive person	I am a logical person
11. I learn best from:	observation	personal relationship	rational theories	a chance to try out and practice
12. When I learn:	I like to see results from my work	I like ideas and theories	I take my time before acting	I feel personally involved in things
13. I learn best when:	I rely on my observations	I rely on my feelings	I can try things out for myself	I rely on my ideas
14. When I am learning:	I am a reserved person	I am an accepting person	I am a responsible person	I am a rational person
15. When I learn:	I get involved	I like to observe	I evaluate things	I like to be active
16. I learn best when:	I analyze ideas	I am receptive and open-minded	I am careful	I am practical

The new Learning Style Inventory 3.1 described here modified the Learning Style Inventory 3 to include new normative data described below. Figure 4 revision included new norms that were based on a larger, more diverse, and representative sample of 6977 Learning Style Inventory users (Kolb, 2010). The format, items, scoring, and interpretative booklet remain identical to Kolb's Learning Style Inventory 3. The only change in Kolb's Learning Style Inventory 3.1 was in the norm charts used to convert raw Learning Style Inventory scores.

Operationalization of Constructs

Two Independent Variables Each with Two Categorical Independent Groups

The assumption that the values of the independent variables were measured on a categorical scale (nominal or ordinal), and each independent variable contained two categorical independent groups was tested by examining the measurement properties of the independent variables (Field, 2013).

Independence of Observations

The assumption of independence of observations were tested examining participant responses to ensure they did not identify with both independent variable groups (generational cohorts or gender) and did not identify with both categories within each independent variable (Field, 2013; Lund Research LTD., 2016).

Outliers

Outliers are data points within the data that lie far away from their predicted value. SPSS generates a Casewise Diagnostics table that identifies all cases where the response standardized residuals are greater than ±3 standard deviations from the mean

(Field, 2013; Lund Research LTD., 2016). The assumption of outliers was tested by examining boxplots of the dependent variable values within each cell of the design. Outliers were those data points that lie 1.5 box-lengths from the edge of the box, and extreme outliers were data points that lie 3 box lengths from the edge of the box, which were marked with an asterisk (*) and the case number(s). In the event outliers were identified, the next step was to identify the type of outlier (data entry errors, measurement errors, or genuinely unusual values) to determine if the case should be deleted from the statistical analysis. Outliers identified to be a result of either a data entry error or a measurement error requires the necessary correction to be made and re-run the ANOVA. If the outlier is identified to be a genuinely unusual value, the outlier must be determined if the case will be deleted from the statistical analysis. Warner (2013) states that, in two-way ANOVA, extreme outliers must be removed from the data set.

Normality

Two-way ANOVA assumes that data are normally distributed in each cell of the design (Lund Research LTD., 2016). The normality assumption in this study will be tested using three methods (a) skewness values, (b) kurtosis values, and (c) examination of the histograms. For the assumption of normality, skewness statistics greater than ±1.0 indicate nonnormality and kurtosis statistics considerably different than 3.0 indicate non-normality (Kline, 2005). Histograms of the distribution of the residuals should show an approximate representation of a bell-shaped curved for a normal distribution.

Homogeneity of Variances

Two-way ANOVA assumes the variances of the residuals are equal in all cells of the design (i.e., for all independent variable groups) (Lund Research LTD., 2016). The assumption of homogeneity of variances was tested using Levene's test of equality of variances by examining the p value created by the test. The homogeneity of variances assumption is satisfied when $p > (\alpha = .05)$.

Instruments Provided

One instrument was used in the cross -sectional, survey research study: Kolb's Learning Style Inventory Tool 3.1 (Kolb, 2007). The Kolb's Learning Style Inventory Tool 3.1 is an existing, validated instrument and the reliability of the instrument was tested by numerous leadership research studies by David Kolb. The instrument was not changed or altered for the purposes of the study; no field-testing was required for this instrument. The dependent variable of learning styles of generational cohort's preference as measured by the Learning Style Index was measured using Questions 5, 6, 7, 8, 9, 10, 11, 12, 13, 14,15 and 16 of the Learning Style Inventory 3.1 (Kolb, 2007). D. A. Kolb (2005) indicated that these 12 questions measured learning style preferences in the instrument. The items on the Learning Style Instrument 3.1 asked the respondents to rate the frequency of actions to learning preferred on a 5-point Likert scale from 1 (least like you), 2 (third most like you) 3 (second most like you) to 4 (most like you). The average score of these four stated items measures the dependent variable.

Learning styles was measured by using 12 survey questions in the areas of diverging, assimilating, converging, and accommodating (Kolb, 2010). The study was

measured by asking twelve questions based on a ranking-order of preferences on a Liker scale from 1 to 4, with 1 representing ‘least like you’ and 4 representing ‘most like you’ using the Kolb’s Learning Style Inventory Tool 3.1(Kolb’s 1984). The items on the Learning Style Inventory corresponded with 4 learning modes; the degree of everyone’s emphasis on the learning modes yielded 1 of 4 preferred learning styles descriptions of the four learning styles by dominant learning modes as shown in Figure 4 of diverging, assimilating, converging, and accommodating by using the means of the score (Kolb, 2010).

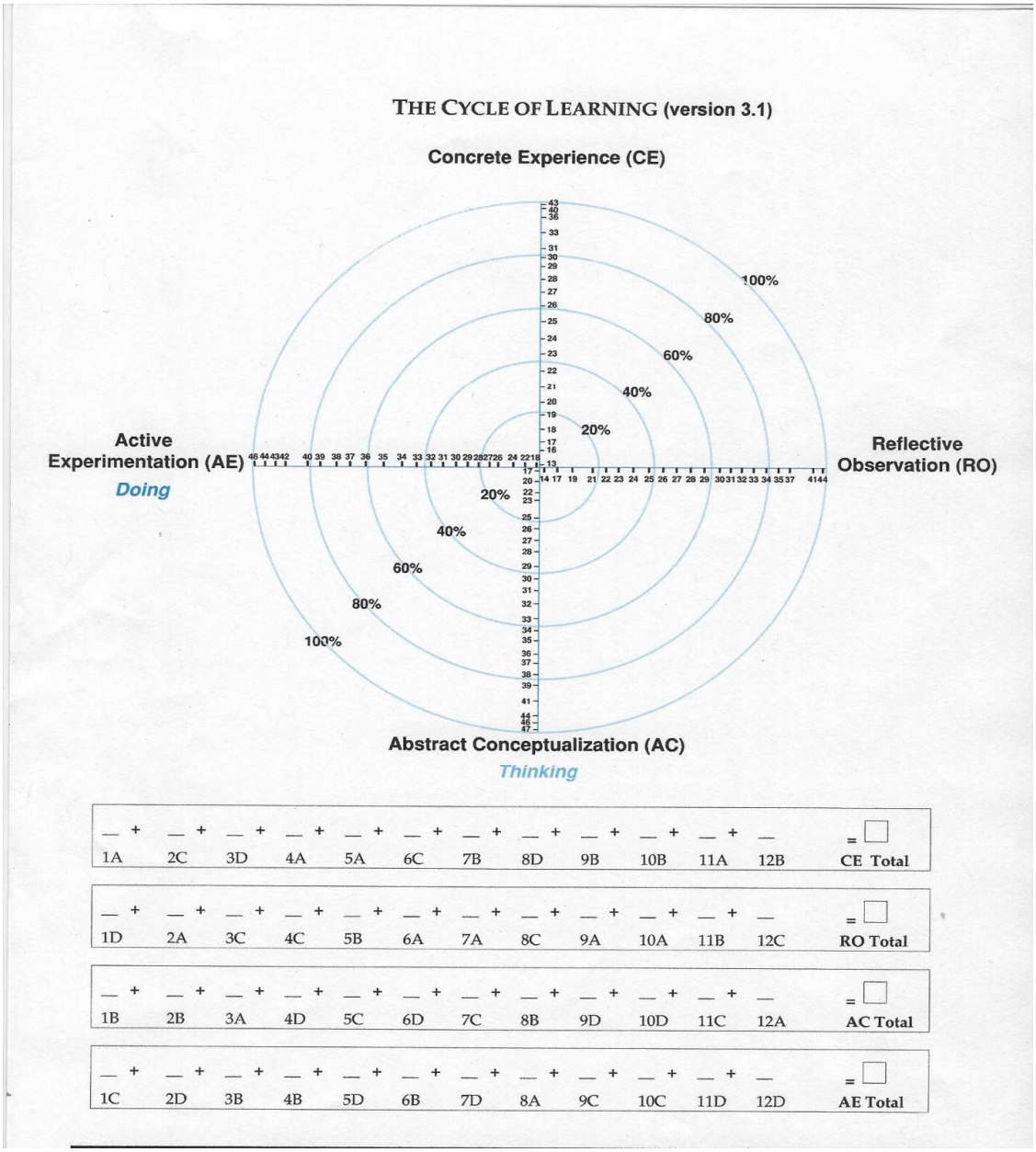

Figure 4. Kolb's Learning Style Inventory 3.1- David Kolb's Cycle of Learning (Version 3.1) Experimental Learning Base- Systems, Inc. (2005).

Operationalization for Each Variable

IBM Statistical Package for Social Sciences (SPSS) version 24 was used for all data analysis. The data analysis method used in this study was two-way ANOVA to

examine the differences between generational cohorts learning style preference based on (a) millennials and generation Xers and (b) gender. The learning style index (DV) was calculated for each participant by using the arithmetic mean of participants' responses to the Learning Style Inventory 3.1 Instrument. Prior to performing the statistical analysis, all data was examined to ensure all data were present and no adjustments necessary. The data was tested for all assumptions of two-way ANOVA (Lund Research LTD.,2016).

Testing the Assumptions for Two-Way ANOVA

Two-way ANOVA requires seven assumptions to be satisfied, the first three assumptions are related to the study's design, and the last three assumptions are related to the nature of the study's data and are specific to the cells of the design (Field, 2013; Lund Research LTD., 2016).

Sample Randomly Selected

The assumption that the sample will be randomly selected to be tested by examining the sampling procedure used by Qualtrics to draw the sample.

One Dependent Variable Measured on a Continuous Scale

The assumption that the value of the dependent variable is based on a 4-point Likert scale was tested by examining the measurement properties of the dependent variable (Field, 2013).

Testing the Research Question Hypotheses

Two-way ANOVA was used to analyze the data in the research study. Two-way ANOVA was appropriate for this study because the study contained 2 categorical, independent variables that consisted of 2 groups within each variable, and 1 dependent

variable measured on a continuous scale (Lund Research LTD., 2016). Two-way ANOVA requires data investigation prior to performing analysis to identify missing data, as well as addressing the seven assumptions associated with two-way ANOVA. The following null and alternative hypotheses will be tested using two-away ANOVA.

Data Analysis Plan

Validity

Validity was defined as the accuracy of the research (Vogt, 2015). Vogt acknowledge various ways validity was internally measured, including face, content, criterion, and construct (Vogt, 2015). Kolb and Kolb (2005) identified 2 studies that reported on the validity of his Learning Style Inventory Tool 3.1. These studies were conducted by Kablan (2019) as well as Willingham (2018). In both instances of reliability and validity (internal consistency and test-retest reliability) was determinate. Kolb and Kolb (2005) reported that the calculated values were acceptable. Regarding the validity of the Learning Style Inventory Tool 3.1, studies evaluated by Kolb and Kolb (2005) revealed that correlation coefficients and factor analyses were the most computed methods. In a study conducted by Cronbach (2004) reliability was computed through the determination of alpha. The Learning Style Inventory Tool 3.1 validity remains the preferred method for identifying internal validity of the instrument (Trochim, 2020).

Internal Validity Evidence

Several predictions could be made about the relationship among the scales of the Learning Style Inventory. These relationships were examined in 2 ways—through a first-

order correlation matrix of the 6 LSI scales and through factor analysis of the 4 primary LSI scales and or inventory items (Kolb, A. Y., and Kolb, D. A., 2005).

Table 5

Internal Validity Evidence

RQ	Dependent variable and level of measurement	Independent variable and level of measurement (including moderating and mediating variables)
RQ1	Learning Style Index: Interval	Generational Cohorts: Nominal
RQ2	Learning Style Index: Interval	Gender: Nominal
RQ3	Learning Style Index: Interval	Generational Cohorts: Nominal Gender: Nominal

External Validity

It was also critical to make appropriate inferences and conclusions regarding data collected (Trochim, 2020). Several scholars recognized inability to generalize findings to a general population as a significant threat to external validity (Scandura, 2000; Sorensen, 2018; & Williams, 2000). As the intent in conducting this study was to generalize findings to the general U.S. college business student population, care was taken in selection of sampling methods and sample size. A probability method of random sampling was selected to mitigate selection bias and ensure each member of the sample participant had equal chance of employ the research design. Common ways to measure reliability included internal consistency and test-retest reliability tests. Internal consistency tests involved the use of Cronbach's alpha coefficients, which measure correlation of similar constructs (Cronbach, 2004). The correct sample size was foundational for quality quantitative research (Buchner, 2014). A sample size calculator was consulted to calculate an adequate size, resulting in a sample size of 210 individuals.

Reliability

Research should also be replicable, permitting other scholarly researchers to existing versions of Kolb's Learning Style Instrument has been examined by scholars, with acceptable reliability concluded due to Cronbach's Alpha scores in the .80 range (Liang et al, 2017; Mohamad et al., 2015). Test-retest methods examined the consistency of data results at 2 different times of instrument administration. In a study by Heffler (2001), good test-retest reliability of the Learning Style Instrument was reported.

Research Questions and Hypotheses

Three research questions and corresponding hypotheses were addressed in this study:

RQ1: What is the degree of interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV)?

H_o1: There is not a statistically significant interaction between the means of learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV). That is, H01: $\mu1 = \mu2$, where $\mu1$ is the mean of the learning style index (DV), as measured by the Learning Style Inventory 3.1, and $\mu2$ is the mean of generational cohorts.

H_a1: There is a statistically significant interaction between the means of learning style index (DV), as measured by the Learning Style Inventory 3.1 based on generational cohort (IV). That is, HA1: $\mu1 \neq \mu2$, where $\mu1$ is the mean of learning style index (DV), as measured by the Learning Style Inventory 3.1 and $\mu2$ is the mean of the learning style index.

RQ2: To what extent is there interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV)?

H_o2: There is not a statistically significant interaction between the means of learning style index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV). That is, H02: $\mu 1 = \mu 2$, where $\mu 1$ is the mean of learning style index (DV), as measured by the Learning Style Inventory 3.1, based upon gender (IV)?

H_a2: There is a statistically significant interaction between the means of the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV). That is, HA2: $\mu 1 \neq \mu 2$, where $\mu 1$ is the mean of the learning style index (DV), as measured by the Learning Style Inventory 3.1.

RQ3*:* To what extent is there interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV), and gender (IV)?

H_o3: There is not a statistically significant interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV), and gender (IV).

H_a3: There is a statistically significant interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV), and gender (IV).

Threats to Validity

Ethical Procedures

Ethical considerations for this online survey study included participant privacy, confidentiality, anonymity, data security and quality. Responses were anonymous because IP addresses, email addresses, names, and other private personal information was not collected (respect for persons). Survey was brief, and questions were designed to minimize intrusiveness. Responses were not mandatory (beneficence). Survey did not show any inclusion criteria with respect to ethnicity, race, or type of business and provided no incentive to entice participants (justice and equity). I requested that Qualtrics submit completed surveys only. No missing data was anticipated. Qualtrics needed to screen more than 210 participants to ensure complete responses. All participants and data were handled according to Walden University IRB with responsibility, integrity and respect for people's rights and dignity received IRB approval # 09-09-20-1020925.

Participant Privacy and Confidentiality

A detailed informed consent process was utilized to ensure the study was bound to key ethical principles of justice, beneficence, and respect (U.S. Department of Human & Health Services, 2020). Individuals that volunteered to participate in the study was advised of their rights through an electronic informed consent process, which took place prior to any data collection. The purpose of the informed consent was to provide sufficient information on the nature of the study, risks and or benefits, and emphasis on a participant's voluntary right to participate (U.S. Department of Human & Health Services, 2020). As learning style score data was gathered electronically from

participants, the informed consent process was facilitated electronically via Qualtrics secure online web platform. Participants could read the informed consent and electronically acknowledge consent to participate via an "I agree" button. Participants that did not consent immediately exit the study. The data collection process was further facilitated in manners that protected the identity of all participants. At no time was the I given access to individual names or other identifying information. All data collected was coded by case number and reported anonymously.

Benefit Risk Analysis

The information was gathered via the study could be beneficial to the field of management education in both corporate and educational sectors. Minimal risk was associated with the collection of learning preference data from the participants. The data was collected through the study was information that may be commonly collected from generational cohort students in United States college business courses today. While risks were minimal, possible risks to participants may have included discomfort with the survey questions or unauthorized access to the survey data due to the online, electronic nature of the data collection process. I was unable to 100% guarantee that information collected from participants online could not be accessed by an unauthorized third party, such as a computer hacker. Participants was notified of these risks via the informed consent process. In the unlikely event a participant experiences discomfort with any of the study's risks, they were be able to exit the survey at any time.

Social Change

Retirees or workers near retirement are looking for ways to work beyond retirement age and to earn a substantial income. Older workers are performing paid work following retirement and are working longer and not always voluntarily (George, Harper, Kulik, & Ryan, 2014). The results of the study may lead to the formulation of strategies that may contribute to the continued growth of the multigenerational workforce, thereby positively contributing to social change. Kulik et al. (2014) found that retraining and updating the skills of the multigenerational workforce could help aging individuals meet the challenge of social fairness and equity by compensating them for their support. Many older workers want to give back to their community with intergenerational solidarity and reciprocity to promote intergenerational fairness (Thijssen, 2016). Training of multiple generations may impact social change by accommodating personalized learning styles to acknowledge diversity within the workforce and encourage an understanding of skills (Azevedo, 2016 &Dwyer, 2016). To provide adequate training to a multigenerational workforce, managers could employ a variety of engagement practices that may benefit society with increased economic productivity through decreased costs of retirement benefits and promotion of healthier living and greater longevity.

Summary

In Chapter 3 an introduction was presented on the research methods used for this study. A discussion of the research design and rationale was presented along with the methodology detailing the population, sampling frame and sampling procedures. Procedures for recruitment participation and data collection were presented.

Instrumentation permission for instrument use was obtained. Demographic questions and Learning Style Inventory sentences were used. The survey instrument used was identified and discussed. The validity and reliability of the instrument and ethical considerations were described. The 3 research questions (a)What is the degree of interaction between the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1 based on generational cohort (independent variable). (b) To what extent is there interaction in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1 based on gender (independent variable). (c) To what extent is there interaction in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1 based on generational cohort (independent variable) and gender (independent variable) was discussed. Implications for social change were noted. Training of multigeneration may have the ability to impact social change by accommodating personalized learning styles to acknowledge diversity within the different generations to encourage an understanding of skills (Azevedo, 2016 & Dwyer, 2016). To provide adequate training to a multi-generational workforce, managers should employ a variety of engagement practices that may benefit society with increased economic. Chapter 4 focuses on the research results from the completed data analysis.

Chapter 4: Results

The purpose of this quantitative nonexperimental comparative cross-sectional survey study was to determine (a) the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on generational cohort (independent variable); (b) the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on gender (independent variable); and (c) the interactions in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, for the interaction between generational cohort (independent variable) and gender (independent variable). Another purpose of this study was to examine Kolb's learning theory by utilizing Kolb's Learning Style Inventory Tool 3.1. The results of this study may contribute knowledge to inform the practice of management education and workforce curriculum design, development, and implementation.

Chapter 4 includes a discussion of the data and statistical analysis. Chapter 4 also addresses the research questions through testing of the null and the alternative hypotheses. Chapter 4 contains results of the descriptive data analysis and two-way ANOVA to answer the research questions. IBM©SPSS® Statistics Version 24 was used to conduct the data analysis.

Data Collection

Sample Selection and Size

The sampling frame consisted of Qualtrics audience participants who were born between 1960 and 2000 and were currently enrolled in college business courses in the

United States. Random sampling was used for this study. The strata used in this research were generational cohort (IV) and gender (IV).

Qualtrics was instructed to collect a minimum of 218 responses, as computed by G*Power 3.1.9, from members of the Qualtrics audience participant pool who met the inclusion criterion. A total of 210 responses were received. The post hoc power analysis outputs from the sample are presented in Table 6 and Figure 4. The power achieved was 0.9501 as compared to the a priori power of power of 0.8015. Thus, $\alpha = .05$ means that the probability of a type I error (incorrectly rejecting a true null hypothesis) was .05, or 5% of all possible samples. The power of the test, the probability of a type II error ($1 - \beta$) (the probability of accepting a false null hypothesis) was 0.9501, which will occur in 4.99% of all possible samples.

Table 6

*Post Hoc Power Analysis From G*Power 3.1.9.2 Based on the Parameters for This Study*

F tests – ANOVA: fixed effects, special, main effects and interactions		
Analysis:	Post-hoc: Compute achieved power	
Input:	Effect size f	0.25
	α err prob	0.05
	Total sample size	210
	Numerator df	1
	Number of groups	2
Output:	Noncentrality parameter λ	13.1250000
	Critical F	3.8865546
	Denominator df	208
	Power (1-β err prob)	0.9501287

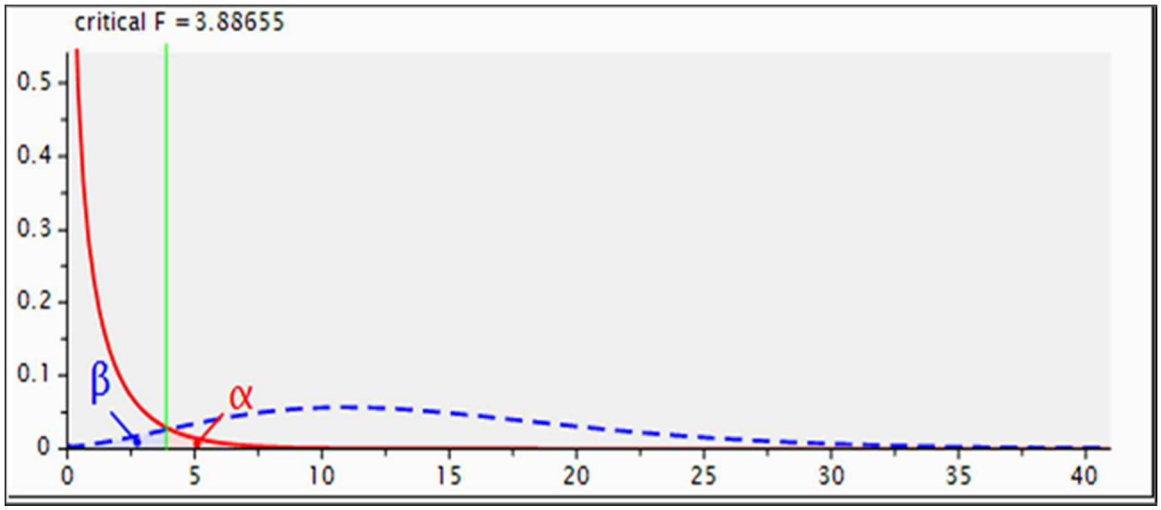

Figure 5. Plot of post hoc central and noncentral distributions from G*Power 3.1.9.2.

Demographic Statistics of Participants

The survey included four demographic questions. Respondents were asked to provide their date of birth and to verify their enrollment in college business courses in the United States. Respondents were also asked to provide their highest degree earned with multiple choice options. Finally, respondents were provided two options for gender: male or female.

Results

Prior to answering the survey instrument questions, respondents were asked demographic questions. Summaries of demographic information collected from this study's participants are presented in Tables 7 through 9. The sample of this study comprised 46.79% (n = 102) males and 53.21% (n = 116) females. Generational cohorts comprised 175 (87.5%) millennials and 25 (12.5%) generation Xers; generation Xers comprised 17 (58.5%) males and 12 (41.5%) females. Millennials comprised 87 (46.5%) males and 100 (53.5%) females. Although most of the responses did not show much

diversity in learning styles, the responses concerning education level did. Fifty-two (23.85%) participants had earned associate degrees, 67 (30.73%) had earned bachelor's, 37 (16.97%) had earned master's, 14 (6.42%) had earned a doctorate, 15 (6.88%) had earned professional degrees, and 33 (15.14%) had not earned a degree.

Table 7

Gender

Gender	Number	Percentage
Male	102	46.79%
Female	116	53.21%
Total	218	100%

Table 8

Highest Degree Earned

Level of Degree Earned	Male	Female	Percentage	Total
Associate	18	34	23.85%	52
Bachelors	31	36	30.73%	67
Masters	20	17	16.97%	37
Doctorate	11	3	6.42%	14
Professional Degree	13	2	6.88%	15
I have not earned a degree	9	24	15.14%	33
Total				218

Descriptive Statistics of Study Variable

Table 9 displays the descriptive statistics summaries of the scores of the dependent variable learning style index (DV) based upon question number 6, I learn best when, based upon the 4 choices. The score response for number 1, least like you were 67

(33.50%), third like you were 30 (15.00%), second most like you were 44 (22.00%), and for most like you were 59 (29.50%). The score response for number 2, least like you were 25 (12.50%), third like you were 79 (39.50%), second most like you were 67 (33.50%), and for most like you were 29 (14.50%). The score response for number 3, least like you were 55 (27.50%), third like you were 59 (29.50%), second most like you were 66 (33.00%), and for most like you were 20 (10.00%). The score response for number 4, least like you were 53 (26.50%), third like you were 32 (16.00%), second most like you were 23 (11.50%), and for most like you were 92 (46.00%). Table 9 showed that more than 92 of the sample sizes preferred to work hard as the most like them to question number 6 as to they learn best when they work hard.

Table 9

Question 6: I Learn Best When

#	Field	Least like you		Third like you		Second most you		Most like you	
1	I listen and Watch carefully	33.50%	67	15.00%	30	22.00%	44	29.50%	59
2	I rely on logical thinking	12.50%	25	39.50%	79	33.50%	67	14.50%	29
3	I trust my hunches and feelings	27.50%	55	29.50%	59	33.00%	66	10.00%	20
4	I work hard To get things done	26.50%	53	16.00%	32	11.50%	23	46.00%	92

Table 10 displays the descriptive statistics summaries of the scores of the dependent variable learning style index (DV) based upon question number 7, when I am

learning, based upon the 4 choices. The score response for number 1, I tend to reason things out, least like you were 63 (31.50%), third like you were 30 (15.00%), second most like you were 42 (21.00%), and for most like you were 65 (32.50%). The score response for number 2, I am responsible about things, least like you were 20 (10.00%), third like you were 81 (40.50%), second most like you were 62 (31.00%), and for most like you were 37 (18.50%). The score response for number 3, I am quiet and reserved, least like you were 38 (19.00%), third like you were 58 (29.00%), second most like you were 73 (36.50%), and for most like you were 31 (15.50%). The score response for number 4, I have strong feelings and reaction reactions, least like you were 79 (39.50%), third like you were 31 (15.50%), second most like you were 23 (11.50%), and for most like you were 67 (33.50%). Table 11 showed that more than 67 of the sample sizes had strong feelings and reactions when they were learning.

Table 10

Question 7: When I Am Learning

#	Field	Least like you		Third like you		Second most you		Most like you	
1	I tend to reason things out	31.50%	63	15.00%	30	21.00%	42	32.50%	65
2	I am responsible about things	10.00%	20	40.50%	81	31.00%	62	18.50%	37
3	I am quiet and reserved	19.00%	38	29.00%	58	36.50%	73	15.50%	31
4	I have strong feelings and reactions	39.50%	79	15.50%	31	11.50%	23	33.50%	67

Table 11 displays the descriptive statistics summaries of the scores of the dependent variable learning style index (DV) based upon question number 9, when I learn, based upon the 4 choices. The score response for number 1, I am open to new experiences, least like you were 75 (37.50%), third like you were 33 (16.50%), second most like you were 32 (16.00%), and for most like you were 60 (30.00%). The score response for number 2, I look at all sides of the issues, least like you were 26 (13.00%), third like you were 88 (44.00%), second most like you were 62 (31.00%), and for most like you were 24 (12.00%). The score response for number 3, I like to analyze things, break them down into their parts, least like you were 37 (18.50%), third like you were 51 (22.50%), second most like you were 66 (33.00%), and for most like you were 46 (23.00%). The score response for number 4, I like to try things out, least like you were 62 (31.00%), third like you were 28 (14.00%), second most like you were 40 (20.00%), and for most like you were 70 (35.00%). Table 12 showed that more than 70 (35.00%) of the sample size preferred when they learn they like to try things out, however, more than 88 (44.00%) would look at all sides of an issue.

Table 11

Question 9: When I Learn

#	Field	Least like you		Third like you		Second most you		Most like you	
1	I am open to new experiences	37.50%	75	16.50%	33	16.00%	32	20.00%	60
2	I look at all sides of issues	13.00%	26	44.00%	88	31.00%	62	12.00%	24
3	I like to analyze things,	18.50%	37	25.50%	51	33.00%	66	23.00%	46

	break them down into their parts							
4	I like to try things out	31.00%	62	14.00%	28	20.00%	2	46.00% 92

Table 12 displays the descriptive statistics summaries of the scores of the dependent variable learning style index (DV) by generational cohorts and by gender of the generational cohorts. The mean score for learning style index (DV) of the samples was 2.81 } 0.83. Mean comparison showed that female members (μ = 2.89 } 0.76) have greater learning style index (DV) than male members (μ = 2.70 } 0.93). Mean comparison showed that female members (μ = 2.91 } 0.84) have greater Learning Style Index (DV) than male members (μ = 2.71 } 0.93). The mean difference will be tested in the two-way ANOVA to determine if the difference is significant at a level of significance of 0.05.

Table 12

Descriptive Statistics for Scores of Learning Style Index

Group	Gender	N	Mean	Std. Deviation	Minimum	Maximum
Generation X	Male	87	2.70	0.93	0.00	4.00
	Female	123	2.89	0.76	0.25	4.00
Total		210	2.81	0.83	0.00	4.00
Millennials	Male	103	2.71	0.82	0.00	4.00
	Female	107	2.91	0.84	0.00	4.00
Total		210	2.81	0.83	0.00	4.00

Hypothesis Testing

Testing Statistical Model Assumptions

For purposes of statistical inference, the two-way ANOVA model has assumptions that must be met. Prior to conducting the statistical analysis, the data was tested for the seven assumptions of two-way ANOVA: (a) sample was randomly selected, (b) continuous dependent variable, (c) two categorical independent variables, (d) independence of observations, (e) extreme outliers, (f) normality, and (g) homogeneity of variances (Field, 2013; Lund Research LTD., 2016). Results of testing the assumptions are presented below.

Sample Was Randomly Selected

The assumptions that the sample was randomly selected was tested by verifying that Qualtrics selected the sample using random methodology. The assumption was satisfied because Qualtrics verified that they used random sampling to select the sample participants.

One Dependent Variable Measured on a Continuous Scale

The assumptions that the dependent variable is measured on a continuous measurement scale, either interval or ratio, was tested by examining the properties of the dependent variable. The dependent variable in this study, learning style index (DV), was calculated as the arithmetic mean of a subset of responses from the Learning Style Inventory 3.1 (Kolb, 2007). Arithmetic means are, by definition, real numbers measured on a continuous scale. Thus, the assumption of 1 dependent variable measured on a continuous scale was satisfied.

Two Independent Variables with Two Categorical Independent Groups

The assumption that 2 independent variables where each independent variable has 2 categorical independent groups was measured by examining the independent variables in this study. The 2 independent variables in this study, generation cohorts (IV) and gender (IV), are categorical variables that included 2 categorical groups for each variable: (1) millennials and generation Xers, and (2) male and female. Thus, the assumption of two independent variables each with two categorical independent groups was satisfied.

Independence of Observations

The assumption of independence of observations in two-way ANOVA, as discussed in Chapter 3, states that the assumption is primarily 1 of the study's design rather than a statistical test. Although the structure of the survey did not allow participants to identify with both independent variable groups, and with each group within each independent variable, the assumptions of independence of observations was tested by examining the categorization of participants' responses. No cases were identified where the participant reported being both a millennial and generation Xers, and no cases were identified where the participant reported being both male and female. Thus, the assumption of independence of observations was satisfied for this study.

Table 13

Learning Styles for Generational Cohorts and Gender

Gender	Learning Style			
	Concrete Experience	Reflective Observation	Active Experimentation	Abstract Conceptualization
Generation X				

Male	17	17	44	24	102
Female	21	16	47	24	108
Total	38	33	91	48	210
Millennials					
Male	19	20	46	20	105
Female	29	15	40	21	105
Total	48	35	86	41	210

Outliers

Outliers, as discussed in Chapter 3, are data points that lie far away from their predicted value. SPSS generates a casewise diagnostics table that identifies all cases where the response standardized residuals is greater than 3 standard deviations from the mean (Field, 2013; Lund Research LTD., 2016). The assumption of outliers was tested by examining boxplots of the dependent variable values within each cell of the design. Outliers are those data points that lie 1.5 box-lengths from the edge of the box, and extreme outliers are data points that lie 3 box-lengths from the edge of the box, which are marked with an asterisk (*) and the case number(s), or as presented in Chapter 3, } 3 σ away from the mean (Field, 2013; Lund Research LTD., 2016).

The box plots in Figures 6 and 7 identified a few extreme outliers (data points ±3 σ greater than from the mean) for each independent variable. Although a total of 9 cases were identified as extreme outliers within the 4 cells of this study's design, the cases were kept since the primary purpose of the study was to examine the learning style preference.

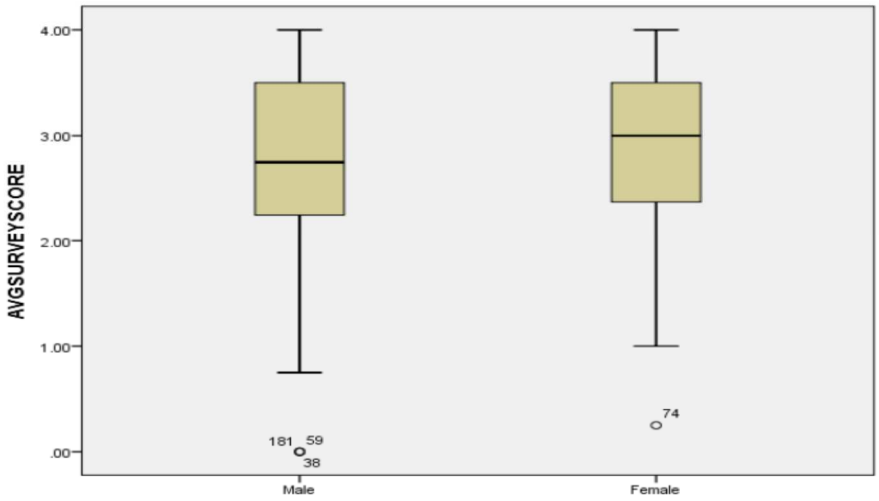

Figure 6. Box plot of Team Generation X based on gender.

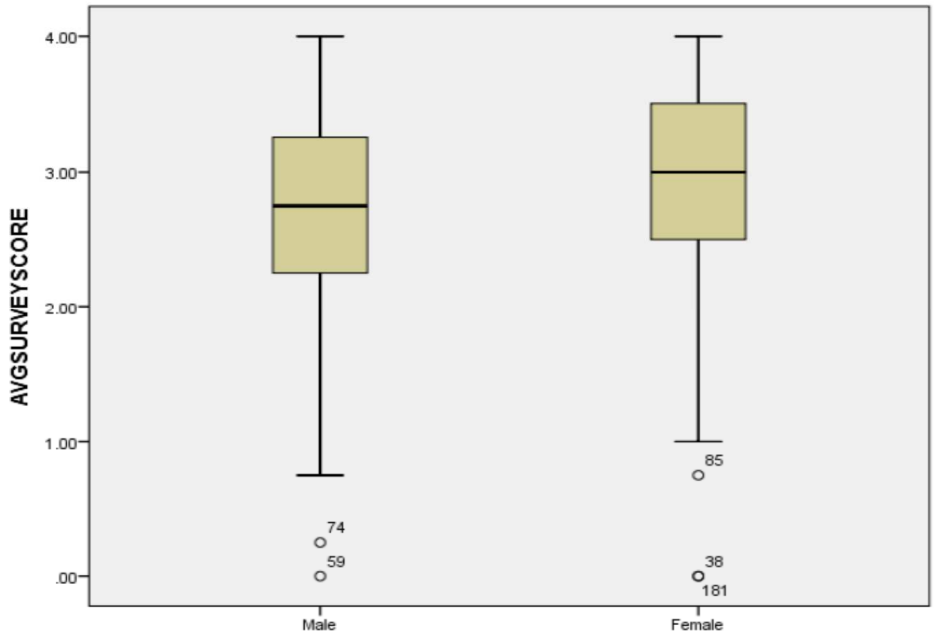

Figure 7. Box plot of Team Millennial based on gender.

Normality

Another required assumption of two-way ANOVA is normality of the residuals for the dependent variable. The assumption of normality was tested by examining the (a) skewness and kurtosis statistics (b) the histograms for each cell of the factorial design and (c) the Kolmogorov-Smirnov test. Table 14 summarizes the skewness and kurtosis statistics for the residuals for the dependent variable Learning Style Index. As discussed in Chapter 3, for normal distributions, skewness statistics should ideally be close to zero and not be greater than ±1.0. In table 3, the skewness statistics for student's males (-1.035) and students females (-1.204) exceeded the ±1.0 recommended value. This indicates that the probability distributions of the residuals are negative skewed for the 2 factors student's males and student's females.

As discussed in Chapter 3, for normal distributions, kurtosis statistics should ideally be approximately 3.0. All kurtosis statistics presented in Table 6 (0.988, 0.386, 0.804, and 1.660) were considerably less than 3.0. This indicated that the probability distributions for the dependent variable, learning style index, for the 4 study factors are platykurtic; that is, the probability distributions for the residuals of the dependent variable are flatter or less peaked than they would be had the residuals been normally distributed.

The histograms presented in Figures 8 thru 11 showed that data for the dependent variable, Learning Style Index, residuals are not approximately normally distributed as they do not follow a bell-shaped curve. The data presented in the 4 histograms indicates that the data points in all 4r histograms are negatively skewed and platykurtic, thus violating the assumption of normality of the residuals for the dependent variable, learning style index.

According to Lund Statistics (Lund Research LTD., 2016), a violation of the normality assumptions can still provide valid results in a two-way ANOVA model. Based on the results of both tests of normality, the assumption that data was normally distributed was not satisfied for this study. However, these results have been ignored given the robustness of the two-way ANOVA model (Lund Research LTD., 2016).

Table 14

Skewness and Kurtosis Values

	Skewness			Kurtosis		
	Statistic	Error	Std. z-Score	Statistic	Error	St. z-Score
Generation X						
Gender						
Male	-1.035	0.258	-4.012	0.988	0.511	1.933
Female	-0.655	0.218	-3.005	0.386	0.433	0.891
Millennials						
Gender						
Male	-0.701	0.238	-2.945	0.804	0.472	1.703
Female	-1.204	0.234	-5.145	1.66	0.463	3.585

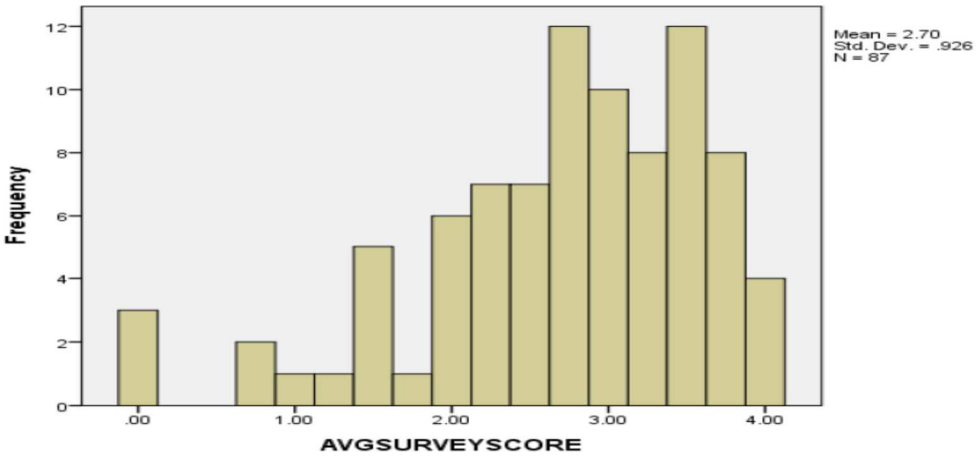

Figure 8. Histogram of Millennial team member gender male.

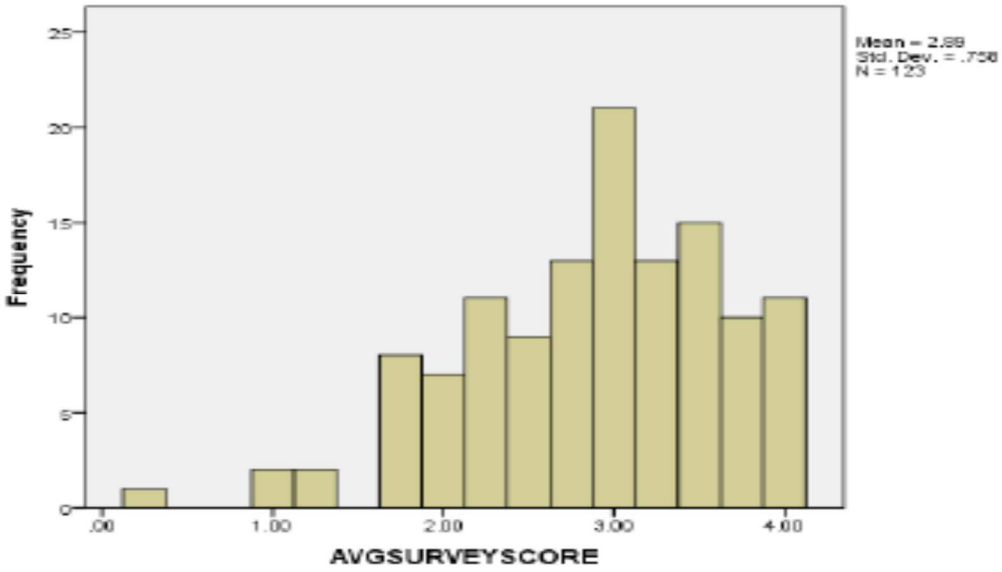

Figure 9. Histogram of Millennial team member gender female.

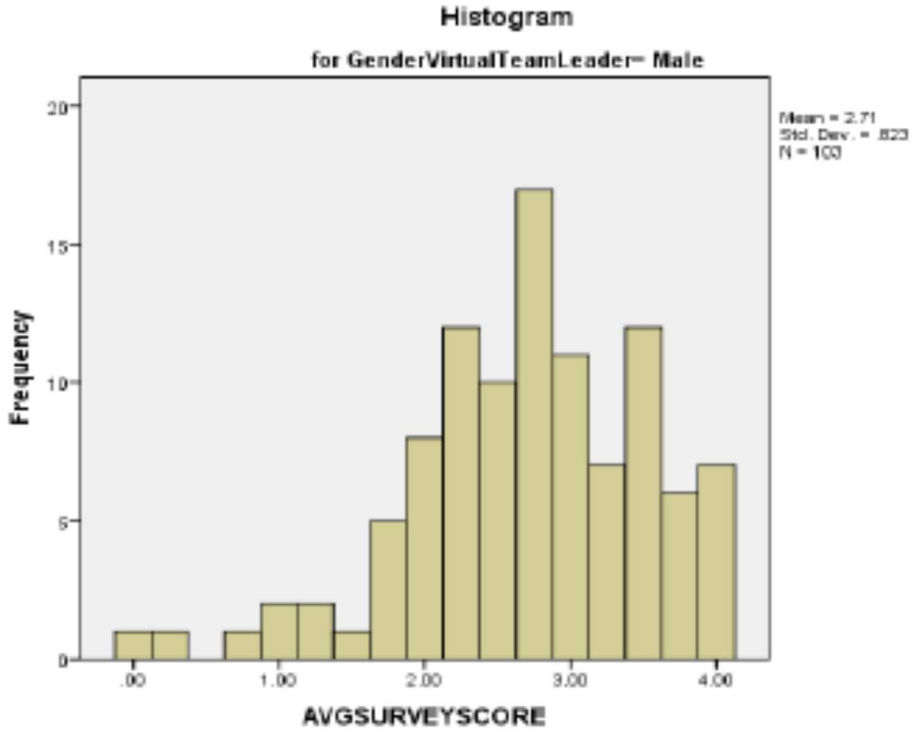

Figure 10. Histogram of Generation X team member gender male.

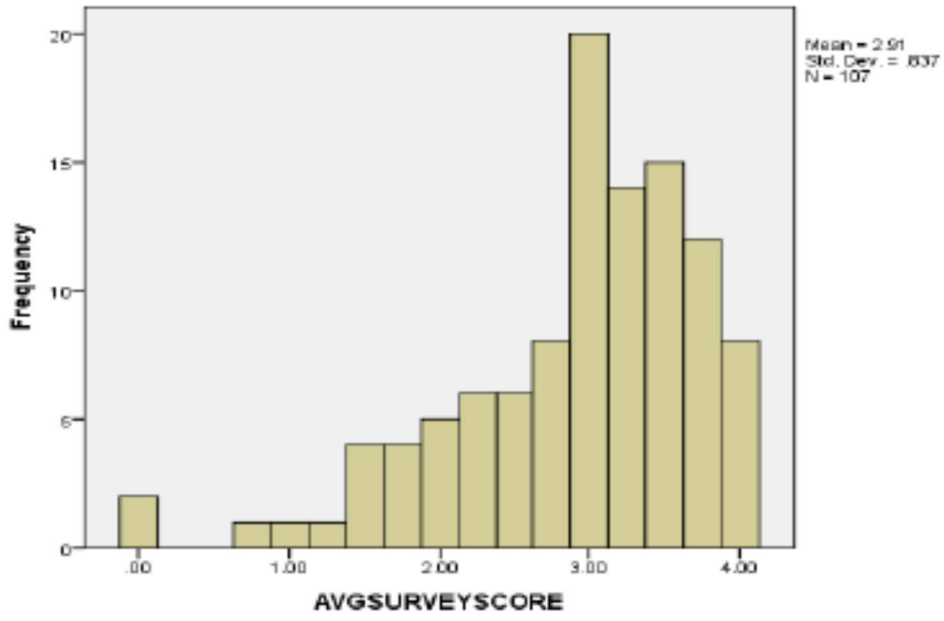

Figure 11. Histogram of Generation X team member gender female.

Homogeneity

Homogeneity of variances is another assumption of the two-way ANOVA, which assumes that the variances of the residuals for the dependent variable are equal in all combinations of groups of the independent variables (Field, 2013; Lund Research LTD., 2016). In this research study, homogeneity of variances was investigated using Levene's test. The results of the Levene's test are presented in Table 15. The null hypothesis for the assumption of homogeneity of variances was satisfied because [($p = .12$) > ($\alpha = .05$)].

Table 15

Levene's Test of Error Variances

F	df1	df2	Sig
1.97	3	206	0.12

Testing Hypotheses for the Research Questions

Table 16 presents the number of respondents for the between-subjects' factors, table 17 presents the arithmetic means for the between-subjects' factors, and table 18 presents the standard deviations for the between-subjects' factors.

Table 16

Number of Respondents for Between-Subjects Factors

Team Members	Male	Female	Totals
Male	46	41	87
Female	57	66	123
Totals	103	107	210

Table 17

Means for Between-Subjects Factors

Members	Male	Female
Male	2.21460	2.31290
Female	2.30770	2.47820

Table 18

Standard Deviations for Between-Subjects Factors

Members	Male	Female
Male	0.59708	0.64827
Female	0.55525	0.48715

Table 19 presents the results of the two-way ANOVA that were used to answer the research questions.

RQ1: What is the degree of interaction between the Learning Style Index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV)? The results of the two-way ANOVA found no statistically significant main effect of generational cohorts (IV) on preferences of learning style index (DV) because [($p = 0.147$) > ($\alpha = .05$)]. Thus, the null hypothesis showed no difference in the means of generational cohort's preferences of learning style index (DV) based on generational cohorts (IV) was supported. This is confirmed by the value of the partial $\eta 2 = 0.010$, which is extremely small as reported by Ronald Fisher (Study.Com, 2018).

RQ2: To what extent is there interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on gender (IV)? The results of the

two-way ANOVA found no statistically significant main effect of gender (IV) on learning style preferences of learning style index (DV) because [($p = 0.116$) > ($\alpha = .05$)]. Thus, the null hypothesis showed no difference in the means of learning styles index (DV) based on gender (IV) was supported. This was confirmed by the value of the partial $\eta 2 = 0.012$, which is extremely small.

RQ3: To what extent is there interaction in the learning style index (DV), as measured by the Learning Style Inventory 3.1, based on generational cohort (IV) and gender (IV)? Two-way ANOVA was used to determine whether means of the learning style index (DV) were significantly different based on the difference of gender (IV) of the generation Xers team member and gender (IV) of the millennial team members and whether any interaction between the factors.

A level of significance of $\alpha = 0.05$ was used in the two-way ANOVA. A statistically significant difference if the p-value is less than or equal to the level of the significance value. The two-way ANOVA was conducted to determine if a statistically significant interaction effect existed between gender of the generation Xers (IV) and gender of the millennials (IV) and whether either of the 2 independent variables had statistically significant main effects on the dependent variable.

Table 19

Two-Way ANOVA: Tests of Between-Subjects Effects

Dependent variable: Learning Style Index

Source	Type II Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3.86	3	1.289	1.869	0.136	0.026
Intercept	1582.7	1	1582.7	2301.179	0	0.918
Gender -GX	1.461	1	1.461	2.124	0.147	0.01
Gender-M	1.71	1	1.71	2.487	0.116	0.012
Gender-GX *M	0.195	1	0.195	0.284	0.595	0.001
Error	141.682	206	0.688			
Total	1804.563	210				
Corrected Total	145.538	209				

a. R Squared = .026 (Adjusted R Squared = .012)

The results of the two-way ANOVA shown in table 19 found that the interaction effect between the gender of generation Xers (IV) and the gender of the millennials (IV) the leaning style index (DV) was not statistically significant because [($p = 0.595$) > ($\alpha = .05$)]. Thus, the null hypothesis of no interaction effect existed was supported. This is confirmed by the value of the partial $\eta 2 = 0.001$, which is extremely small. Thus, the effect of an independent variable is the same for each level of the other independent variable. Therefore, the main effects for each independent variable are unaffected by the main effects for the other independent variable (Lund Research LTD., 2016). Thus, an analysis of the main effects of each independent variable was performed.

Summary

The purpose of this quantitative research study was to identify the learning style preferences among generational cohorts and gender. A two-way ANOVA was used to

analyze the collected data. The results of the two-way ANOVA showed not a statistically significant interaction between Generational Cohorts (IV) and Gender (IV). The analysis of main effects also identified that the main effects of both independent variables were not statistically significant.

Tileston, (2010) an analysis of the main effects of each independent variable was performed. The results of the two-way ANOVA found no statistically significant main effect of generational cohorts (IV) on preferences of learning style index (DV) because [($p = 0.147$) > ($\alpha = .05$)]. Thus, the null hypothesis that no difference in the means of generational cohorts' preferences of learning style index (DV) based on gender (IV) was supported. This was confirmed by the value of the partial $\eta 2 = 0.010$, which is extremely small. The results of the two-way ANOVA found no statistically significant main effect of gender (IV) on learning style preferences of learning style index (DV) because [($p = 0.116$) > ($\alpha = .05$)]. Thus, the null hypothesis that no difference in the means of learning styles index (DV) based upon gender (IV) was supported. This was confirmed by the value of the partial $\eta 2 = 0.012$, which is extremely small.

The findings of this study have implications for theory and practice. Chapter 5 will provide a summary, a discussion of and conclusions based on the results of this study. In addition, the study's limitations, and implications for theory and practice are presented. Finally, recommendations for future research are identified.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative nonexperimental comparative cross-sectional survey study was to determine (a) the interaction of the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on generational cohort (independent variable); (b) the interactions in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, based on gender (independent variable); and (c) the interactions in the learning style score (dependent variable), as measured by the Learning Style Inventory 3.1, between generational cohort (independent variable) and gender (independent variable). Another purpose of this study was to examine Kolb's learning theory by utilizing Kolb's Learning Style Inventory Tool 3.1. The results of this study may contribute knowledge to inform the practice of management education and workforce curriculum design, development, and implementation.

Chapter 5 provides a summary and discussion of the results, the conclusions that were based on the results, and the limitations of the study. I also present recommendations for further research. Recommendations for scholars and practitioners are made regarding areas of future study and professional implications of the findings.

Interpretation of the Findings

This study of learning styles included the constructs of learning style theory to compare learning style differences among generational cohorts. D. A. Kolb's (2017) Learning Style Inventory 3.1 was used to measure learning styles of millennial and generation X college business students in the United States. My primary objective was to assess whether learning style interactions existed among generational cohorts. Variables

including millennial, generation X, and gender were examined to assess variances within generational groups due to these factors.

A quantitative comparative survey design was employed to gather learning style data from 210 millennial and generation X college business students in the United States. The inclusion criteria were provided to Qualtrics, who identified members of the random sample population as potential participants, recruited participants, and facilitated the data collection via electronic surveying in the Qualtrics platform. A preferred style of learning was calculated for each surveyed participant.

Two-way ANOVA was used to answer the research questions that addressed the differences in the learning style index (DV) as measured by the Learning Style Inventory Tool 3.1 based on generational cohorts and gender. In addition, I sought to identify whether an interaction existed between the two independent variables: generational cohorts and gender.

Three research questions guided the development of this research study. The research questions asked in this study were the following: (a) What is the degree of interaction between the learning style index as measured by the Learning Style Inventory 3.1 based on generational cohorts? (b) To what extent is there interaction in the learning style index as measured by the Learning Style Inventory 3.1 based on gender and (c) To what extent is there interaction in the learning style index as measured by the Learning Style Inventory 3.1, based on generational cohort and gender?

The demographics analysis indicated that a large majority of participants identified as millennials (79.5%) and indicated gender as female (77.6%). In addition,

participants' ages were between 18 and 58, with 30.13% (67) of participants having completed a bachelor's degree. The data were examined prior to analysis to determine whether all seven assumptions of two-way ANOVA were satisfied. Although tests result for the assumptions varied slightly, the assumptions of the two-way ANOVA were determined to be mostly satisfied.

Research Question 1

The results of the two-way ANOVA indicated that there was no statistically significant main effect of generational cohorts (IV) on learning style preference on the learning style index (DV), ($p = 0.116$) > ($\alpha = .05$). Thus, the null hypothesis of no difference in the means of general cohorts on the learning style index (DV) based upon generational cohorts (IV) was supported. This was confirmed by the value of the partial $\eta 2 = 0.012$, which was small.

Research Question 2

The two-way ANOVA results indicated that there was no statistically significant main effect of gender (IV) on learning style preferences on the learning style index (DV), ($p = 0.147$) > ($\alpha = .05$). Thus, the null hypothesis of no difference in the means of learning style index (DV) based on gender (IV) was supported. This was confirmed by the value of the partial $\eta 2 = 0.010$, which was small.

Research Question 3

The results of the statistical analysis indicated no significant interactions in learning styles. Specifically, no statistically significant interaction effect was identified between generational cohorts (IV) and gender (IV), ($p = 0.595$) > ($\alpha = .05$). Thus, the null

hypothesis that no interaction effect existed was supported. This was confirmed by the value of the partial $\eta 2 = 0.001$, which was small.

Experiential learning theory was developed by D. A. Kolb (1984, 2017) who drew on the notable works of scholars including Dewey, Jung, and Piaget (as cited in Cherry, 2020). Dewey (1938) suggested that an individual's learning can be fostered by experience. A. D. Kolb (2017) expanded on learning through experience by recognizing environments of tensions between experience and analysis as beneficial in the learning process. In the experiential learning theory, learning is acknowledged as a holistic, highly adaptive knowledge-creation process of relearning driven by conflict and resulting from interaction between person and environment (D. A. Kolb, 2017).

The Experiential learning theory is described as a holistic approach that embraces aspect of experience, perception, cognition, and behavior when learning (Kolb, 1984). This makes it relevant to examining the effects of generational cohorts and gender. The experiential learning theory model includes two classifications: grasping experience and transforming experience. Grasping experience is depicted through two dialectically related modes, concrete experience, or "feeling", and abstract conceptualization, or "thinking," here as transforming experience is depicted through two dialectically related modes, reflective observation, or find the word "watching," and active experimentation, or "doing" (p. 68). Researchers utilized experiential learning theory as a theoretical base for examining learning across many contexts. Experiential learning methodologies has been noted as highly beneficial in enhancing learning in post-secondary education (Arnold, 2011; Bethell, 2011; Jacobs,2011; Karpova, 2011; Lee, 2011; & Morgan, 2011).

Bethell and Morgan (2011) qualitatively examined how students respond to experiential learning methodologies; enhanced knowledge and learner engagements is noted as advantages of experiential methods. Karpova et al. (2011) investigated the evidential learning experiences and outcomes of 172 undergraduate global apparel students; virtual team-based collaborative projects were assigned to mimic real-world working conditions. Karpova concluded that experiential activities were successful in student acquisition of knowledge and skills, and prepared students for success in global apparel organizations (Karpova et al., 2011).

Based on Results

The two-way ANOVA test determined if learning style frequencies differed between the two generations of college business students in the United States. The results indicated there was no significant interactions in learning style frequency based on generation. Therefore, the study's alternate hypothesis is rejected, and the null hypothesis is supported: There are no significant interactions in learning style among millennial and generation Xers college business students in the United States. Unitizing Kolb's Learning Style Instrument 3.1 additional tests were attempted on the learning style data of each generational group. The purpose of these additional tests was to assess learning style trends within each generational group based on the variable of gender.

The results on generation Xers data revealed no differences in learning style based on gender. The results on millennial data revealed no differences in learning style based on gender. In conclusion, learning style differences could not be found between

generational groups nor could differences in learning style within each generational group be attributed to the variables of gender and generational cohort.

Although, the results showed no statistical interaction effect between the two independent variables generational cohorts and gender and the dependent variable learning style index this research can still add value to the learning process by valuing everyone by the unique qualities they possess. Experiential learning can be good for helping people explore their own strengths when learning new things. The theory addresses how learners can play to their own strengths as well as developing areas in which they are weakest.

Limitations of the Study

The limitations of this research study involved components of the study's design, which included the sampling frame, recruitment method, and the instrument used to measure learning style preferences. The sampling frame of this research study recruited participants from Qualtrics, Inc, an online professional survey company. Participants of the Qualtrics audience may have biased outlooks in response to the questions asked. The use of a professional online survey audience is a limitation of this study.

The use of the quantitative research method may also be a limitation of this research study. Quantitative analysis has a research goal of accepting or rejecting a null hypothesis to produce generalizable results. A qualitative design may have allowed participants to provide more detailed responses, which might have given more insight into the reasons for the answers that the participants provided.

The use of the Learning Style Inventory Tool 3.1 may have also provided a limitation in this research study. The questions extrapolated from this validated instrument asked participants to rate the learning style preference. The questions in the Learning Style Tool 3.10 are related to self-view, thus participants may not possess adequate knowledge to accurately respond to the questions, which is a limitation of this study.

The sample size in relation to the general population of college students currently enrolled in business courses in the United States is also a limitation. This study's sample size was 210 participants. The sample size was small compared to the likely size of the general population of college business students. This limitation may compromise the generalizability of the results to the overall population.

Next, the ability to generalize findings to the entire United States college business student's population would be improved with a larger sample size. Larger samples are always better (Vogt, 2015). As college enrollment is expected to set new records according to the National Center for Education Statistics (2018) from fall 2020 through fall 2026, the last year for which the National Center for Education Statistics enrollment projections have been developed. Between fall 2015 and fall 2026, enrollment is expected to increase 13 percent. Despite decreases in the size of the traditional college-age population (18 to 24 years old) during the late 1980s and early 1990s, total enrollment increased during this period.

There are over 700 possible instruments to measure individual learning style (Coffield et al., 2004). Use of multiple instruments would enable a pragmatic

examination of learning style differences by utilizing theoretical frameworks beyond experiential learning theory to measure learning. This study's use of an online panel provider presents potential issues in validity of data. The quality of data originating from panelists that participate in several studies within a short period may be compromised (Grewal et al., 2006).

Recommendations

The recommendations for further research were identified by the results, the limitations, and data analysis of the study. The inclusion criteria and methodology also provided commendations for further research. While this study's findings revealed no significant interactions in learning styles among generational groups, a qualitative examination of learning experiences among generational groups is recommended.

Use of case studies, focus groups or a phenomenological design would enable a deeper examination of learning themes among groups. For example, a qualitative study of how generational groups experience learning or prefer to learn on-the-job would build further knowledge on the preferences of generational groups. Another appropriate study would be a qualitative examination of generational learning style perceptions of management education faculty or workplace learning practitioners; findings would further inform potential themes and trends associated with how generational groups are perceived as effectively learning in various environments.

*Recommendations Based on Data Analysis**:*** The results of two-way ANOVA used to analyze the data in this study indicated that neither generational cohorts (IV) or gender (IV) had a main effect on the learning style preference of the Learning Style Index (DV).

One recommendation for further research is to examine the current topic separating male and female populations by identifying race along with the inclusion of colleges outside the United States.

Another recommendation for further research addresses the sampling frame provided by the Qualtrics participant audience, who currently has or has had a position in a virtual team in the United States. Examining the same constructs to include participants from virtual teams worldwide and using an alternate method of data collection, such as a Qualtrics competitor professional survey company. This study's use of an online panel provider was advantageous in expeditiously gathering data from a geographically disbursed college students in the United States. However, the use of an online panel provider does raise concern in the potential quality of data (Grewal et al., 2006). This concern presents a key limitation to the validity of data collected for this study. Quality of data risks could be mitigated in future studies by surveying individuals that are not online panel participants.

While Kolb's (2017) Learning Style Instrument has been successfully utilized in several studies on learning styles (Chiou, 2010; Harris et al., 2003; Lu, 2010; & Wang et al., 2006), other learning style instruments can and should be utilized to investigate learning style differences. There are numerous theoretical foundations and accompanying learning style instruments to measure learning style; the research of Coffield et al. (2004) found over 700 existing learning style instruments. Other instruments, including but not limited to Vermunt's Inventory of Learning Styles (ILS), Myers-Briggs Type Indicator (MBTI) and Dunn and Dunn's learning style instrument, would apply other theoretical

foundations to the investigation of learning style. Clearly, more than one way to measure and examine learning is available; future studies should utilize multiple instrumentation to examine the phenomenon of learning style. An investigation of differences among generational groups would be particularly interesting if differences were compared utilizing multiple learning style inventories.

The ability to generalize findings to the entire U.S. educational population would be enhanced through a larger sample size. Future studies should seek to examine differences among at least 385 individuals. Researchers could also utilize other methods such as stratified sampling. to ensure each generational group is adequately represented. This researcher did not select the stratified method due to time and resources. This study limited examination of learning styles to U.S. college business students only; future studies would benefit from examining college students across multiple fields. Studies of this nature would inform on differences in learning style due to professional industry. As mentioned previously, a quantitative research method is restricted in the detail of explanation that can be provided by the participant. Thus, conducting a similar study using a qualitative research method may provide more details regarding the possible differences between generational cohorts and gender learning style preference.

While this study's findings revealed no significant differences in learning styles among generational groups, a qualitative examination of learning experiences among generational groups is recommended. Use of case studies, focus groups or a phenomenological design would enable a deeper examination of learning themes among groups. For example, a qualitative study of how generational groups experience learning

or prefer to learn on-the-job would build further knowledge on the preferences of generational groups. Another appropriate study would be a qualitative examination of generational learning style perceptions of management education faculty or workplace learning practitioners; findings would further inform potential themes and trends associated with how generational groups are perceived as effectively learning in various environments.

Finally, this study's findings reveal that while generational differences in learning style are perceived by many (Fearon, 2007; Matulich et al., 2008; Meisel, 2007; Morgan, 2008; Pardue, 2008; Prensky, 2001; & Roberts, 2005), generational groups may be more alike than different. This raises an important implication. What are these perceptions, and how did these perceptions come to be? Results would be interesting to further investigate perceptions of generational learning style among management educators and workplace learning practitioners. Comparative studies of the perceptions of differences versus actual differences would further inform of this phenomenon.

Implications

Implications for Practitioners

An understanding that learning styles are widely distributed throughout each generational group presents implications in the design, development, and delivery of management education curriculum. Additionally, the range of styles and overall experiences possessed by a multi-generational learning population provides opportunities for educators to leverage this diversity using experimental learning methods.

A noteworthy implication of this study's findings is that learning style differences among generational groups are not as significant as what is generally believed. Theories that unique styles of learning exist among generational groups cannot be empirically confirmed through this study. Rather, what can be learned is that the distribution of learning styles among generational groups is more similar than different, and an array of styles can be found within each generational group. Management education faculty, administrators, and workplace learning practitioners are cautioned on stereotyping or labeling one's learning style based on generational group, as no one dominant learning style will apply. Instead, there should be a focus on integrating learning strategies that appeal to a wide array of individual preferences.

The implications for this research study relate to both theory and practice. The theoretical implications concern the continuing study of experimental learning theory and perceptions of generation cohorts learning preferences. The lack of statistical significance for each hypothesis in this study demonstrated an unexpected result. The outcome was contrary to much of the research on the topic of experimental learning theory, but also aligned with some of the more recently published literature, which challenges the Kolb's (2002) findings. This current research is more supportive of Bethell and Morgan (2011), which found that the Experimental learning Tool 3.1 may not play as significant a role in determining the learning preferences of generational cohorts by followers in specific age groups or by gender.

The practical implications for this study concern learning styles with generation cohorts and gender. Much of the current literature has indicated that attitudes toward

generational cohorts learning style preferences present a bias in favor of one over the other. The current research: however, indicates that learning styles between generational cohorts and including gender showed no statistically differences. Indeed, further research should be done, but the current study implies that generational cohorts learning style shows little difference.

Implications for Scholars

Learning styles in today's management education classrooms and workplace learning environments will consist of a healthy mix of convergers, divergers, assimilators and accommodators. While these differences may be perceived as a challenge to educators, learning style diversity presents a tremendous advantage in the learning process. The unique, individual viewpoints and preferences of learners can be leveraged into a variety of possible solutions when problem-solving or brainstorming (Barmeyer, 2004). In essence, the diversity of styles among learners in post-secondary environments mimics the diversity found within the workplace; both educators and students can learn from an understanding of differences in how individuals gather, process, and learn. While Kolb's (1984) Learning Style Inventory Tool has been successfully utilized in a number of studies on learning styles (Lu & Chiou, 2010; Harris, 2003; & Wang et al., 2006), other learning style instruments can and should be utilized to investigate learning style differences.

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Other instruments, including but not limited to Vermunt's Inventory of Learning Styles (ILS), Myers-Briggs Type Indicator (MBTI) and Dunn and Dunn's learning style instrument, would apply other theoretical foundations to the investigation of learning style. Clearly, one has more than one way to measure and examine learning; future studies should utilize multiple instrumentation to examine the phenomenon of learning style. An investigation of differences among generational groups would be particularly interesting if differences were compared utilizing multiple learning style inventories.

Implications for the Field of Management

When designing and developing curriculum for classroom and virtual learning environments, a variety of learning styles should be accommodated to improve the outcomes for all learners (Coffield et al., 2004; Smith, 2002). No assumptions should be made that anyone learning group possesses a learning style; rather, educators should be aware that the learning needs and preferences will vary from individual-to-individual and apply balanced methods for accommodating these variances. The importance of this study to the field of organizational management is that this research contributes to the body of knowledge of learning styles by exploring the effect of generational cohorts and gender on learning style preference.

A final implication to the field of management education is a need for learning style self-awareness among students, management education faculty, and organizational learning practitioners. Advantages can be gained to both learners and educators because of a heightened awareness of one's own style of learning and the style of others. Effective learners exhibit an ability to select and align learning activities with a personal learning

style (Sadler-Smith, 2001). Similarly, an understanding of learning style assists in identifying weaknesses and planning steps to improve proficiencies (Barmeyer, 2004). It is recommended that management educators employ methods, such as the use of learning style inventories, to inform students of their personal preferences when learning.

Learning style instruments are particularly helpful tools for building self-awareness and overall professional development (Garner, 2000; Reynolds, 1997). Thus, learning style instruments can and should be employed as a way of building one's own understanding of personal learning preferences. Educators can also benefit from an improve understanding of self and reflect on learning preference assumptions made during the curriculum design and development process. In sum, learning style instruments can assist students, educators, and workers in learning how to effectively learn.

Educational Implications

Both Kolb's (2017) learning stages and cycle could be used by teachers to evaluate the learning provision typically available to students, and to develop more appropriate learning opportunities. Educators should ensure that activities are designed and carried out in ways that offer each learner the chance to engage in the manner that suits them best. Also, individuals can be helped to learn more effectively by the identification of their lesser preferred learning styles and the strengthening of these through the application of the experiential learning cycle. Activities and material should be developed in ways that draw on abilities from each stage of the experiential learning cycle and take the students through the whole process in sequence (McLeod, 2017).

Conclusion

Despite no statistically significant interactions found, in Chapter 5 several key implications for management educators and workplace learning practitioners were suggested. Practitioners were cautioned in stereotyping or labeling generational groups on learning style. Rather, practitioners should be mindful of individual differences in learning styles and design balanced curriculum that will meet the diverse needs associated with an array of learning styles. Practitioners were encouraged to integrate experiential learning methods to not only engage learners, but also foster inter-generational relationship building within educational and workplace environments.

Finally, the need for learner and educator learning style self-awareness was noted. Noted in chapter 5 were limitations associated with the methodology, instrumentation, sample, and use of online panels. Only through the additional empirical research of generations would learning interactions be understood. Future research of generational learning style interactions should adopt numerous methodologies and examine participants across industries and contexts. Additional research will inform practitioners of the perceptions of generational learning differences versus actual differences.

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Appendix A: IRB Approval

IRB Materials Approved - Cassaundra Gilchrist

IRB <irb@mail.waldenu.edu>
Wed 9/9/2020 3:06 PM

To: Cassaundra Gilchrist <cassaundra.gilchrist@waldenu.edu>
Cc: Holly A. Rick <holly.rick@mail.waldenu.edu>

Dear Ms. Gilchrist,

This email is to notify you that the Institutional Review Board (IRB) confirms that your study entitled, "Learning Style Preferences Among Generational Cohorts and Gender: Leadership Implications," meets Walden University's ethical standards. Our records indicate that the site's IRB agreed to serve as the IRB of record for this data collection. Since this study will serve as a Walden doctoral capstone, the Walden IRB will oversee your capstone data analysis and results reporting. The IRB approval number for this study is 09-09-20-1020925, which expires when your student status ends.

This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted to IRB@mail.waldenu.edu as of this date. This includes maintaining your current status with the university and the oversight relationship is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, this is suspended.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB materials, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the Documents & FAQs section of the Walden web site: http://academicguides.waldenu.edu/researchcenter/orec

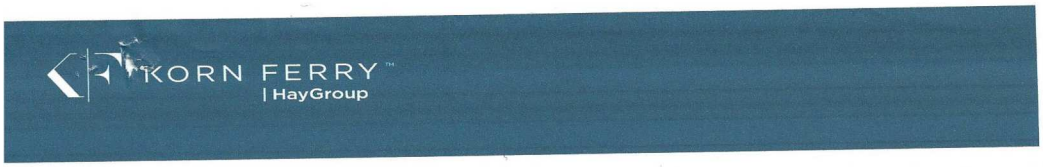
Doctoral researchers are required to fulfill all of the Student Handbook's Doctoral Student Responsibilities Regarding Research Data regarding raw data retention and dataset confidentiality, as well as logging of all recruitment, data collection, and data management steps. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Sincerely,
Libby Munson
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Walden University
100 Washington Avenue South, Suite 900
Minneapolis, MN 55401
Email: irb@mail.waldenu.edu

Appendix B: Conditional Use Agreement



Conditional Use Agreement

For good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, I hereby agree that the permission granted to me by Korn Ferry Hay Group to receive and utilize the Learning Style Inventory ("LSI") is subject to the following conditions, all of which I hereby accept and acknowledge:

1. I will utilize the LSI for research purposes only and not for commercial gain.
2. I will use the paper-based version of the LSI 3.1 free of charge to conduct my research.
3. The LSI, and all derivatives thereof, is and shall remain the exclusive property of Korn Ferry Hay Group; Korn Ferry Hay Group shall own all right, title and interest, including, without limitation, the copyright, in and to the LSI.
4. I will not modify or create works derivative of the LSI or permit others to do so. Furthermore, I understand that I am not permitted to reproduce the LSI for inclusion in my thesis/research publication.
5. I will provide Korn Ferry Hay Group with a copy of any research findings arising out of my use of the LSI and will cite Korn Ferry Hay Group in any of my publications relating thereto.
6. To translate the LSI, I need specific permission from Korn Ferry Hay Group. If permission is granted, I will use the translation for my research only, and I am not permitted to include this translation in my thesis/research publication.
7. Korn Ferry Hay Group will have no obligation to provide me with any scoring services for my use of the LSI other than the Algorithm used to score results.
8. Korn Ferry Hay Group will not be deemed to have made any representation or warranty, express or implied, in connection with the LSI, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.
9. My rights under this Agreement are non-transferable and non-exclusive and will be limited to a period of two (2) years from the date of this Agreement.

10 Korn Ferry Hay Group may immediately terminate this Agreement by giving written notice to me in the event I breach any of this Agreement's terms or conditions.

11 This Agreement will be construed in accordance with the laws of Pennsylvania without recourse to its conflict of laws principles.

12 This Agreement may not be assigned by me without the prior written consent of Korn Ferry Hay Group.

13 Failure by Korn Ferry Hay Group to enforce any provisions of this Agreement will not be deemed a waiver of such provision, or any subsequent violation of the Agreement by me.

14 This is the entire agreement with Korn Ferry Hay Group pertaining to my receipt and use of the LSI, and only a written amendment signed by an authorized representative of Korn Ferry Hay Group can modify this Agreement.

Signature

Print name

Date

Appendix C: Kolb LSI 3.1 Approval

CAPELLA UNIVERSITY

Cassaundra Gilchrist <cgilchrist2@capellauniversity.edu>

Your Kolb LSI 3.1 Has Been Approved!

3 messages

Alicia Orehowsky <Alicia.Orehowsky@kornferry.com> Wed, May 3, 2017 at 10:51 AM
To: "cgilchrist2@capellauniversity.edu" <cgilchrist2@capellauniversity.edu>

Dear Cassaundra,

Congratulations! Your LSI research has been approved! Attached you will find the following documents:

- MCB200C - This is a copy of the LSI 3.1 test. You may print of copy this as needed for your research.
- MCB200D - The profile sheet contains the answer key for the test as well as the profiling graphs for plotting scores. This document may be produced as necessary for your research. The AC-CE score on the Learning Style Type Grid is obtained by subtracting the CE score from the AC score. Similarly, the AE-RO score is AE minus RO.

These files are for your data collection only. This permission does not extend to include a copy of the files in your research paper. It should be sufficient to source it.

We wish you luck with your research and look forward to hearing about your findings.

Please send a completed copy of your research to email address or you can mail a hardcopy to:

LSI Research Contracts

c/o Alicia Orehowsky

Korn Ferry Hay Group, Inc.

1650 Arch Street, Suite 2300

Phila, PA 19103

Please let me know if you have any questions.

Best regards,

Alicia Orehowsky
Sales Support Coordinator

KORN FERRY
| HayGroup

1650 Arch Street

Appendix D: Learning Style Inventory

LEARNING-STYLE INVENTORY

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job or at school. Then, using the spaces provided, rank a "4" for the sentence ending that describes how you learn *best*, down to a "1" for the sentence ending that describes how you learn *least*. Be sure to rank all the endings for each sentence unit. Please do not make ties.

Example of completed sentence set:

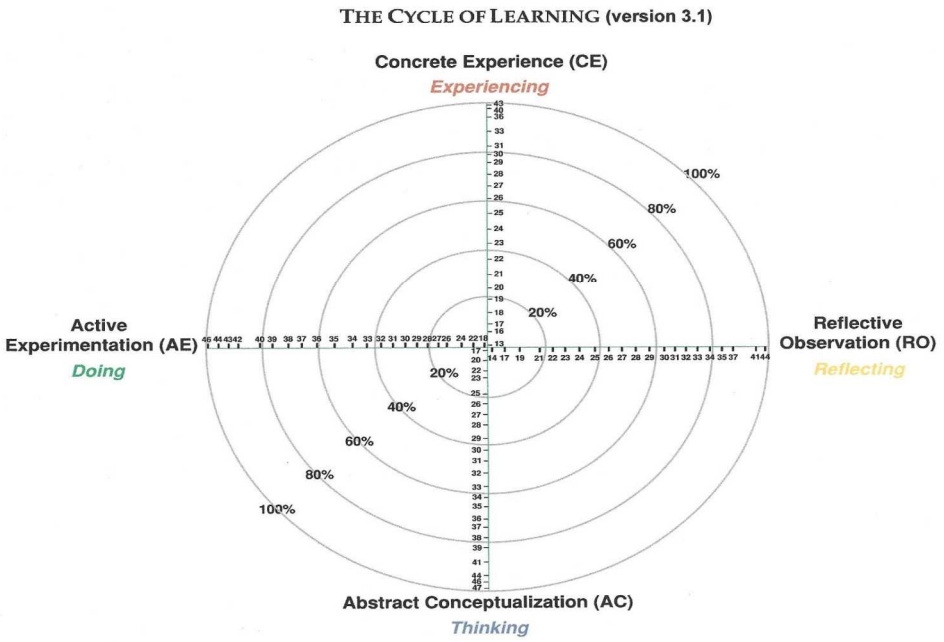
1. When I learn: 2 I am happy. 1 I am fast. 3 I am logical. 4 I am careful.

Remember: **4** = *most* like you **3** = *second most* like you **2** = *third most* like you **1** = *least* like you

	A		B		C		D	
1. When I learn:	___	I like to deal with my feelings.	___	I like to think about ideas.	___	I like to be doing things.	___	I like to watch and listen.
2. I learn best when:	___	I listen and watch carefully.	___	I rely on logical thinking.	___	I trust my hunches and feelings.	___	I work hard to get things done.
3. When I am learning:	___	I tend to reason things out.	___	I am responsible about things.	___	I am quiet and reserved.	___	I have strong feelings and reactions.
4. I learn by:	___	feeling.	___	doing.	___	watching.	___	thinking.
5. When I learn:	___	I am open to new experiences.	___	I look at all sides of issues.	___	I like to analyze things, break them down into their parts.	___	I like to try things out.
6. When I am learning:	___	I am an observing person.	___	I am an active person.	___	I am an intuitive person.	___	I am a logical person.
7. I learn best from:	___	observation.	___	personal relationships.	___	rational theories.	___	a chance to try out and practice.
8. When I learn:	___	I like to see results from my work.	___	I like ideas and theories.	___	I take my time before acting.	___	I feel personally involved in things.
9. I learn best when:	___	I rely on my observations.	___	I rely on my feelings.	___	I can try things out for myself.	___	I rely on my ideas.
10. When I am learning:	___	I am a reserved person.	___	I am an accepting person.	___	I am a responsible person.	___	I am a rational person.
11. When I learn:	___	I get involved.	___	I like to observe.	___	I evaluate things.	___	I like to be active.
12. I learn best when:	___	I analyze ideas.	___	I am receptive and open-minded.	___	I am careful.	___	I am practical.

MCB200C

Appendix E: The Cycle of Learning (Version 3.1)



1A	2C	3D	4A	5A	6C	7B	8D	9B	10B	11A	12B	CE Total
1D	2A	3C	4C	5B	6A	7A	8C	9A	10A	11B	12C	RO Total
1B	2B	3A	4D	5C	6D	7C	8B	9D	10D	11C	12A	AC Total
1C	2D	3B	4B	5D	6B	7D	8A	9C	10C	11D	12D	AE Total

MCB200D

Appendix F: Learning-Style Type Grid (Version 3.1)

LEARNING-STYLE TYPE GRID (version 3.1)