Summer 7-5-2024

EXAMINING THE DIGITAL LITERACY COMPETENCIES AND PRACTICES OF GENERATION Z EMPLOYEES IN HIGHER EDUCATION

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EXAMINING THE DIGITAL LITERACY COMPETENCIES AND PRACTICES OF GENERATION Z EMPLOYEES IN HIGHER EDUCATION

by

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A dissertation submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

Department of Human Resources Development

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Soules College of Business

The University of Texas at Tyler
July 2024

The University of Texas at Tyler
Tyler, Texas

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Dedication

This dissertation is dedicated to my family who have supported me during this long journey by keeping me humble, focused, and motivated. My grandparents, Betty Jean, and Big Rick, who only had an 8th grade and 4th grade education. Your support during every sport I played, every girl scout trip, and the wisdom you bestowed upon me during holiday visits back home was never forgotten. I am able to live the life that I live because of your sacrifice.

To my mom and dad, thank you for carrying me when I've fallen, guiding me to the light when the times got dark, and for being the best versions of yourself for me and my son. It is because of your trips to Tyler to babysit, financial support, and words of encouragement and motivation that I was able to overcome trials and tribulations to make it to today. Your sacrifice will always be remembered, and never taken for granted.

And finally, to my son, JR, it is because of you that mommy was able to get this far. Cheers to you for the many days of "study time", the days of doing "homework" together, and for being my audience for a presentation, even though you had no clue what I was talking about. Your listening ear, sparkling smile, understanding of the importance of this moment, and mature mindset has helped me focus and steady the course.

Acknowledgements

First, I must thank God for this opportunity. I had no clue when I moved to Tyler, Texas a decade ago, that this was a part of God's plan.

Second, I would like to thank the former director of the HRD program, Dr. Jerry Gilley, who passed away several years ago. You took a chance on me, when others doubted me. And I will always appreciate you for that.

Third, I want to thank Dr. Yonjoo Cho for being my committee chair, and my committee members, Dr. Rochell McWhorter and Dr. Kouider Mokhtari. I appreciate the "tough love", "real talk", and unwavering support throughout this process. It is because of y'all that the impossible is possible.

Last, to my friends, extended family, mentors, colleagues, coworkers, and community, your support, kind words, and prayers have meant the world. I stand on the shoulders of giants and will continue to pay it forward because of you.

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Abstract

The purpose of this study was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice and contribute to the HRD literature on Gen Z employees in the 21st century workforce. Three research questions guided my study: How do Gen Z employees in higher education experience digital literacy? What digital literacy skills gaps exist in Gen Z employees in higher education? And what can higher education institutions do to close the digital literacy gap for Gen Z employees entering the workforce? To examine the lived experiences of Gen Z employees' digital literacy in higher education, I chose a basic qualitative study design. This inductive approach was applied to all three research questions and helped me develop a deeper understanding of the meaning of participants' lived experiences.

To answer these three questions, I conducted semi-structured interviews with 19 participants (12 Gen Z employees and 7 supervisors of Gen Z employees) virtually via Zoom over the course of four weeks for the convenience of participants. I transcribed and coded the data with the help of a qualitative Ph.D. researcher and a quantitative Ph.D. researcher to ensure validity and reliability. I conducted member-checks with interview participants to check the validity of the data collected. There were five major themes identified from an analysis of the interview data using a thematic analysis of Lester et al. (2020): (1) experiencing digital literacy daily, (2) preferred technology, (3) workplace communication, (4) Gen Z skills gap, and (5) topics for future virtual training. This study was underpinned by: 1) the Virtual HRD theoretical framework (Bennett, 2014; McWhorter, 2014), 2) Generation Z cohort theory (Barhate and Dirani, 2022; Dimock, 2019), 3) the digital literacy conceptual framework (Pool, 1997; Martin, 2005; 2006), and 4) the digital literacy skills framework (Eshet-Alklai, 2004; 2012; Ng, 2012).

Eshet-Alklai (2012) and Ng (2012) were used to inform the interview protocol that I formulated based on the literature review of the framework for Gen Z's digital literacy skills.

The study's findings emphasize the digital literacy skills required to reskill Gen Z employees utilizing Virtual HRD tools such as virtual training and development to offer practical solutions for HRD scholars and HRD practitioners. This study contributes to the research gap for HRD scholars and researchers, extending the literature on Gen Z in the workforce because of the lack of empirical studies on Gen Z employees in the workplace setting. Contributing to the qualitative empirical literature on Gen Z in the workforce, this study also adds to Gen Z literature by examining the different attributes of pre-Covid Gen Z and post-Covid Gen Z.

Keywords: Generation Z, Gen Z, Virtual HRD, Digital Literacy, Higher Education

Chapter 1: Introduction

In March 2020, the Covid-19 global pandemic drastically affected higher education institutions (HEIs), which were forced to transition to a virtual learning environment practically overnight (Cicha et al., 2021). The four-year public higher education institution that I worked for was not immune; our students and employees left to go on spring break and did not return to campus for the rest of the semester. As a staff member in the Division of Student Affairs, I knew that I had to move rather quickly to transition my college student employees to a virtual work environment. In doing so, I was able to apply my knowledge of virtual human resource development (Virtual HRD), which is "a strategic, media-rich webbed environment, one that is typically based on one or more intranets, or private knowledge management systems, which become a seamless conglomeration of many things useful for learning and virtually limitless in expandability" (Bennett & McWhorter, 2022, p. 102). With the knowledge I gained from my coursework in The University of Texas at Tyler Human Resource Development (HRD) Ph.D. Program, I was able to develop a remote workplace in a week.

In navigating this uncharted reality, I realized that my Generation Z (Gen Z) college student employees who were tech-savvy, forward-thinking, and a part of the *born digital* (Seemiller & Grace, 2016) generational cohort lack an essential skill for the 21st century workforce: digital literacy. Helping 40 Gen Z employees sign digital documents, figure out how to use the Microsoft Office 365 Suite, and understand Zoom functionality and virtual meeting etiquette was an overwhelming learning experience. I found that to lead my team effectively, I had to upskill my own digital literacy before I could help my student employees. To that end, I began to build their digital soft and hard skills through remote work with daily reports, weekly Microsoft Teams and Zoom meetings, and the concept of virtual learning development. Through

this experience, I questioned how many of my student affairs colleagues were experiencing the same problem, discovering that Gen Z student employees were not as digitally literate as we initially thought.

Background

To build a better and more competent workforce, organizations such as Amazon, Domino's, and Shipt are learning that they must reskill (i.e., training and educating current employees to increase their digital skills and help them acquire new skills) and upskill (i.e., employees learn new technical skills for advancement opportunities in their current career trajectories) their employees to get ahead of the skills gap, as the workforce continues to elevate the technological skills of the 21st century (Jaiswal et al., 2021; Yorks et al., 2022). Identifying the skills gap, organizations are seeing middle-skill and low-skill workers across all generations and industries who require reskilling to succeed in the 21st century (Hughes et al., 2019; Marsan, 2021). Through virtual training, organizations and policymakers attempt to combat the skills gap issue by reskilling and upskilling the workforce (Marsan, 2021).

The U.S. Bureau of Labor Statistics (BLS) predicts that by 2030, Traditionalists (1922-1945), also known as the silent generation, who have lived through the Great Depression and World War II, will be nonexistent in the workforce (Toosi, 2016). By 2030, the BLS also predicts that Baby Boomers (1946-1963), currently the largest population in today's workforce, will retire in numbers upwards of 10,000 per day, leaving Millennials (1981-1995) and Gen Z (1996-2013) to make up more than 55% of the workforce (Hughes et al., 2019; Toosi, 2016). By 2060, Gen Z employees will become the baby boomers of the future (Hughes et al., 2019).

In this context, Gen Z employees need to be workforce ready to fill the open positions of both Traditionalists and Baby Boomers. In a 2019 National Association of Colleges and

Employers (NACE, 2019) Survey Report, higher education career development professional staff reported that Millennials and Gen Z employees need to develop their virtual problem-solving, self-directedness, and critical thinking skills. Gen Z employees' characteristics, such as short attention spans, contribute to deficits in their digital literacy skills (Deluliis & Saylor, 2021). Virtual training and development programs will be essential for Gen Z employees as organizations continue to transform digitally, adapting to enhance their virtual capacity and skills needed to be successful in the 21st century workforce (Germain, 2021).

Problem Statement

Gen Z employees have grown up with Internet access in the palm of their hand via a tablet or smartphone (McKee-Ryan, 2021; Wheatley & Hibbler-Britt, 2019). Gen Z employees also text-talk in formal communication which results in low vocabulary acquisition, contributing to their lack of digital literacy skills (McKee-Ryan, 2021). Research indicates that some Gen Z employees have poor analytical, virtual communication, and decision-making digital literacy skills, though they are *digital natives* (Chillakuri & Mahanandia, 2018). Given the research studies on the characteristics of Gen Z high school and college students, when it comes to the expectations of Gen Z in the workforce, there is a lack of empirical research on Gen Z employees and their digital literacy skills in the workforce (Bickle et al., 2019; Schroth, 2019).

Virtual communication is the preferred method of Gen Z, due to the heavy emphasis on text and direct messaging resulting in deficits within some aspects of Gen Zers' face to face communication (Brown, 2022). Rather than ask career advice from a supervisor, coworker, or mentor face-to-face, Gen Z is turning to TikTok and other social media platforms for career coaching (Korn Ferry, 2023). TikTok career advisors (a.k.a. social media influencers), are giving Gen Z trendy and toxic career advice for the workplace (i.e., act your wage, bare minimum

Mondays, quiet quitting, lazy girl job; Korn Ferry, 2023; Resume Builder, 2023a). Resume Builder (2023a) found that 41% (para. 9) of Gen Zers made a career decision in 2023 based on information they obtained from a TikTok influencer (Korn Ferry, 2023). Due to the lack of empirical peer-reviewed articles, books, and book chapters on this subject, corporations are now publishing their own reports and white papers on company websites and in business magazines about their Gen Z employees' digital literacy skills (Demopoulos, 2023; Marr, 2022).

Resume Builder (2023b) found that 39% (para. 3) of 1,000 supervisors and managers agreed that Gen Z is great at utilizing their digital communication tools; however, 74% cited Gen Z employees' lack of technological skills as the top reason they believe they are the most difficult generation to supervise in the workplace (para. 1). A National Skills Coalition Survey (2020) found that Gen Z employees have a gap in their digital literacy skills, with nearly 25% of respondents having either no digital literacy skills or limited digital literacy skills (Bergson-Shilcock, 2020, p. 10). When it comes to the expectations of Gen Z employees in the workforce and work culture, there still is a lack of empirical research on their digital literacy skills in the workplace (García-Pérez et al., 2021).

Due to the lack of empirical studies on Gen Z attributes in the workplace setting (Migliore et al., 2019), HRD and HRM scholars have noted the small elite percentage of Gen Z employees who possess 21st century skills while calling on more empirical literature to help close the digital soft and hard skills gap including digital literacy skills that plagues a majority of Gen Z employees (Wilson et al., 2017). Given the need for empirical research on Gen Z employees (Graczyk-kucharska et al., 2022), I aimed to fill the gap in empirical research on who full-time Gen Z employees are, their level of digital literacy skills in the workforce, and the best practices required to reskill Gen Z employees in higher education as well as examine Gen Z employees'

lived experiences in digital literacy in higher education institutions, which contributes to the HRD literature on Gen Z employees in the 21st century workforce.

Purpose of the Study

The purpose of this study was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice. Like some Millennials, Gen Z grew up with technology their entire life, making technology their first language, and affecting their interpersonal skills in the workplace (Desai & Lele, 2017). As technology use is a way of life for Gen Z employees, using technology is the best option in reskilling to narrow the skills gap in their preferred method of just-in-time training and development (Rosendale & Wilkie, 2020; Vițelar, 2019). Utilizing Virtual HRD strategies is considered suitable for reskilling Gen Z employees' digital literacy skills in formal and informal digital developmental and training contexts (Bennett & McWhorter, 2021) because it provides Gen Z employees access to online training and development tools 24/7/365 with on-demand options.

Research Questions

This study examined the digital literacy skills gap of Gen Z employees in higher education and provided implications for HRD research and practice. The following three questions guided the study:

- How do Gen Z employees in higher education experience digital literacy?
- What digital literacy skills gaps exist in Gen Z employees in higher education?
- What can higher education institutions do to close the digital literacy skills gaps for Gen Z employees entering the workforce?

Theoretical Background

The concept of Virtual HRD was introduced at the beginning of the 21st century as the cost efficiency of virtual professional development began to surpass face-to-face training and development (Bennett & McWhorter, 2017b; Rahimi et al., 2021). Virtual HRD "strategically improves expertise, performance, innovation, and community building through formal and informal learning" (Bennett, 2009, p. 365). Bennett (2014a) and McWhorter (2014) developed a theoretical framework establishing Virtual HRD as an application of new technologies in the workplace bridging together “knowledge management, organizational culture, and intranet” impacting “training, career, and organizational development” (Cho et al., 2009, p. 270). Virtual HRD is technology-enabled learning, training, and developmental networked activities that bridge professional expertise and the global workforce (Bennett & McWhorter, 2021).

Virtual HRD has theoretical underpinnings in adult learning (Mancuso et al., 2010), career development (McWhorter & Lynham, 2014), formal and informal learning (Ausburn & Ausburn, 2014; Thite, 2020), organizational development (Yoon & Lim, 2010), and training and development (Bennett & Higgens, 2016; Mast et al., 2018). Virtual HRD includes 3D virtual learning, gamification, social learning, and virtual mentoring and onboarding (Banton, 2019; Yarberry & Sims, 2021), all of which fall under technology-enabled activities (Bennett & McWhorter, 2021). The cross-cultural application of Virtual HRD has productive implications on workforce development across multiple industries (McWhorter et al., 2008, 2009; Rahimi et al., 2021).

Digital literacy falls under the umbrella of Virtual HRD. Bennett and McWhorter (2021) described new literacies such as digital literacy to be incorporated into education and Virtual HRD training settings helping balance the interpersonal and soft skills development of

professionals and students entering the workforce. Campuzano (2022) used Virtual HRD strategies in new employee orientation during covid-19 to close the digital literacy skills divide for less tech-savvy employees, finding that the self-paced online tools helped reduce frontline employee shortages. Audrin et al. (2024) noted Bennett and McWhorter (2021) in their conceptual framework development of digital literacy skills in the workplace; they developed a validated instrument to measure the digital skills of the 21st century workforce.

Before the term existed, the concept of digital literacy began with the innovations of Apple, IBM, and Microsoft in the late 20th century (Reddy et al., 2020). It was not until Paul Glister coined the term digital literacy in his 1997 book, Digital Literacy, that the term took off (Pool, 1997). Allan Martin then expanded on Glister's definition of digital literacy as:

> the awareness, attitude, and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and reflect upon this process (Martin, 2005, p. 135).

Eshet-Alkalai (2004) first developed a digital literacy framework that later served as the foundation for digital literacy skills (i.e., photo-visual digital skills, reproduction digital skills, branching digital skills, information digital skills, socio-emotional digital skills, real-time digital skills).

Although Gen Zers feel that they have very good digital literacy skills, employers of Gen Zers feel that they are unprepared and underprepared when entering the workforce (Le & Pole, 2022). Digital literacy is a "survival skill" in the 21st century workforce (Eshet-Alkalai, 2012, p. 268), and is essential for Gen Zers who recently graduated college and are entering the workforce (Gubbins et al., 2023). Some Gen Zers have been found to have a void in their creative, critical thinking, and information-navigation digital literacy skills (Miliou & Angeli,

2021; Pavlovich, 2021). Gen Zers in Europe (i.e., Austria, Czech Republic, Finland, Italy) focus on content consumption rather than content creation as they do not have the critical thinking skillset needed to reproduce content (Anckar et al., 2023).

Gen Zers' lack of understanding of non-intuitive hardware and software is shown by the difficult time they have navigating office equipment and computer software in the workplace (Berger, 2023; Marr, 2022). Effective use of emergent technologies in Virtual HRD to reskill Gen Z employees would likely boost employee morale, slow employee attrition, and reduce the high cost associated with employee turnover (Tung, 2020).

Study Design

To examine the lived experiences of Gen Z employees' digital literacy in higher education, I chose a basic qualitative study design (Merriam & Tisdell, 2016). This inductive approach was applied to all three research questions and helped me develop a deeper understanding of the meaning of participants' lived experiences. To that end, I conducted semi-structured interviews with 19 interview participants (12 Gen Z employees and 7 supervisors of Gen Z employees) virtually via Zoom for the convenience of participants. I collected data using Zoom over the course of four weeks.

To analyze the interview data, I used the seven phases of thematic analysis outlined by Lester et al. (2020): (1) preparing and organizing the data for analysis, (2) transcribing the data, (3) becoming familiar with the data, (4) memoing the data, (5) coding the data, (6) moving from codes to categories and categories to themes, and (7) making the analytic process transparent. I recorded interviews using closed captioning in Zoom and transcribed using TranscribeMe! transcription service. I conducted member-checks with interview participants to check the

validity of the study and then uploaded the TranscribeMe! transcripts into the MAXQDA qualitative data analysis software for the coding process.

Following the seven phases of thematic analysis outlined by Lester et al. (2020), I worked through an open coding process for the development of themes from the interview data. I developed a theme map and open codes into potential themes and sub-themes and defined and coded into thematic names. I did member-checks again to ensure that a draft of the study findings is a fair representation of their interviews.

To establish the validity of my dissertation study, I employed a trained qualitative Ph.D. researcher who is a communications professor. This qualitative researcher currently works at a higher education institution and has obtained their Ph.D. from the University of Memphis in Communications. This qualitative researcher has conducted phenomenological research and ethnography studies on the use of rhetoric in cultural and societal trends. This trained qualitative Ph.D. researcher provided the external reviewer with the lens needed to ensure accuracy of my study's findings (Creswell, 2016).

To address reliability, I employed a trained quantitative Ph.D. researcher who has worked in traditional higher education and medical school education, and has obtained their Ph.D. in HRD from UT Tyler. Both Ph.D. researchers' roles were to analyze the data (i.e., extract themes, organize themes, verify the data collected), and to validate the data. Each researcher analyzed their data independently and coded the data into themes. Once individual data thematic coding was complete, I conducted cross-checking from the data that was analyzed. In the cross-checking process, I streamlined both researchers' feedback to determine their level of agreement on themes, phrases, and sentences (Creswell & Báez, 2020). I met with each Ph.D. researcher via Zoom to discuss any discrepancies and confirmed their agreement on their data individually.

Significance of the Study

In this qualitative study, I answered the call for more empirical research on who full-time Gen Z employees are, their level of digital literacy skills in the workforce, and the best practices required to reskill Gen Z employees in higher education institutions. This study contributed to the HRD literature on Gen Z employees in the workforce, Gen Z employees' skills gaps in digital literacy, and the reskilling of Gen Z employees utilizing Virtual HRD. This qualitative study contributed to the HRD literature by providing a deeper understanding of the current Gen Z employees' experience, the reskilling required in higher education institutions using Virtual HRD concepts, strategies, and tools, and offering effective best practices for HRD and higher education practitioners. From a practical perspective, closing the skills gap through digital literacy will provide economic benefits for organizations that were affected by the Covid-19 recession, as more organizations have utilized virtual training and development resources (Razmerita et al., 2020; Rosenbusch & Morrison, 2020).

Limitations

This study has two main limitations. First, it is limited in the geographic area of focus. This study concentrates on Gen Z employees and their supervisors of the student affairs division in higher education institutions in the United States. Since this study is U.S.-centric, global Gen Z employees who work in the student affairs division at international higher education institutions will not be represented in this study. Second, it is focused on Gen Z employees in higher education. This study focused on the Gen Z employees in higher education professions and is not a full demographic representation of Gen Z employees in other disciplines, professions, and industries in the workforce. The final limitation is that I worked as a student affairs practitioner. I worked closely in a full-time capacity with the purposive sample of Gen Z

college students (since 2013), Gen Z full-time higher education employees (since 2017), and higher education colleagues (since 2008). I intend to remain objective in the research process of this study, however because of my familiarity with the sample population, some bias (i.e., personal, social, and cultural biases; see Creswell & Báez, 2020) might have occurred during this process.

Definition of Terms

The following section provides operational definitions of key terms that are used in the study.

Digital Literacy	Digital literacy is "the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and reflect upon this process" (Martin, 2005, p. 135; Ng, 2012).
Digital Literacy Skills	There are six digital literacy skills; they include photo-visual digital skills, reproduction digital skills, branching digital skills, information digital skills, socio-emotional skills, and real-time thinking skills (Eshet-Alkalai, 2012).
Generation Z (Gen Z) Employees	Gen Z employees, "born between 1997 and 2012, began graduating from high school in 2013" (Dimock, 2019). Gen Z employees, sometimes referred to as iGen (iGeneration) or Net Gen (Internet Generation), have grown up connected to the Internet their entire life, and their worldview has been shaped by instant internet access to information (Seemiller & Grace, 2016). Gen Z employees are "digital-centric, virtual communicators who graduated from college and began entering the workforce in 2017" (Barhate & Dirani, 2022, p. 140; Chillakuri, 2020).
Generation Z (Gen Z) Workforce	The Generation Z workforce is the most recent generational cohort to enter the workforce in the 21st century, with roughly 74 million Gen Zers in the cohort. The Gen Z workforce is the most educated and culturally diverse of all generational cohorts (Dimock, 2019). Generation Z employees will most likely have Millennial managers or supervisors as they graduated from high school in 2013 and from college in 2017 (Barhate & Dirani, 2022).
Higher Education Institutions (HEI)	Higher education institutions (HEIs) are significant economic contributors to the advancement of human capital across global sectors (Kovaleski & Arghode, 2021). HEIs are comprised of public and private institutions, 2-year colleges and 4-year universities, and academic, student, and business operations divisions (Cicha et al., 2021).

Reskilling	Reskilling is when an organization invests in training and education for their current employees and workforce to increase their digital skills, help them acquire new skills, and make them more marketable and prepared for the future virtual workplace (Nwaohiri & Nwosu, 2021). Reskilling "prepares employees for new jobs and career changes" (Bennett & McWhorter, 2021, p. 6).
Student Affairs	The student affairs profession, sometimes referred to as student success, is defined as a division or unit of the university that "advances the mission of higher education institutions via curricular or co-curricular functions while supporting student learning and development" (Yao & Mwangi, 2017, p. 1). Student affairs practitioners are individuals who help students first-hand through advising, campus recreation, counseling, residential, and student union services (Spaulding, 2020).
Upskilling	In the upskilling process, employees train and learn new technical skills to become more successful; employees use upskilling for advancement opportunities in their current career trajectories (Jaiswal et al., 2021). Upskilling "prepares employees for advancing within their current career tracks" (Bennett & McWhorter, 2021, p. 6).
Virtual HRD	Virtual HRD is technology-enabled learning, training, and developmental networked activities that bridge together professional expertise and the global workforce (Bennett & McWhorter, 2021). Virtual HRD is "a strategic, media-rich webbed environment, one that is typically based on one or more intranets, or private knowledge management systems, which become a seamless conglomeration of many things useful for learning and virtually limitless in expandability" (as cited in McWhorter, 2023; Bennett & McWhorter, 2022, p. 102).

Summary of Chapter 1

In this chapter, I discussed the background of the study and the problem statement of the digital literacy skills gap of Gen Z employees. The purpose of the study was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice, and to highlight the significance of the Gen Z employee in this qualitative study. I also discussed the Virtual HRD theoretical background, the basic qualitative study design that was used for the data collection method and data analysis procedures, and the purposive sampling that was used. I concluded with limitations and definitions of terms to be used in this study.

Chapter 2: Literature Review

In this chapter, I reviewed three research constructs: Virtual HRD, Gen Z, and Gen Z's digital literacy. In this review, I examined scholarly journal articles, books, book chapters, corporate technical reports, white papers, and business magazines to provide a theoretical background for this study. This chapter includes: (a) details regarding the literature search; (b) the definition of Virtual HRD, Virtual HRD literature and related studies; (c) the definition of Gen Z, its characteristics, and Gen Z in higher education; (d) the definition of digital literacy, Gen Z's digital literacy gap, and the framework for Gen Z's digital literacy; and (e) implications for the study. I concluded the chapter with a summary of the literature review.

I conducted the literature search process between Spring 2022 and Fall 2023. I followed Callahan's (2014) The Six W's: Components of a Literature Review Method Section as a guide for the literature review. I conducted all searches using Google Scholar, Scopus, and Business Source Complete. Key descriptors used included: "VHRD", "Virtual HRD", "technology + HRD", "digital HRD", "digital literacy", "skills gap", "Generation Z", "Gen Z", "Gen Z employees", and "Gen Z workforce". I used the snowball selection method (Callahan, 2014) when reviewing scholarly journal articles, books, book chapters, dissertations, and conference proceedings by searching the reference list of each publication to find relevant citations within the established publication timeline.

Virtual HRD

The concept of Virtual HRD was first coined at the 2008 Academy of Human Resource Development (AHRD) Conference during an innovative session (see McWhorter et al., 2008). Virtual HRD first appeared in HRD literature with an Overview by Cho et al. (2009) in the *Advances in Developing Human Resources* journal, June 2009 issue. Cho et al. (2009) posited

Virtual HRD as a new concept beginning in the field that has implications for online "training, career, and organizational development" (p. 270, para. 4). Foundational Virtual HRD literature defined Virtual HRD as a "media rich and culturally relevant web environment that strategically improves expertise, performance, innovation and community building through formal and informal learning" (Bennett, 2009b, p. 364). Virtual HRD is now defined as "a strategic, media-rich webbed environment, one that is typically based on one or more intranets, or private knowledge management systems, which become a seamless conglomeration of many things useful for learning and virtually limitless in expandability" (Bennett & McWhorter, 2022, p. 102; McWhorter, 2023).

In 2010, Virtual HRD began to emerge focusing on the use of the digital tools that employees used to connect one-way to technology, how employees connected two-ways through technology, and how employees connected within technology in virtual worlds (McWhorter, 2010). Virtual HRD then took on a structural integration, with Bennett and Bierema (2010) streamlining virtual human resources (Virtual HR) into the harmony and constraints between virtual human resource management (Virtual HRM) and Virtual HRD shifting the paradigm and noting the implications on organizational transformation. Bennett (2014a) and McWhorter (2014) have been credited with conceptualizing the theoretical framework establishing Virtual HRD as the phenomenon of the application of new technologies in the workplace (Bennett & Bierema, 2010; Bennett & McWhorter, 2021, 2022). Bennett (2014b) further explored the positive impact that an organization's intranet had on the organizational learning culture (i.e., broader community and belonging, more recognition and rewards, reinforcement of organizational expectations, and organizational professional communication standards). Mutamba (2017) added to Virtual HRD's role in organizational learning by discussing the

intersection of virtual technology, organizational learning culture, and the role of virtual communities of practice.

Suggesting a third wave of "diversification" in the evolution of HRD (Banton, 2019), Bennett and McWhorter (2021) referred to this new era as the "fourth industrial revolution" (p. 8). Virtual HRD offers the ability to connect the HRD scholar to the HRD practitioner, thus connecting the two communities of practice for the betterment of the HRD discipline (cf. Dewey & Carter, 2003; Kuchinke, 2004). Per Bennett's (2010) suggestion, HRD scholars closely aligned themselves with computer science scholars to determine commonality between the two disciplines in Virtual HRD as both areas used the terminology but with different meanings (Thite, 2022).

Related Studies

HRD scholars grounded Virtual HRD theoretical underpinnings in adult learning and virtual learning environments (Bennett & McWhorter, 2022; Chapman & Stone, 2010; Mancuso et al., 2010). Nafukho et al. (2010) and Rahimi et al. (2021) cited the benefits of Virtual HRD processes to the Network Generation (Millennials) and iGeneration (Gen Z) workforces. Nafukho et al. (2010) looked at utilizing Virtual HRD (i.e., virtual classrooms, virtual offices, virtual learning) through the lens of the development of human capital and called for HRD partitioners to design virtual learning environments to meet the needs of the Millennial generational cohort. Rahimi et al. (2021) conducted an integrative literature review, reviewing 49 full-text peer-reviewed articles on the development of Virtual HRD theoretical foundations, and found a new conceptual model of organizational Virtual HRD with three major themes: socialization, learning and development, and psychological characteristics.

Furthermore, global HRD scholars have adapted HR and HRD processes to integrate contemporary technology such as the use of AI (artificial intelligence) and AR (augmented reality) for workplace learning and training, 360-degree performance appraisals via customized apps, use of social media for the transfer of knowledge, and conducting employee engagement through self-paced e-learning modalities, robotics, and virtual nanotechnology employee safety training (Lampert et al., 2018; McWhorter & Lindhjem, 2013; Thomas, 2014). Virtual HRD has had productive implications for workforce development across multiple industries (Bennett & McWhorter, 2021; Rahimi et al., 2021) due to its impact on training and development (Bennett & Higgens, 2016; Mast et al., 2018), and career development (McWhorter & Lynham, 2014). Essentially, Virtual HRD is a future-focused organizational strategy that builds capacity for a digitally competent workforce by putting the individual at the center of their career development (Thite, 2022).

Virtual HRD-related studies focused on virtual teams, virtual onboarding, gamification, and human-robot interaction. Germain and McGuire (2014) discussed the need to build swift trust in virtual online environments through consistent team communication, and essential relationships within virtual teams for a successfully performing organization. Han and Hazard's (2022) systematic literature review of shared and distributive leadership in virtual teams discussed the antecedents, outcomes, and implications of virtual teams' research in HRD. Contrary to Han and Hazard's (2022) group themed research, Chai and Park (2022) presented two qualitative case studies that focused on the implications of virtual teams during the Covid-19 pandemic on the individual employee's psychological well-being. Campuzano's (2022) virtual learning and development qualitative case study focuses on the implications of a Covid-19 new employee orientation through virtual onboarding of a health system. Further, the systematic

literature review of gamification in the workplace by Thomas et al. (2022) provides implications on emerging themes and rising contexts in employee learning, task performance, and employee wellness offering future practical experiential outcomes, influencing factors, and designing and sustaining gamification. Also, Kim's (2022) systematic literature review of human-robot interaction provides Virtual HRD scholars with implications for the attributes related to robot and human contact, human collaboration with robots, and deeper understanding of human capabilities when working with robots.

As of late, current Virtual HRD-related studies focused on using the metaverse because of the advanced 3D technology combining virtual reality, augmented reality, and mixed reality for training and development (Hajjami & Park, 2023), examining digital learning mediums in the learning pedagogy context for virtual learning and development (Gubbins et al., 2023), and examining the social and emotional experiences of work-life boundaries for telecommuters working remotely on interdependent virtual teams (Michaud & Conceicao, 2023). Michaud and Conceicao (2023) found that informal interactions between virtual teams increased their effectiveness in their work because of the positive impact on their sense of belonging. McWhorter (2023) analyzed 36 peer-reviewed articles from 52 Virtual HRD related authors finding 10 common themes of both challenges and opportunities (i.e., Virtual HRD's role in times of crisis, knowledge management, learning, managing employees in virtual environments, measuring Virtual HRD, skill development through Virtual HRD, social presence and organizational culture, security and privacy, technology development and interventions, and virtual tools). The *Skill Development Through VHRD* theme was found in one third of the literature reviewed emphasizing the importance for upskilling and reskilling the workforce;

"therefore having knowledge and skills around Virtual HRD is beneficial for staying afloat and thriving" (McWhorter, 2023, p. 585).

Adult Learning. Virtual HRD's adult learning theoretical underpinnings include individual formal and informal learning (Ausburn & Ausburn, 2014; Bennett & McWhorter, 2017b; Thite, 2022) as well as organizational formal and informal learning (Yoon & Lim, 2010). Virtual HRD is the optimal virtual learning, training, and development strategy because it provides employees with the opportunity to access online learning materials 24/7/365 with an on-demand option (Banton, 2019; Thomas, 2014). For example, Caruso's (2018) qualitative study resulted in 25 employees from two office locations in the Midwest taking self-directed learning into their own hands, no longer waiting on their organization to implement learning initiatives. Caruso (2018) urged HRD practitioners to identify and implement Web 2.0 technology in their workforce by setting a code of conduct on Virtual HRD technology usage in the workplace.

Most technology-related HRD is umbrellaed under Virtual HRD terminology, which explains why the definition kept evolving with the evolution of technology and the use of social media in HRD training and development, talent recruitment and development, onboarding, and other traditional HRD practices (Thite, 2022). In their empirical exploratory study, Mancuso et al. (2010) examined Knowles's (1989) adult learning theory using the Second Life (SL) virtual world. In their yearlong study of 45 Second Lifers, researchers found that utilizing digital tools like SL contributed to life-long learning, global and multidisciplinary collaboration, social presence theory in virtual learning environments, and the creation of a sense of belonging (Mancuso et al., 2010). Participants also pointed out the significant cost savings over in-person seminar, workshop, and conference experiences (Mancuso et al., 2010). Chapman and Stone

(2010) focused their exploratory qualitative case study on the assessment of 3D virtual learning environments from 2007 to 2010 and suggested that HRD scholars utilized a data collection plan using documents, records, interviews, and observations through the analysis of journals, blogs, social media pages, and learning management system (LMS) chat and messages. Chapman and Stone (2010) also found that performance-based learning (i.e., problem-based learning artifacts and authentic assessment measures) and social learning (i.e., group learning artifacts, peer learning, and peer assessment) evaluation methods were the "most effective in virtual worlds" (p. 673).

Recently, Lee et al. (2021) presented a six-factor regression analysis of work engagement factors of Gen Z employees that was not statistically significant concerning the satisfaction of technology and employee engagement for their 69-participant sample. They attributed this finding to the impact of technology use during Covid-19. As of late, post-Covid research has dominated academia, with scholars like Mitchell's (2021) post-Covid qualitative research with graduate students that focused on the positive findings of virtual collaboration such as: (1) flexibility and productivity, (2) management and leadership, (3) social connectedness and organizational culture, and (4) technology support.

Currently, Gubbins et al. (2023) examined multiple digital learning mediums through the context of Virtual HRD-related learning pedagogy. Their findings noted that the research for digital learning mediums is overly focused on educational settings, leaving a void in our understanding of the outcomes of digital learning implications in the workplace.

Virtual Learning Environments. Torraco and Lundgren (2020) noted that the advances in the Virtual HRD literature within the learning and development domain have grown to include 3D virtual learning and training (Ausburn et al., 2019), virtual reality training (Schmid Mast et

al., 2018), gamification (Huang, et al., 2010; Saxena & Mishra, 2021), social presence theory (Bickle et al., 2019; Schneider et al., 2021), and virtual mentoring and onboarding (Ausburn et al., 2019; Yarberry & Sims, 2021), all of which fall under the Virtual HRD umbrella as these concepts are technology-enabled activities (Bennett & McWhorter, 2021; McWhorter, 2023).

Banton (2019) and Migliore et al. (2019) cited the importance of 3D virtual learning as critical to future Virtual HRD training and development because it offers real-life scenario-based training that future generational workforces need. This was akin to Clayton's (2017) qualitative dissertation study using gamification within an immersive 3D virtual learning environment for the virtual leadership development of 18 students in a military educational setting. Clayton (2017) used multiplayer educational role-playing games to develop a new comprehensive leadership training and development model to be used at the Squadron Officer School (SOS) at Maxwell Airforce Base (AFB).

In their qualitative study, Ausburn et al. (2019) found that digital natives do not see a difference between the virtual world and real-life experiences because of their upbringing in a digital world, meaning that members of Gen Z make no distinction between the two, viewing both virtual experiences and face-to-face experiences as equivalent. Namkoong et al. (2022), reporting on their qualitative study of 291 Gen Z high school students, demonstrated how utilizing an immersive virtual reality learning environment as a prevention strategy mitigated farming-related deaths and injuries.

In addition to HRD scholars, scholars in other disciplines have centered virtual learning environments in social learning theories, such as the Cognitive-Affective-Social Theory of Learning Environments (CASTLE) for soft skills development of the future workforce (Schneider et al., 2021), use of social cognitive theory to study Gen Z knowledge transfer

(Hamdi et al., 2022), and the use of social learning theory during Covid-19 as a foundation for virtual mentoring for remote employees (Yarberry & Sims, 2021). The empirical literature review by Schneider et al. (2021) focused on social learning and social cognitive theoretical applications within virtual learning environments and resulted in the Cognitive-Affective-Social Theory of Learning Environments (CASTLE) as a unified approach to the integration of the digital world into social theoretical foundations. Further, Yarberry and Sims (2021) focused on eight remote/virtual employees from different generational cohorts, and the results of their qualitative, phenomenological study showed the importance of virtual mentoring and virtual career development in virtual learning environments. To that end, Edsall and Conrad's (2021) sequential explanatory study of 149 virtual employees indicated that virtual coaching and virtual mentoring had a positive effect on virtual teams in performance development efforts. Tung's (2020) quantitative dissertation study on using technology in human resource talent management to hire, manage, develop, and retain employees at a multinational company in Hong Kong revealed that an advanced virtual environment increased communication with internal and external stakeholders, reduced the redundancy of data for productivity, and created a virtual collaborative environment for the company's workforce.

Global academic scholars are also researching how social presence theory and virtual learning environments can shape the identity and soft skills of Gen Z (Okoros, 2020). For instance, the quantitative empirical study of Heidari et al. (2020) discussed the use of virtual social networks to construct the professional identity of 298 graduate students in four Iranian higher education institutions. The empirical quantitative study of Hamdi et al. (2022) applied social cognitive theory for knowledge transfer between 300 Indonesian Millennials and Gen Z participants, and resulted in the authors finding that Gen Z participants were more apt to use

technology to learn, being more independent than Millennials in the digital world (Hamdi et al., 2022). The qualitative study by Lampert et al. (2018) compared classical e-learning platforms with MaxWhere (https://www.maxwhere.com/) that utilized a virtual reality (VR) platform for 379 undergraduate students at one higher education institution in Hungary. The researchers found that virtual collaboration from VR projects resulted in more productivity and could be completed in less time, in some cases 50% faster when using virtual reality (p. 143).

Furthermore, HRD scholars have determined that industries that invest in Virtual HRD (i.e., virtual onboarding, virtual learning environments) not only reduce their carbon footprint but also save on the cost of hiring, training and development, and organizational learning per employee over time (Banton, 2019; McWhorter & Delello, 2016). From a practical perspective, closing the skills gap through digital literacy and reskilling provides cost-efficient benefits for organizations, especially those affected by the Covid-19 recession, as more organizations are beginning to fully understand and utilize virtual training and development at little or no cost (Razmerita et al., 2020; Rosenbusch & Morrison, 2020). Virtual HRD allows Gen Z employees to develop their newfound skillsets for the 21st century workforce, giving them the skills to excel in virtual interviewing, virtual networking, and virtual communication.

The practical implications for Virtual HRD are endless as Virtual HRD scholarship has continued to grow; Virtual HRD must continue to evolve to keep the HRD profession and industry related practitioners abreast of current and future trends (McWhorter, 2023). McWhorter (2023) noted one implication for practice in that HRD practitioners, college students, and academic programs will need to upskill to be prepared for technological advances in the workplace, thus changing the way we work.

Generation Z

Generation Z (Gen Z) continues to enter the 21st century workforce where automation, artificial intelligence, and global digital transformation has changed the way we work. In this section, I used Barhate and Dirani's (2022) and Dimock's (2019) definitions of Gen Z to provide context for not only the definition of Gen Z, but also the development of their characteristics and included the digital literacy skills gap discussed in the study. According to Dimock (2019, para. 6), Gen Z was "born between 1997 and 2012 and began graduating from high school in 2013." Barhate and Dirani (2022, p. 140) defined Gen Z as "digital-centric, virtual communicators who graduated from college and began entering the workforce in 2017." Though Gen Z has been present in the workforce since 2017, there is a need for more empirical research on Gen Z in the workplace beyond the K-12 school setting and higher education institutions (Gubbins et al., 2023).

Definitions

The Gen Z workforce is the most recent generational cohort to enter the workforce this century, with roughly 74 million in the Gen Z cohort. Gen Z employees, born between 1997 and 2012, began graduating from high school in 2013 and entered the workforce in 2017 (Barhate & Dirani, 2022; Chillakuri, 2020; Dimock, 2019). Gen Z employees, sometimes referred to as iGen (iGeneration) or Net Gen (Internet Generation), grew up connected to the Internet their entire life, and their worldview has been shaped by instant internet access to information (Seemiller & Grace, 2016). The Gen Z workforce is the most educated and culturally diverse of all generational cohorts (Dimock, 2019).

Some scholars questioned the validity of Gen Z as a cohort, referring to them as the post-Millennial cohort, viewing them from the social constructionist theoretical perspective (Okros,

2020). Other scholars have noted the vast representation of ages, sociocultural differences, and life experiences within the cohort's age range (Gakpo, 2021; Menand, 2021; Parker, 2023; Rudolph et al., 2020). Covid-19 only added to their argument with the distinction of lifetime experiences, expectations, and worldview between the pre-Covid Gen Z cohort and the post-Covid Gen Z cohort (Selingo, 2021). The pre-Covid Gen Z cohort are those in Gen Z who started college in 2013 and were already in the workforce or entering the workforce in 2020. According to Selingo (2021), the larger post-Covid Gen Z cohort, which spans over a decade, entered college in 2020, and includes fifth through twelfth graders in this cohort group.

Characteristics

The Gen Z cohort is considered the "most technologically literate" (Desai & Lele, 2017, p. 807) out of all five generational cohorts in the workplace: Traditionalist (pre-1945), Baby Boomers (1946-1963), Generation X (1964-1980), Millennials (1981-1995), and Generation Z (1996-2013) (Barhate & Dirani, 2022; Chillakuri, 2020; Dimock, 2019). Members of Gen Z are accustomed to holding a phone conversation on their wearable (i.e., smartwatch; McWhorter & Bennett, 2021), asking Siri or Alexa to update their social media status on their smartphone, and using Instagram, LinkedIn, Snapchat, and TikTok as a business communication medium (Macko, 2018; Viţelar, 2019).

With helicopter parents as their guide, members of Gen Z have been taught to question the status quo, challenge the traditional ways of the workforce, and give their point of view on new ways in which the organization can better help serve them (Chillakuri & Mahanandia, 2018). Gen Zers spend at least 10 hours a day on their devices, and because of this, they are more prone to digital fatigue and have admitted to needing a hybrid of face-to-face and practical

virtual training when it comes to professional communication skills (Chillakuri & Mahanandia, 2018; Schneider et al., 2021).

Research indicates that pre-Covid Gen Z values included innovation (technology), gamification (rewards systems), collaboration (virtual social connection), customization (work-life balance), and independence (Barhate & Dirani, 2022; Desai & Lele, 2017), requiring an innovative instructional technology approach to the reskilling of these digital natives (Wheatley & Hibbler-Britt, 2019). Post-Covid Gen Z members value online engagement, multiple communication delivery channels, and virtual socialization as they have felt the implications of being isolated at home for the 2020 academic year and part of the 2021 school year (Selingo, 2021). Graczyk-Kucharska et al. (2022) conducted an empirical quantitative study about the use of artificial intelligence (AI) technology to predict Gen Z commitment to innovativeness and desire to work for innovative companies. They found that a majority of the 5,095 participants, 84% of pre-Covid Gen Z (graduating in 2018-2019) and 89% post-Covid Gen Z (graduating in 2020-2022) considered workplace innovativeness as their top priority when entering the workforce.

Virtual HRD is what Gen Z uses to navigate their digital footprint. Gen Zers best perceive, learn, and interpret content through digital media and mobile technology in the workplace, making it the best option for HRD practitioners in the development of Gen Z employees to narrow the skills gap (Viţelar, 2019). HRD practitioners will need to meet the needs of Gen Z employees' self-directed virtual learning by embracing the use of social media in the workplace while establishing a code of conduct and best practices that directly impact employee performance (Caruso, 2018).

Global Gen Z academic scholars focusing on Gen Z qualitative exploratory and empirical literature have conducted studies on Gen Z onboarding strategies and Gen Z intrapreneurs in corporate organizations. Singh Ghura's (2017) qualitative exploratory study provided implications for Indian organizations navigating the challenges of Gen Z working with Gen Z intrapreneurs in entry-level positions. Chillakuri's (2020) qualitative empirical study on Gen Z MBA students in the workforce focused on effective onboarding strategies resulting in six second-order categories with implications for practical organizational change management, one strategy furthering the need for Gen Z virtual self-directed learning and development in the workplace.

Recent doctoral studies included a deeper industry focus on Gen Z entering the workforce, such as González's (2023) qualitative phenomenological study on digital literacy in the employability of graduates during Covid-19 and Hollandsworth's (2022) qualitative exploratory single-case study on Gen Z entry-level employees in the security profession. Additionally, in Murphy's (2020) qualitative single-case study, interviews were completed with 15 human resources professionals in the Washington DC area to determine implications of Gen Z onboarding and challenges of Gen Z entry-level employees in the federal government. Pavlovich's (2021) qualitative non-experimental study on Gen Z senior high school students entering the workforce found that there was a statistically significant difference between their pre-test and post-test digital literacy scores after experiencing an asynchronous virtual learning class. To that end, Pluemer (2021) conducted a quantitative empirical causal-comparative study comparing job satisfaction of Millennial and Gen Z federal employees in the Department of Defense.

Due to the lack of empirical studies on Gen Z attributes in the workplace setting (Migliore et al., 2019), relevant HRD dissertation studies focused on Virtual HRD topics such as workforce development through employee virtual learning and development (Taylor, 2023), virtual training and development for Gen X participants (Viltz-Emerson, 2021), the influence of Virtual HRD on HRD practitioners (Macko, 2018), and faculty training and development at 2-year institutions (Plachuta, 2016). Though Viltz-Emerson's (2021) empirical mixed-method study does not contribute to the Gen Z literature, it is beneficial to HRD, with implications regarding the digital literacy skills required of learning and development professionals in the 21st century. This gap in the literature on Virtual HRD for Gen Z points to the need for further research of HRD practitioners using Virtual HRD approaches such as gamification, virtual onboarding, and virtual reward system models in the workplace setting as those align more with the workplace values of Gen Z (Desai & Lele, 2017).

Gen Z in Higher Education

Digital transformation continues to change the higher education landscape through virtual learning environments and the development of Gen Z employee virtual skill sets. Higher education offers Gen Z employees an environment where innovative experiential learning meets real-world experience (Seemiller & Grace, 2016); context is provided for Gen Z in higher education.

Higher education has transformed over the last decade, trying to advance technological innovation into student learning through artificial intelligence, learning management systems, and massive open online courses (Rosenbuch, 2020). The higher education context is a suitable setting for Gen Z employees since these organizations apply adult learning theory, student development theory, and organizational learning theory to Gen Z employee training and

development (Spaulding, 2020). Gen Z requires customized self-directed, just-in-time training and development for use on their mobile devices, allowing them to take ownership of their professional learning and development (Banton, 2019). Further, higher education settings allow Gen Z employees to take the necessary time to develop workforce skills and increase their employability for entering the workforce (Selingo, 2021).

Cabellon and Junco (2015) discussed the vital role that student affairs organizations and professionals have in using digital and social technologies to prepare Gen Z for the 21st century workforce within the higher education setting. Student affairs departments (i.e., residential life, student union, and campus recreation) employ Gen Z students in paraprofessional roles (Seemiller & Grace, 2016; Spaulding, 2020). Student affairs organizations offer Gen Zers a seamless co-curricular learning environment where innovative experiential learning meets real-world experience (Seemiller & Grace, 2016; Yao & Mwangi, 2017). Seemiller and Grace (2016) noted that Gen Z employees in the higher education setting prefer YouTube University, TED Talks, and MOOCs in their departmental training and development due to the nature of the just-in-time, 24/7/365 accessibility and technology-based learning (Park et al., 2018).

Given the recent focus on Massive Open Online Courses (MOOCs) in academia, there is a greater need for further research into virtual training and development, such as Virtual HRD, in the higher education setting (Rosenbusch, 2020; Rosenbusch & Morrison, 2020). Rosenbusch (2020) discusses emerging technologies' (i.e., blended learning, online learning, new tools, and technological platforms) impact in higher education on human resource development programs, offering a list of best practices for academic leaders and HRD practitioners. Academic scholars have noted that virtual learning environments, such as Virtual HRD, offer the best option in reskilling to narrow the digital literacy skills gap within higher education, which provides Gen Z

with an environment where unlearning and reskilling can take place without negative consequences (Rosendale & Wilkie, 2020; Viţelar, 2019).

Further, Sexena and Mishra's (2021) systematic empirical literature review of the use of gamification as an effective virtual learning tool for Gen Z in higher education highlighted the need for more empirical research on Gen Z virtual learning both in higher education and for HR and HRD practitioners as they enter the workforce. Providing an immersive virtual learning environment in a higher education setting helps to prepare Gen Z students to become the Gen Z workforce (Clayton, 2017). Unlike their Gen Y predecessors, Gen Z employees may enter the workforce at an earlier age, partly due to early college programs, dual credit programs, and virtual e-learning coursework (Acheampong; 2019; Wilson et al., 2017). The globalization of higher education makes it the prime environment for virtual learning and development because of the digital transformation that it has undergone over the past decade (Chillakuri, 2020; Yao & Mwangi, 2017).

There has been an emphasis placed on instilling 21st century skills, such as digital hard and soft skills including digital literacy, into higher education's e-learning curriculum to prepare Gen Z employees to enter the workforce (Okros, 2020). Gubbins et al. (2023) noted digital literacy as a skill for recent graduates, calling for more research on the learning disadvantages of digital learning which includes limited digital literacy in using hardware and software, lack of familiarity with digital learning platforms, limited cognition skills for researching, obtaining, and evaluating information, and a need for continuous retraining to keep up with new and emerging technologies (p. 140).

HRD and HRM scholars have noted the small elite percentage of Gen Z employees who possess 21st century skills while calling on more empirical literature to help close the digital soft

and hard skills gap including digital literacy that plagues most Gen Z employees (Wilson et al., 2017). For instance, a qualitative study by Rotatori et al. (2021) found that about half of the 23 HRD practitioners cited higher education as critical to the reskilling effort of the current workforce, needing to build capacity to be ready for the future workforce. Gen Z processes information differently than prior generations, preferring to watch task completion first (i.e., watching a video on YouTube, watching an influencer on social media) before trying to do it on their own (Szymkowiak et al., 2021). Gen Z employees' characteristics, including short attention spans, contribute to interpersonal deficits in their digital literacy skills (Deluliis & Saylor, 2021). HRD practitioners should utilize Virtual HRD measures to satisfy Gen Z needs as they enter the workforce, as shown in Chillakuri and Mahanandia's (2018) exploratory quantitative study that found Gen Z are multitaskers who prefer autonomous, just-in-time virtual training and development.

There is a push in the HRD discipline to research Gen Z because while generational empirical studies have focused on the characteristics of Gen Y (Millennials) in the workforce (Hamdi et al., 2022), there is a paucity of research on Gen Z. Virtual HRD provides HRD practitioners with an abundance of digital literacy tools required to adequately reskill Gen Z employees through formal virtual training and development, just-in-time online learning management systems, and other social media platforms (Rosendale & Wilkie, 2020; Viţelar, 2019).

Gen Z's Digital Literacy

Computer literacy was the term used between the early 1980's through the early 1990's as society's technology advanced beginning with the Apple II (1977), the Graphical User Interface (1979) in the 1970's, IBM's personal computer (1981), the Internet (1983) and

Microsoft Windows (1985) in the 1980's (Reddy et al., 2020). As technology evolved, the definition of computer literacy, the implementation, application, and understanding of the knowledge, characteristics, and capabilities in productive computer usage, became obsolete (cf. Hunter; 1984; Reddy et al., 2020; cf. Scher 1984). In the late 1990's a new term was coined, digital literacy, first coined by Paul Glister in 1997 (Pool, 1997). Digital literacy serves as a conceptual framework with an expanding definition that changes as new, emergent, and trending technologies continue to push technological advancements (Tinmaz et al., 2022). Due to the constant technological transformation, some scholars have called the digital literacy framework vague, ambiguous, and incomplete (Loewus, 2016; van Deursen et al., 2015). Gen Z digital literacy was discussed in the context of this study pertaining to the definition of digital literacy, Gen Z's digital literacy gap, and the framework for Gen Z's digital literacy. Digital literacy is defined as:

> the awareness, attitude, and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and reflect upon this process (Martin, 2005, p. 135).

Gen Z's Digital Literacy Skills Gap

Though Gen Z employees are virtually savvy in their digital social communication and internet-operational skills (Berger, 2023; Miliou & Angeli, 2021), research indicates that members of Gen Z have poor problem-solving, analytical, and decision-making digital literacy skills (Chillakuri & Mahanandia, 2018; Schroth, 2019). Gen Z employees' characteristics, including short attention spans, contribute to interpersonal deficits in their digital literacy skills (Deluliis & Saylor, 2021). Gubbins et al. (2023) cited digital literacy as a skill for Gen Z who recently graduated college and are now entering the workforce. Le and Pole (2022) noted that

Gen Z graduates feel that they have very good digital literacy skills contrary to their employers who feel that they are un- and underprepared. Due to the lack of empirical peer-reviewed articles, books, and book chapters on this subject, corporations have been publishing their own reports and white papers on company websites and in business magazines about their Gen Z employees' digital literacy skills (Dell, 2022; Demopoulos, 2023; Marr, 2022; HP, Incorporated, 2022).

For instance, HP reported on a survey of 10,000 employees from its global workforce in 10 countries, finding that 20% of Gen Z employees feel judged and experienced *tech shame* when they become overwhelmed while experiencing tech issues using basic office equipment in the workplace (HP, Incorporated, 2022). Also, known as the "tech-education gap," the digital literacy skills gap posits Gen Z employees' upbringing on user-friendly apps and lack of understanding of non-intuitive workplace hardware and software causes greater concern across multiple industries (Berger, 2023; Marr, 2022). Gen Z workers have been found to have a void in their creative, critical thinking, and information-navigation digital literacy skills because they focus on content consumption rather than content creation (Miliou & Angeli, 2021; Pavlovich, 2021). Gen Z workers do not have the critical thinking skills needed to reproduce content resulting in a skills gap in the practical application of their digital skills (Anckar et al., 2023; Le & Pole, 2022).

Kalyvaki et al. (2023) found Gen Z graduates entering the Agribusiness workforce needed improvement in their virtual critical thinking and communication skills. Findings also revealed that HR professionals in the Agribusiness field place a higher significance on Gen Z employees' emotional intelligence and interpersonal skills to determine organizational fit (Kalyvaki et al., 2023). A multimethod study on the Digital Job Onboarding project in Austria,

Cyprus, Czech Republic, Finland, and Italy on unemployed Gen Zers found that the 233-sample lacked digital skills in computer program and PC software usage, understanding how to use social media in a professional setting, and navigating the internet safely along with cybersecurity risk (Anckar et al., 2023).

The Dell Technologies Digital Transformation Index Report (2022) resulted in 56% of the 15,105 global Gen Z full-time employees reporting that their college taught them very basic to no digital literacy skills. Though 40% of Dell's (2022) Gen Z employees who were surveyed concluded that upskilling their digital literacy skills is the key to future career opportunities, 37% admitted that their technology skillset was not enough for their chosen career path. The LaSalle Employment Agency Firm conducted the LaSalle Network report in March 2022 on 2,500 graduates entering the workforce, finding that 48% felt underprepared in the technical skills they needed to enter the workforce. Gen Z employees feel that higher education institutions and businesses need to build long-term partnerships in order to solve the digital literacy skills gap (Craig, 2019; Dell, 2022; Demopoulos, 2023).

Since technology is considered the first language of Gen Z, HRD practitioners should apply Virtual HRD training and development platforms to the 21st century work environment (Desai & Lele, 2017; Kalyvaki et al., 2023). Although Gen Z employees are the most digitally literate generation of the multigenerational workforce (Dimock, 2019), there is an apparent lack of digital literacy skills that affects their performance in the workplace setting (Deluliis & Saylor, 2021). Barboutidis and Stiakakis (2023) conducted a study on digital competence finding that Gen Z participants scored lower on communication and collaboration due to their dependency on mobile chatting apps and direct messaging in social networks. Researchers also found a lack of netiquette, and poor management of their digital identity (Barboutidis & Stiakakis, 2023). Failure

to meet Gen Z's workplace needs will result in a costly turnover and the inability to recruit or retain Gen Z employees (Acheampong; 2019; Tootle, 2020).

Given the research studies on the characteristics of Gen Z high school and college students, when it comes to the expectations of Gen Z roles in the workforce and work culture, there is still a lack of empirical research on Gen Z employees and their digital literacy skills in the workforce (Bickle et al., 2019; Schroth, 2019). Overlooking this gap in the research will affect HR and HRD practitioners, scholars, and practitioners in the 21st century workforce with respect to the theoretical and practical applications of Virtual HRD for Gen Z.

Gen Z Digital Literacy Reskilling Strategies. Gen Zers understood the need to reskill their digital literacy skills as essential to their career advancement (Dell, 2022). Gen Zers preferred to use emergent technologies in interactive new ways while developing communication, analytical, and critical thinking skills; employers will need to design virtual learning experiences for mobile devices (Le & Pole, 2022; Szymkowiak et al., 2021). The Cumberland Lodge Report on digital inclusion in the U.K. suggested shifting Gen Zers to a new skill, digital resilience (Elahi, 2020, p. 51). Elahi (2020) defined digital resilience as "digital competency, combined with social and emotional literacy required to manage online risks" such as cybersecurity privacy and safety (p. 51). Le and Pole (2022) suggested cultivating a cross-dimensional approach to the reskilling of Gen Zers' digital literacy skills by using a variety of technologies (i.e., social media platforms, creating infographics for presentation purposes, content creation for podcasts, and content creation and writing for video production and website design).

To help Gen Z grow within the organization, employers need to go beyond LMS (Kalyvaki et al., 2023; Le & Pole, 2022), and embrace new and emerging workplace trends such

as utilizing TikTok and other social media platforms as an employee training and development tool (Korn Ferry, 2023). Meeting Gen Z where they make workplace connections and find career advice will allow employers to develop and attract Gen Z talent (Korn Ferry, 2023). Reskilling strategies should include virtual training and development (i.e., online training, online sessions, online workshops) that will nurture Gen Zers' soft skill development (Kalyvaki et al., 2023). Virtual HRD is considered suitable for developing Gen Z employees' digital literacy skills in both formal and informal digital developmental and training contexts (Bennett & McWhorter, 2022; Tung, 2020).

Framework for Gen Z's Digital Literacy

Paul Gilster first discussed digital literacy in 1997 when he authored two books that year, *Digital Literacy* and *The Web Navigator* (Pool, 1997). It was during that time that Gilster defined digital literacy as the "ability to understand and use information in multiple formats from a wide range of courses when it is presented via computers" (Bawden, 2001; cf. Glister, 1997, p. 1). Foundational authors in the digital literacy scholarship credit former President George W. Bush with the push in digital literacy, with his "No Child Left Behind" legislation that focused on enhancing education for all students regardless of "race, ethnicity, gender, family income, geographic location, or disability," ensuring increased digital literacy of American middle school students by the end of their 8th grade year (Bawden, 2008; Martin, 2006; U.S. Department of Education, 2005). Bawden (2008) expanded the digital literacy framework to include new literacies stemming from emergent technologies at the time to include social networking, short message service (SMS), multimedia messaging service (MMS), and mobile technologies (i.e., smartphones and tablets).

Eshet-Alkalai (2004) then proposed a new digital literacy conceptual framework that expanded beyond Glister (1997) and Martin (2005; 2006) to include photo-visual literacy (i.e., requiring vision to think), reproduction literacy (i.e., duplication of images), branching literacy (i.e., concept maps, abstract representations), information literacy (i.e., web-searching), and socio-emotional literacy (i.e., online socializing, online banking, online purchasing; Ng, 2012). Eshet-Alkalai (2012) elevated his digital literacy conceptual framework, moving from literacies to an updated skills-based theoretical framework, adding a sixth skill, real-time thinking (i.e., decision making in real-time) to his original digital literacy framework.

Martin (2005; 2006) noted the changes made in digital literacy introducing new literacies into the conceptual framework including information and communications technology (ICT) literacy (i.e., access, manage, integrate, evaluate, create), technology literacy, information literacy (i.e., information technology skills, basic library search skills), media literacy (i.e., critical thinking and production skills), and visual literacy (i.e., development of vision-competencies). In addition to adding information and communications technology (ICT) literacy to the digital literacy umbrella, Martin and Grudziecki (2006) developed three levels of digital literacy: Level I: Digital Competence (i.e., skills, concepts, approaches, attitudes), Level II: Digital Usage (i.e., professional application, discipline application), and Level III: Digital Transformation (i.e., innovation, creativity; Reddy et al., 2020). Martin (2008) then followed up with an addition to his prior definition of digital literacy that included the ability to plan, execute, and evaluate real-life situations (Martin, 2008; Reddy & Sharma, 2020).

Ng (2012) aligned the digital literacy framework from the Eshet-Alklai (2004), and the New London Group's (1996), into three different dimensions focusing on the technical dimension (i.e., operational skill, internet skill), cognitive dimension (i.e., critical thinking and

evaluation), and the social-emotional dimension (i.e., understanding netiquette, internet safety, and privacy). Ng (2012) used his digital literacy model to study 51 millennial college students, referred to as the digital natives of the time, investigating their use of information and communications technologies (ICT). Loewus (2016) attempted to expand the digital literacy framework by adding technical and non-technical social media digital skills (i.e., locating and consuming digital content, creating digital content, communicating or sharing digital content). Reddy et al. (2023) proposed a new digital literacy framework and developed a digital literacy tool grounded in Martin and Grudziecki's (2006) six digital literacies (i.e., communication, computer, information, media, technology, visual), with the goal of validating their tool to help close the digital skills gap in digital inequities (Reddy et al., 2021; 2023).

Information and Communications Technology (ICT). Information and communications technology (ICT) literacy is the knowledge, operational and technical skills needed to effectively use hardware and software components (Ferrari, 2012). ICT literacy has been described as the technical development side of digital literacy (Ferrari, 2012). ICT is cross-disciplinary in that it has been used in the K-12 setting (Ferrari, 2012), the higher education setting (Blau et al., 2020; Sharma et al., 2019), and for employee career development (van Laar et al., 2022). ICT literacy is the "use of digital technology, communication tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge-based society" (Reddy et al., 2020; cf. Lankshear & Knobel, 2008).

Digital Competence. In 2016, the digital literacy task-force for the American Library Association defined digital literacy as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical competency skills" (Loewus, 2016). Around the same time, the European Union

put out DigComp 2.0, the Digital Competencies for Citizens Framework, that is grounded in information communications and technology literacy, citing five competency areas (i.e., information and data literacy, communication and collaboration, digital content creation, safety, and problem solving; Carretero et al., 2017). The European Union's DigComp 2.1 was released in 2017 and followed up with eight proficiency levels and examples of complexity in tasks, autonomy, and cognitive domains (Carretero et al., 2017). Barboutudis and Stiakakis (2023) discuss the importance of digital literacy competence in their study but contend that it is encompassed by digital literacy and reinforced by digital skills.

Reddy et al. (2020) conducted an integrative literature review on digital literacy from the information and communications technology context. The authors refined the digital literacy definition to include information literacy, computer literacy, media literacy, communication literacy, and technology literacy. Blau et al. (2020) used Eshet-Alkalai's (2012) digital literacy skill-based theoretical framework and added self-regulation skills in their case study with 78 educational technology graduate students in their academic course. Oberlander et al. (2020) conducted a systemic literature review of digital competencies in the workplace which resulted in 25 dimensions of digital competencies from 28 peer review articles and qualitative interviews with 10 field experts. Oberlander et al. (2020) clustered the dimensions into the literature and the practice or application of the dimension.

Recently, Tinmaz et al. (2022) conducted a systematic review of 43 journal articles on digital literacy, digital skills, digital thinking, and digital competence; 35 of the 43 digital literacy papers used qualitative research methods (Tinmaz et al., 2022). Their results were broken down into categories, competency, and skills. They found that digital literacy, computer literacy, media literacy, and cultural literacy were the major literacy themes. The top digital

literacy skills were information literacy skills (i.e., evaluating information, using obtained information, legal use of information, finding information), information and communications technology skills (technical skills, attitude towards ICT, use of social media skills), communication skills (i.e., digital fluency, chat, text, email), and collaboration skills. The top digital competencies that were found included problem solving, critical thinking, safety, information processing, content creation, and communication.

Digital Literacy Skills. Though there has been an influx of literature on 21st century digital skills (van Laar et al., 2022; van Laar et al., 2020), Eshet-Alklai (2012) is regarded as one of the two most comprehensive digital literacy skills frameworks (see Table 2.1) in the literature (Silber-Varod et al., 2019). Therefore, I used Eshet-Alklai's (2012) digital literacy skills definition to inform my study. Eshet-Alklai's (2012) digital literacy skills set incorporates six digital literacy skills.

Table 2.1

Digital Literacy Skills Framework

Digital Literacy Skills	Definition of Skill
Photo-Visual Digital Skill	Requires the cognition and critical thinking skills to use "vision to think" (cf. Mullet & Sano, 1995).
Reproduction Digital Skill	Requires the cognition and ability to think in a non-linear manner, to interpret, and create new meaning from pre-existing materials (i.e., graphics, music, text).
Branching Digital Skill	Requires users to search for and construct knowledge freely from independent pieces of information.
Information Digital Skill	Requires the use of critical thinking and information processing skills to filter through the overwhelming amount of information on the web, in the media, and on social media.
Social-Emotional Digital Skill	Requires the sociological and emotional skills to communicate appropriately.

Real-Time Thinking Digital Skill	Requires high speed processing and ability to problem-solve and make key decisions quickly in the spur of the moment.

Photo-visual digital skills. This skill requires the cognition and critical thinking skills to use "vision to think" (cf. Mullet & Sano, 1995). This skill helps users read and understand instructions, directions, and messages present in the photo, image, or graphic. This skill utilizes the ability to use "strong intuitive-associate thinking" (Eshet-Alklai, 2012, p. 269) when using new software, an app, or a web platform. Users can decipher how to navigate the user interface through their understanding of icons, symbols, or key language on the screen. Basic skills include problem solving, gathering new knowledge from an image and critically thinking through the next steps such as the menu of a video game, the profile screen on Amazon's Fire TV stick, the beginners screen on an app, or the first page of online software; a user practices continuous intuitive thinking and thinks ahead about what the next level of directions will be (Ng, 2012; Oberlander et al., 2020).

Reproduction digital skills. This skill requires the cognition and ability to think in a non-linear manner, to interpret, and create new meaning from pre-existing materials (i.e., graphics, music, text). Users can use this skill to think in a "good, synthetical, and multidimensional" (Eshet-Alklai, 2012, p. 269) innovative manner without violating ethics or plagiarizing copyrighted or trademarked materials by assigning new meaning, paraphrasing, reiterating, reorganizing, and rearranging materials. Basic skills include being knowledgeable about the ethical and legal issues associated with plagiarism, copyright infringement, intellectual property, and online insider trading; knowing how to create something new from existing images, videos, podcasts, music, text, or other content reviewed online; understanding the different types of licensing that apply to digital content usage; and understanding what changes can and cannot be

made to existing content that others have produced (Miliou & Angeli, 2021; Oberlander et al., 2020).

Branching digital skills. This skill requires users to search for and construct knowledge freely from independent pieces of information. Also known as hypermedia skills, the user utilizes their multidimensional spatial skills and are not disoriented or overwhelmed by hypermedia environments (i.e., the Internet, company intranets, multiple links on a webpage, social media platforms). Users have "good metaphoric thinking and the ability to create mental models, concept maps, and other forms of abstract representation" (Eshet-Alklai, 2012, p. 270). Basic skills include critically searching, analyzing, and abstractly thinking through the usage of information found on social and professional networking sites (i.e., LinkedIn, Facebook, Instagram, Tumblr, Snapchat, Pinterest); micro-blogging sites (i.e., Twitter); blogs and other online journals and diaries; online bulletin boards and chatrooms (i.e., Reddit); online encyclopedias (i.e., Wikipedia); video and photo-sharing websites (i.e., TikTok, YouTube, Flickr); podcasts; employee review sites (i.e., Glassdoor, Vault); messaging apps (i.e., WhatsApp, Discord, GroupMe, WeChat); mobile or PC games; personal websites; and Google Business, Yelp, or business review location services (Silber-Varod et al., 2019).

Information digital skills. This skill requires the use of critical thinking and information processing skills to filter through the overwhelming amount of information on the web, in the media, and on social media. Users must critically analyze and evaluate the legitimacy of the information they are viewing. Users subjectively use critical thinking to filter false, fake, biased, and irrelevant misinformation to make an educated, informed decision (Puig et al., 2021). Users "search, identify, and assess information effectively for the purpose of research and content learning" (Ng, 2012, p. 1068). Basic skills include understanding the best keywords to use for

online searches; logically verifying the source of the information before using it (i.e., taking career advice from a TikTok influencer); knowing about the key features of software and online platforms; understanding how to efficiently navigate the internet, search engines, and social media and professional networking sites; and critically evaluating the information found before using it for work purposes (Ng, 2012; Sulzer, 2018).

Social-emotional digital skills. This skill requires the sociological and emotional skills to communicate appropriately. Users need to be able to share informal and formal knowledge, communicate their emotions in a non-offensive manner, while identifying deceptive actors, catfishers, and scammers. Users are virtual collaborators who understand how to network, "behave appropriately in online communities," and protect themselves from harm (Ng, 2012, p. 1068). Basic skills include functional social networking (i.e., demonstrating respect in online communities, not complaining about coworkers or the workplace); understanding how to share personal opinions without negatively affecting organizational culture (i.e., endorsements of political, religious, or controversial candidates, trending societal or workplace topics, following social media influencers); knowing how to engage on virtual meeting platforms (i.e., Zoom, Teams, WebEx); and knowing what and when to share content pertaining to employment location or job responsibilities (i.e., sharing information about personal inappropriate work behavior, posting information about supervisors, coworkers, or peers, and sharing confidential information about the organization or online insider trading; Miliou & Angeli, 2021; Ng, 2012).

Real-time thinking digital skills. The skill requires high speed processing and ability to problem-solve and make key decisions quickly on the spur of the moment. Users can multitask, stay on task, and respond to feedback at a moment's notice, while processing and synchronizing multimedia (i.e., video, images, text, podcast, social media, email) into one coherent thought.

Basic skills include being able to connect devices (ear pods, headphones, speakers) to a PC, Mac, tablet, or smartphone; knowing how to use all employer hardware and software (i.e., fax machine, printer, computer, phone, intranet, Microsoft Windows, employer software); how to adjust privacy settings; when to turn off Wi-Fi settings when in public places to reduce cybersecurity risk (i.e., identity theft, stolen work credentials), or decipher what information from work is private and what can be shared online (i.e., confidential information, intellectual property, financial disclosures); and procurement of products from reputable online companies (Ng, 2012; Sulzer, 2018).

Implications for the Study

This review of the literature has implications that include the impact of Covid-19 on the social presence and digital literacy of Gen Z, the importance of the technology used to conduct qualitative research with the Gen Z cohort, the significance of the versatility of Virtual HRD for HRD practitioners and scholars, the business case for more empirical research on the Gen Z digital literacy gap, and the empirical research that will be needed for Gen Z supervisors of Gen Z employees.

First, Covid-19 was the most significant factor and implication from the literature review informing the study due to its impact on the social presence and digital literacy of Gen Zers. This is especially so due to the introduction of the pre-Covid Gen Z cohort and post-Covid Gen Z cohort. This new perspective on Gen Z adds depth to the methodological approach influencing the types of interview questions that should be asked to gather rich qualitative data for this new phenomenon in generational workforce development.

Second, the Gen Z cohorts' vast technical knowledge has implications for the technology used to conduct qualitative research in this study. Gen Z's self-directed adult learning in virtual

learning environments is multifaceted and aligns with their multimedia communication preferences. Social media and multimedia virtual learning have implications for the accessibility and type of virtual platforms, streaming services, and app subscriptions that Gen Zers use for their self-directed learning. This Virtual HRD concept has direct implications for the methods used in the present study, for instance, virtual interviewing and virtual qualitative data collection. My methodology thus consists of a multifaceted approach utilizing a combination of Virtual HRD media such as social media and virtual meeting platforms.

Third, the significance of the evolution of Virtual HRD in the HRD profession has implications for HRD practitioners and scholars. Since Gen Z employees value innovation, HRD practitioners and scholars will need to take these considerations into account when determining appropriate Virtual HRD organizational strategies for training and development initiatives, and performance outcomes for Gen Z employee recruitment, engagement, and retention. Relying solely on virtual learning management systems (LMS) will negatively affect organizations looking to attract and retain their Gen Z workforce. Because the Gen Z employee would instead YouTube a problem, X (the technology formerly known as Twitter) a solution, or Snapchat a friend to work through conflict resolution, HRD practitioners and scholars will need to continuously upskill their digital capacity to include these types of social media virtual learning media as professional training and development tools. HRD professional upskilling is continuously needed due to the expansion of the use of technology in the HRD field (i.e., LMS, HRIS, T&D apps and platforms, recruitment platforms, employee engagement platforms, KaHoot!, Canva).

Fourth, the contribution of corporate technical reports, whitelist papers, and business magazine articles further supports the argument for more empirical research on the Gen Z digital

literacy skills gap that exists amongst Gen Z employees in the workforce. There will need to be a concerted effort between public and private corporations, public and private universities, and colleges to improve the digital literacy skills of Gen Z employees while closing the digital literacy skills gaps currently existing in the workforce. This push from the business industry presents HR and HRD scholars and practitioners with the opportunity to develop operational and strategic changes in their organizations with the application of the theoretical framework and best practices of Virtual HRD for Gen Z employees.

Fifth, there are implication for future research opportunities that are multidisciplinary or cross-disciplinary. This will be necessary to keep up with newer technology, tools, and trends by advancing Virtual HRD into the 21st century workplace. Cross-disciplinary learning with computer, virtual, and digital related disciplines (i.e., information technology, information security) boosts the visibility of Virtual HRD, putting it at the forefront of research and scholarship in other disciplines, further grounding the theoretical framework of Virtual HRD.

Sixth, the lack of adequate assessment and proper evaluation of Virtual HRD will be very costly to organizations. Not having the appropriate technology in place will cost the organization talent and deteriorates the organizational culture. Constant evaluation of Virtual HRD processes and procedures will build a more proficient and satisfied workforce with higher morale. Trying to find the best method to train and develop Gen Z employees will be critical to the recruitment, retention, and satisfaction of the Gen Z workforce.

Last, the absence of empirical research informs this study and has implications for the research needed for supervisors of Gen Z employees. Though HRD scholars have cited the benefits of Virtual HRD for the Gen Z workforce, they will need to move quickly to establish best practices, HR processes, company policies, and organizational expectations for supervisors

to demonstrate to Gen Z employees how to use Virtual HRD tools in the workplace appropriately. Under that same Virtual HRD umbrella, other tools such as virtual interviewing, mentoring, coaching, AI and VR training, and gamification within professional development will need to be brought to the forefront to help reskill the digital literacy of the Gen Z workforce. Not paying close attention to this area will result in negative workplace consequences for Gen Z employees who enter the workforce with low digital literacy capacity.

Summary of Chapter 2

The literature review highlighted key findings in the studies found on Virtual HRD, Generation Z and Gen Z's digital literacy in the workplace. Virtual HRD's theoretical underpinnings in adult learning and virtual learning environments has expanded in the usage of the theoretical framework in current workplace literature. Recent studies focused on using the metaverse for training and development (Hajjami & Park, 2023), examined virtual learning and development pedagogy (Gubbins et al., 2023), and examined the social-emotional work-life boundaries for telecommuters (Michaud & Conceicao, 2023). Virtual HRD-related post-Covid research has shown the effects of Covid-19 on Gen Z (Lee et al., 2021; Mitchell, 2021). Importantly, the Virtual HRD study of Ausburn et al. (2019) on Gen Z found that as digital natives they did not see a difference between the virtual world and real-life and viewed both virtual experiences and face-to-face experiences as equivalent. McWhorter's (2023) analysis of 36 peer-reviewed articles found that one third emphasized the importance for upskilling and reskilling the workforce, "therefore having knowledge and skills around Virtual HRD is beneficial for staying afloat and thriving" (McWhorter, 2023, p. 585).

Gen Z literature primarily focused on Gen Z undergraduate and graduate student topics such as soft skills, social cognitive theory, and the usage of virtual reality, apart from

Hollandsworth's (2022) Virtual HRD Gen Z employee study that focused on work engagement during Covid-19. Due to the lack of empirical studies on Gen Z attributes in the workplace setting (Migliore et al., 2019), relevant HRD dissertation studies focused on Virtual HRD topics such as workforce development through employee virtual learning and development (Taylor, 2023), the use of AI technology among Gen Z students (Graczyk-Kucharska et al., 2022), and virtual training and development for Gen X participants (Viltz-Emerson, 2021).

The concept of pre-Covid Gen Z and post-Covid Gen Z was introduced in the literature review of the definition, characteristics, and perspective of Gen Z students and Gen Z employees in the higher education setting. Research indicated that pre-Covid Gen Z values included innovation (technology), gamification (rewards systems), collaboration (virtual social connection), customization (work-life balance), and independence (Barhate & Dirani, 2022), requiring an innovative instructional technology approach to their reskilling (Wheatley & Hibbler-Britt, 2019). Post-Covid Gen Z workers value online engagement, multiple virtual communication tools, and virtual socialization as they have felt the implications of being isolated during Covid-19 (Selingo, 2021).

Virtual learning scholars in HEIs noted that Gen Z employees in the higher education setting preferred departmental virtual training and development (i.e., YouTube, TED Talks) due to the nature of the just-in-time, 24/7/365 accessibility and technology-based learning (Szymkowiak et al., 2021). Higher education academic scholars noted that virtual learning environments, such as Virtual HRD, offered the best option in reskilling to narrow the digital literacy skills gap within higher education, which provided Gen Z workers with an environment where unlearning and reskilling can take place without negative consequences (Rosendale & Wilkie, 2020).

Due to the lack of empirical peer-reviewed articles, books, and book chapters on Gen Z's digital literacy, corporations published their own reports and white papers on company websites and in business magazines (Demopoulos, 2023). Though Gen Z employees were found to be tech savvy in their virtual communication and information digital literacy skills (Berger, 2023), research indicated that members of Gen Z had poor problem-solving, analytical, and decision-making digital literacy skills (Schroth, 2019). Gen Z employees were also found to have short attention spans that contributed to interpersonal deficits in their digital literacy skills (Deluliis & Saylor, 2021). Scholars also noted Gen Zs confidence in their digital literacy skills contrary to their employers who felt that they are un- and underprepared which included their lack of critical thinking digital skills (Kalyvaki et al., 2023).

The evolution of the digital literacy framework from 1997 to the present day included the addition of information and communication technology (ICT), understanding of digital competence in the context of digital literacy, and the foundational digital literacy skills framework (i.e., photo-visual, reproduction, branching, information, social-emotional, real-time thinking) of Eshet-Alklai's (2004; 2012) and Ng's (2012) that provided the framework for my qualitative study and informed interview protocol questions on Gen Z's digital literacy skills in the workforce. I concluded this chapter with implications for my study.

Chapter 3: Method

The purpose of this study was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice. As this study was aimed at understanding participants' lived experiences in digital literacy in higher education, I used a basic qualitative study design in my inductive interpretative study (Merriam & Tisdell, 2016) to gain deeper understanding through purposeful sampling and a thematic analysis of the interview data. The following three questions guided my study:

- How do Gen Z employees in higher education experience digital literacy?
- What digital literacy skills gaps exist in Gen Z employees in higher education?
- What can higher education institutions do to close the digital literacy skills gaps for Gen Z employees entering the workforce?

Research Design

I used a basic qualitative study design to better understand the lived experiences of Gen Z employees and supervisors of Gen Z employees. I chose a basic qualitative research design as this inductive approach required deeper understanding of the meaning of participants' first-hand experiences (Merriam & Tisdell, 2016). The basic qualitative research design also supported the interview method and thematic data analysis (Lester et al., 2020). I chose semi-structured interviews to allow for an unbiased, open, and transparent interview process for themes to emerge during my data analysis process.

Participants

I used purposive sampling to recruit participants who were identified as Gen Z employees and supervisors of Gen Z employees. I set up the selection criteria for Gen Z participants, including the following: (a) they entered the workforce beginning 2017; (b) they have worked in

student affairs divisions of higher education institutions for at least one year; and (c) they were 22-26 years old. I followed the selection criteria and interviewed 19 participants (see Table 4.2). I ensured anonymity by using participant code names for the 12 Gen Z employees and seven supervisors of Gen Z employees who work in higher education institutions. Gen Z interview participants were born on or after 1997 and entered the workforce in 2017 or later and worked in student affairs divisions of higher education institutions. Supervisors of Gen Z employees were categorized as Baby Boomers, Generation Xers, or Millennials (Generation Y) who worked in student affairs divisions of higher education institutions.

I recruited Gen Z employees and supervisors of Gen Z employees from professional associations in the higher education network of student affairs practitioners. Gen Z employees worked for a two-year or four-year public or private institution. Gen Z employees and supervisors of Gen Z employees were members of professional associations in the student affairs profession, including ACUI (Association of College Unions International), NASPA (National Association of Student Personnel Administrators), and NIRSA (National Intramural-Recreational Sports Association).

Participant demographics varied with all but one Gen Z employee participant who introduced themselves with their name and gender pronouns at the beginning of the interview. Gen Z employees and supervisors of Gen Z employees were diverse in race, ethnicity, and institutional backgrounds with various departments, regions, and institution types amongst participants.

All participants were recruited from either a Google Workspace-licensed campus (i.e., campus contractual agreement to use Gmail, Drive, Docs, Sheets, Slides, etc.) or a Microsoft-licensed campus, except for one participant: four participants worked on Google-licensed

campuses, 14 participants worked on Microsoft-licensed campuses, while one participant worked on a split campus where students used the Google Workspace product and faculty and staff used the Microsoft line of products.

Supervisors of Gen Z employees had between 4 and 25 years of work experience in higher education institutions while Gen Z employees had between 6 months and 3 and a half years of work experience (see Table 3.1). Fourteen participants had a master's degree in higher education, student affairs administration, or a higher ed/student affairs-related degree.

Table 3.1

Interview Participants

Participant Code Name	Years of Work Experience	Generational Cohort	Gender Pronouns
ES1	15	Millennial (1981-1995)	He/Him/His
ES2	15	Millennial (1981-1995)	He/Him/His
ES3	9	Millennial (1981-1995)	She/Her/Hers
ES4	18	Generation X (1964-1980)	She/Her/Hers
ES5	25	Generation X (1964-1980)	She/Her/Hers
ES6	5	Millennial (1981-1995)	She/Her/Hers
ES7	4	Millennial (1981-1995)	He/Him/His
E1	1.5	Generation Z (1996-2012)	She/Her/Hers
E2	3.5	Generation Z (1996-2012)	She/Her/Hers
E3	1	Generation Z (1996-2012)	She/Her/Hers
E4	0.67	Generation Z (1996-2012)	She/Her/Hers
E5	1	Generation Z (1996-2012)	She/Her/Hers
E6	1.5	Generation Z (1996-2012)	She/Her/Hers

E7	0.67	Generation Z (1996-2012)	He/Him/His
E8	2	Generation Z (1996-2012)	He/Him/His
E9	0.5	Generation Z (1996-2012)	She/Her/Hers
E10	2	Generation Z (1996-2012)	She/Her/Hers
E11	0.5	Generation Z (1996-2012)	She/Her/Hers
E12	3.5	Generation Z (1996-2012)	She/Her/Hers

Note: ES is a Supervisor of Gen Z Employees and E is a Gen Z Employee.

Participants varied from across the United States of America with representation from five different geographic regions (i.e., Midwest, Northeast, Southwest, Southeast, West); they represented a diverse perspective of views, backgrounds, and beliefs (see Table 3.1). Most participants worked in front-facing roles that required them to be in the office at least 50% of the time or more of their work week. About half of the Gen Z participants had flexible work schedules and had the option to work from home depending on their seasonal workload. None of the participants in this study were classified as a remote employee.

Participants' affiliated institutional types varied (see Table 3.2); one participant worked at a historically Black college and university (HBCU), one worked at an international/global institution, five worked at a Hispanic serving institution (HSI), and the remaining 12 participants worked at predominately White institutions (PWI; a college or university where 50% of the students and faculty are White) (Bourke, 2016). One participant worked for a two-year public college, three participants worked for a four-year private institution, while the majority worked for traditional four-year public institutions. It is important to note that though many of the institutions were classified as four-year public institutions, there were four that were technical or technology-related institutions.

Table 3.2

Participant Affiliations

Department Area or College		N=19
	Admissions	1
	Career Development	3
	College of Business	2
	Collegiate Recreation	2
	Residential Life	1
	Student Engagement	7
	Student Services	3
Institutional Demographic Served		
	Historically Black College & University (HBCU)	1
	Hispanic Serving Institution (HSI)	5
	International/Global Serving Institution	1
	Predominately White Institution (PWI)	12
Institutional Type		
	4-year Public Institution	15
	4-year Private Institution	3
	2-year Public Institution	1
Regional Location		
	Midwest	2
	Northeast	4
	Southeast	6
	Southwest	3
	West	4

Data Collection

I conducted semi-structured interviews with 19 interview participants (12 Gen Z employees and 7 supervisors of Gen Z employees) virtually via Zoom as it was convenient for participants. I conducted interviews with two groups of participants: (a) Gen Z employees in higher education institutions, and (b) supervisors of Gen Z employees in student affairs divisions of higher education institutions.

I developed two versions of an interview protocol for Gen Z employees and supervisors of Gen Z employees (see Appendix D). I used Eshet-Alklai (2012) and Ng (2012) to inform my list of interview questions. I adapted the interview questions from Eshet-Alklai (2012) and Ng (2012) based on the literature review of the framework for Gen Z's digital literacy skills. Interview questions included personal experiences, conversations with colleagues in student affairs departments, and discussions with supervisors. The interview questions were designed to gain insight about Gen Z employees' digital literacy experience now that they have transitioned into the workforce. For instance, a question for Gen Z employees was: "How do you navigate through issues related to web-based activities relating to cybersecurity, privacy, and safety?" or "When using a new technology are you able to look at the screen and know what to do next?"

As for supervisors of Gen Z employees, questions were designed for them to share examples and ideas about their experiences supervising Gen Z employees in the workforce. Their questions included: "In your opinion, how can we improve digital literacy for Gen Z as they are entering the workforce, and what can we do differently that will prepare them for success?" and "Looking ahead, how should we design and evaluate digital literacy skill performance in student affairs divisions at higher education institutions for career success?"

I recorded all one-on-one virtual interviews via Zoom and transcribed the interview data using the TranscribeMe! transcription service. I conducted member checks of transcripts with interview participants to ensure validity of the study. I asked participants to review their transcript and let me know if there were any errors in their transcript.

Before collecting data, I obtained approval from The University of Texas at Tyler Institutional Review Board (IRB). To reach a diverse pool of student affairs practitioners, I contacted the national offices and recruited participants from professional associations in student

affairs including ACUI, NASPA, and NIRSA. After I secured member listservs (i.e., email addresses) with the professional associations, I sent a recruitment email which included the study purpose and the step-by-step process of how participants could sign up for an hour interview.

Data Analysis

I used a thematic analysis of Lester et al. (2020) to analyze the interview data, following their approach to seven phases: (1) preparing and organizing the data for analysis, (2) transcribing the data, (3) becoming familiar with the data, (4) memoing the data, (5) coding the data, (6) moving from codes to categories and categories to themes, and (7) making the analytic process transparent. I used MAXQDA, qualitative data analysis software, to analyze the interview data, as MAXQDA provided researchers with better organization for memoing, customization of color coding, and better user-friendly auto coding features compared to other qualitative data analysis software.

I worked through the seven phases of conducting a thematic analysis as outlined by Lester et al. (2020). I first reviewed and immersed myself in the data to appropriately organize it. I organized the data according to the source, date, and participant code name. I saved all data on the UT Tyler Microsoft OneDrive 365 iCloud platform and backed up the data on my iCloud iOS system. I then transcribed all Zoom audio recordings from MP4 files using the TranscribeMe! platform and converted them to Microsoft Word files.

To memo the data, I put Microsoft Word transcripts into MAXQDA. Memoing the data refined the data for potential themes within the data set. I used MAXQDA to link memos of participant statements that were relevant to the potential categories and themes that emerged during the thematic analysis process. I strategically layered the coding process beginning with analyzing the memoing statements, connected the statements by defining verbiage and assigned

additional coding during this process. As the individual codes were placed into similar categories, refined, and aligned into related categories, definitions and theme names began to emerge. Themes were named according to their alignment (i.e., similarities, differences, or relationships) with the theoretical framework of my study.

In the final phase of the thematic analysis process, I applied transparency strategies and created an audit trail in the production of the final report. I created an analytic map of the thematic analysis process to help other researchers understand my decision-making process and used MAXQDA to create a table of the coding frequencies.

Validity and Reliability

To ensure the validity and reliability of my study, I asked for a subject matter expert's review of the interview protocol. I conducted member-checking with the interview participants. I also employed two trained Ph.D. researchers in different disciplines (HRD and Communications) to validate the data.

Validity

To ensure validity, I conducted member checks of the transcripts with interview participants (Merriam & Tisdell, 2016). I emailed participants the draft study findings for their review and followed up with participants to check if there are any errors. To further address validity, I employed a trained qualitative Ph.D. researcher who is a communications professor who currently works at a higher education institution and has obtained their Ph.D. from the University of Memphis in Communications. This trained qualitative Ph.D. researcher provided an external reviewer lens needed to ensure accuracy of my study's findings (Creswell, 2016).

Reliability

To ensure reliability, I asked two dissertation committee members, Dr. Cho and Dr. McWhorter, to review the interview protocol. To further address reliability, I also employed a trained quantitative Ph.D. researcher who has worked in traditional higher education, medical school education, and has obtained their Ph.D. in HRD from UT Tyler. Both Ph.D. researchers' roles were to analyze the data (i.e., extract themes, organize themes, verify the data collected), and to validate the data.

Researcher Positionality

Though, I currently work in the Human Resources Department as the Diversity, Equity, and Inclusion Officer for a mid-sized financial institution in the East Texas region, I previously worked in higher education, was a member of student affairs professional associations (i.e., ACUI, NASPA, and NIRSA), and applied the knowledge obtained from my experiences in my role as the research instrument. Because the COVID-19 global pandemic drastically affected higher education institutions, as a professional staff member in the Division of Student Affairs, I applied the knowledge gained from my coursework in the UT Tyler Human Resource Development Ph.D. program and transitioned my student employees to a Virtual HRD remote workplace in a week. During this time, I taught 40 Gen Z employees to sign digital documents, to use the Microsoft Office 365 Suite, and to understand Zoom functionality and virtual meeting etiquette. I built my team's digital literacy through virtual remote work (i.e., daily reports, weekly Microsoft Teams and Zoom meetings, virtual learning development).

This experience shaped my view on Gen Z digital literacy, the virtual reskilling of Gen Z digital literacy, and the virtual learning environment that is best for Gen Z employees. I openly acknowledged and accounted for my personal bias while I conducted research. I kept written

memos and reflective notes during the research process to ensure researcher objectivity and sufficient reflexivity during the research process. I avoided choosing participants from the higher education institutions for which I worked to ensure the anonymity of the participants, to avoid jeopardizing the data collection, and to ensure accurate information in the research process.

Summary of Chapter 3

In this chapter, I presented the purpose of the study, research questions that guided the study, and the overview of the research design. I also discussed the selection of the research participants, the role of the researcher, and the approach to the data collection and data analysis. I provided an in-depth review of data analysis that focused on the seven phases of conducting a thematic analysis as outlined by Lester et al. (2020). I concluded the chapter with my researcher positionality as it related to the study.

Chapter 4: Findings

In this dissertation study, I examined Gen Z employees' lived experiences in digital literacy in higher education institutions in their own words. The following three research questions guided my study: How do Gen Z employees in higher education experience digital literacy? What digital literacy skills gaps exist in Gen Z employees in higher education? And what can higher education institutions do to close the digital literacy gap for Gen Z employees entering the workforce?

To answer these three questions, I conducted semi-structured interviews with 19 participants (12 Gen Z employees and 7 supervisors of Gen Z employees) and presented five major themes identified from an analysis of the interview data using a thematic analysis of Lester et al. (2020) (see Table 4.1): (1) experiencing digital literacy daily, (2) preferred technology, (3) workplace communication, (4) Gen Z skills gap, and (5) topics for future virtual training. I conclude this chapter with a summary of the findings.

Table 4.1

Major Themes and Subthemes

Major Themes	Subthemes	Verbatim Statements	Frequency
Experiencing Digital Literacy Daily	Emerging Technological Navigation	I'm self-taught. I didn't do any training for Microsoft. That's actually one thing that this school…they just kind of assume you know how to work Microsoft. We didn't receive any training on that. So that was just more thing I had to learn. So, I had to click around and find out what settings I preferred and how I wanted to set my files up (E11).	194
	Mutigenerational Workforce	I feel like there is a gap…I mean, yeah, that's why your research is so interesting because I do know a lot of older employees who are like, "I don't know anything." But then they'll just turn to any random Gen Z person and be like, "Can you teach me how to do this?" And I think perhaps we have come to the point where there needs to be more, not necessarily formal, but outright	68

		teaching of certain applications because there's just so much technology now (E5).	
	Information Skills	So, I've seen a lot. I've had students pull sites for me and say, like, "Well, this person says I don't have to be licensed to be a counselor. I can just go be a counselor with my bachelor's, and I don't have to have a license or to get a master's." And I'm like, "Well, that is equivocally false. I don't know anywhere that's going to have you do that." So, I've also had to do a bit of showing them how to evaluate information from different platforms as well (E9).	60
Preferred Technology	Technology in Personal Life	I think it's just partially because all of my supervisors have always been on Facebook, so they're more, I don't know. I don't really know if I have a justification for that, but it has always felt that way. So, I feel like I add my supervisors on Facebook. From all my previous jobs, I have all of them on Facebook. But I don't necessarily follow them all on Instagram, I think that's also partially what I'm posting on Instagram is different versus what I'm posting on Facebook. I'm conscious of that because I have all my family on Facebook, but I don't have all my family on Instagram. So maybe that's also part of it. But I would also say, yeah, I would say that age does play a factor in who I follow on what platform and what that looks like (E7).	170
	Technology in the Workplace	This is different. I'm so used to working with Google because I did that all through undergrad in my first professional role, and now this institution's all Microsoft. So that was an adjustment of what…I mean, I know it's the same thing, but…Yeah. So, I think just some onboarding process of like, "Here's how we do…" even a video. "Here's what we use and how we do it," would be helpful (E2).	150
Workplace Communication	Virtual Communication	It is Teams all the way or OneDrive. So honestly, mostly Teams. We'll either create a Teams group, and like, "Okay, we're working on this project. We're going to make this Teams group. We're going to put all the files in the files if we have updates and stuff." A lot of them will have a group chat or will post on the main discussion area of Teams. Sometimes over email, like if I'm giving a presentation for a faculty's class or something, or if I'm working with the faculty--definitely if it's faculty. I think faculty is mostly email. Only then, I'll email files back and forth (E9).	167

	Non-Virtual Communication	I hate talking on the phone. Phone calls are the worst thing for me. Video calls are fine, but I prefer just texting. It's easier. I can reply when I have time. I have two jobs on top of school. So, I don't have time to sit and have a chat most of the time, so definitely texting or social media chats (E10).	83
	Virtual Work-Life Boundaries	I do not have my notifications on. And I did that so that I'm not constantly getting emails. And everyone on my team knows if we need to get in touch with each other faster, we'll text. And so that's how I would get a notification. And I guess maybe that's the difference between email and texting is like email, you might get a-- on a working day, I might need to wait like an hour to two hours for a response because people are checking emails in between meetings or in between whatever they're working on, but with text messages, it's usually 20 to 30 minutes response time. It's like much shorter (E4).	69
Gen Z Skills Gap	Critical Thinking	Students don't know how to use Google. They don't know how to look stuff up for themselves. They always are like, "Hey, how do you do this? How do you do this? How do you do this?" They have no rhyme or reason for trying it on their own first before asking questions. And I always learned, "Do it yourself first. If you can't figure it out, then ask questions." But these students-- no, they're not even going to give it a shot. I get them access to Outlook for their email through our office. They keep telling me they don't have access, but they don't even open the desktop application to log in to see if they have access (E10).	112
	Professionalism	I would say, honestly, reading, right? Because a lot of them don't – we have these audiobooks, or they just kind of like just look over the email and bypass things. Because I feel like that's kind of missed. And I don't know if that's an issue with K-12 education altogether. But a lot of Gen Z struggles to actually read through documents (ES6).	81
	Social Skills	I feel like there is a level of isolation with Gen Z, like they are less communicative. And not everybody that they're working with will be Gen Z. And so, they also need to know how to communicate to other generations and different populations, essentially. So, communication skills in whether it be written, verbal, via social	65

		media. Knowing how they can, they need to know how to speak to different groups (ES4).	
Topics for Future Virtual Training	Digital Literacy	So, I think just having a digital literacy info session or workshop or something like that every so often, going over Google Scholar or finding official YouTube accounts to answer certain questions, like finding statistical YouTube accounts that post information about how to solve different types of problems, or finding free versions of things like Chegg or Quizlet or whatever instead of paying money to use those types of services. I think students really just need to learn that they can find out things on their own, and they don't have to always rely on others to pretty much do the simple things for them. (E1).	33
	Evaluation of Digital Literacy Competency	Because I'm going to tell you that the folks that I go to work with and they've been working for 20, 30 years, they wouldn't even know how to incorporate the skills, the categories into an evaluation. They wouldn't even know what to look for. So, for one, that's a great question (ES3).	9

Note: ES is a Supervisor of Gen Z Employees and E is a Gen Z Employee.

Major Themes

From the 19 interviews (12 Gen Z employees and 7 supervisors of Gen Z employees), five major themes emerged from this study: (1) experiencing digital literacy daily, (2) preferred technology, (3) workplace communication, (4) Gen Z skills gap, and (5) topics for future virtual training. The major themes and sub-themes are presented with verbatim quotes from participants (Table 4.1).

The five major themes emerged during my thematic analysis using Lester et al. (2020) and were from the in-depth data collected from Gen Z employee participants and supervisor participants. As the themes emerged and were categorized and aligned, I noticed how they reflected the three research questions that guided my study. While I conducted the sixth (moving from codes to categories and categories to themes) and seventh (making the analytic process

transparent) phases of Lester et al. (2020), I organized the data collected into the five major themes according to how they answered the three research questions that guided my study.

The three themes: (1) experiencing digital literacy daily, (2) preferred technology, and (3) workplace communication were data collected primarily from Gen Z employees' participant interviews. The fourth theme, Gen Z skills gap, was from data collected from both Gen Z employee participants and supervisor participants. While the fifth theme, topics for future virtual training, was from data collected primarily from supervisor participants, which is why there are fewer narratives and frequencies. The data collected from the supervisor participants was more valid that Gen Z employe participants as most did not have a response or had an adverse response to the interview protocol question. Therefore, I omitted Gen Z employee participant responses that suggested digital literacy skills training options for other generational cohorts because they were not helpful to the context of my study.

Experiencing Digital Literacy Daily

The first theme described how Gen Z employees experienced digital literacy daily. Branching from the major theme, three sub-themes presented themselves. These sub-themes included: (1) Gen Zers' emerging technological navigation, (2) their perspective on the multigenerational workforce, and (3) how Gen Z employees used informational skills in their technological navigation.

All participants described Gen Z employees' use of digital literacy as being advanced in their everyday life. Gen Z employees rated themselves 9 out of 10 or 10 out of 10 because of the various digital tools that they used from the moment they woke up until the moment that they went to sleep (i.e., smart phone, smart watch, tablet, laptop, desktop). By the same token,

supervisor participants agreed with their level of proficiency in their use of digital literacy in their daily lives.

Gen Z participants also shared about their use of digital literacy in their personal lives, even sharing about the differences between their digital literacy usage and their spouses'. A Gen Z participant spoke of their understanding and learning curve about technology:

> Pretty quick. With stuff related to work that I'm using day in and day out, it's almost second nature, within a week or two of using it. Social media is even faster just because it's a digital age, and we're using social media all the time. Funny, I use technology way more in my day-to-day life than my husband does. And it is one of those things where he just is averse to it, even though we're the same age. But I use it so much more in my job that it's something that I take home with me, and I am constantly on my email or my social media. My husband doesn't even have social media. And so, we're just two very different people with the way we handle technology. But for me, learning stuff is very quick because I do handle it every day. For him, it takes him a little bit longer. He gets frustrated with it a little bit quicker (E6).

Emerging Technological Navigation

Through their navigation with emerging technologies, Gen Z participants discussed how they used data, with most participants preferring to use web-based cloud apps over apps on their desktop. They preferred to save documents on the cloud rather than on their network drive or hard drive because it was easier for them to share, process, and access information. Gen Z participants also discussed how they use digital literacy in their work with Gen Z college students. A supervisor used web-based platforms because:

> It's more accessible for students, and it's something that they're able to use and that they're accustomed to using because the students, they were born on computers and all those different things and stuff like that (ES6).

Because of their proficiency in their use of digital tools, supervisor participants who work with Gen Z students in higher education have had to increase their digital literacy to remain relevant in their career. A supervisor experienced this phenomenon recently in their career where

their administration challenged them to upskill their digital literacy to the expectation of Gen Z's technology standards.

> Yeah, I think in the work that I currently do and so forth, I'm always being asked and tasked to stay in the new trends and making sure that I'm reaching my Gen Z student members as well as also reaching my Gen Z staff at their level. And the next generation is all about digital. And so, I feel like I am at the point right now in my career where I'm being pushed to move to the next level when it comes to digital literacy and to continue to find new tools to really make sure I'm providing resources and also providing knowledge to my membership, my students, and my staff (ES1).

Gen Z participants described their trial-and-error method when they adapted to new software systems. If Gen Z employees did not understand how to use emerging technologies, they used the trial-and error method. They used Google to search how to do something, and occasionally pulled up a YouTube video, skipping ahead to the part that they felt was relevant.

Gen Z participants and supervisor participants both agreed that their digital literacy skills were top notch when it came to accessing, processing, and duplicating resources. Gen Z participants were good at clicking around and navigating to figure out how to use emerging technologies in a snap. They adapted to new software easily, because they grew up with Google Workspace in middle school and high school and had transitioned to Microsoft products in the workplace. Because of this, their go-to was Google, their method of storage was the cloud, and they lived in a web-based society where everything is constantly updated.

The Multigenerational Workforce

Many Gen Z participants reported feeling stuck in between two generations. Some felt comfortable discussing their supervisor's intermediate level of digital literacy, noting how they helped older generations navigate emerging technologies in the workplace which left them feeling like they were becoming their department's IT. Some Gen Z participants attributed the

lack of digital resources as the contributing factor to their lack of patience when it came to helping older generations navigate the use of emergent technology in their department.

Gen Z Between Two Generations. Because they worked so closely with Gen Z college students, multiple Gen Z participants reported feeling like they were stuck in between two generations. Many Gen Z employees identified themselves as post-millennials. A Gen Z participant expressed mixed emotions about this feeling…

> I think that's really valid because, I mean, sometimes I guess I sometimes will also isolate myself from the students who are in college right now/about to graduate. Even though technically, I'm Gen Z as well. It just feels like I'm not in the same generation sometimes. But also, there are other times like here where I'll say, "We, our generation." So, it's interesting to see how I flip that language as well, depending on the context I'm in (E8).

A Gen Z participant shared her frustration with her nephew and niece who have successfully navigated around the parental controls that she set to lock them out of adult content.

> My nephew is 11, and my niece is 7, and they're passing the parental controls and putting on the stuff. I'll take the remote away for something, but they figure out how to use the iPad to make it work on the TV. I'm like, "I don't even know how to do that. I tell them…I don't know how you're doing this" (E9).

Another Gen Z participant shared the same sentiment as participant E9, except they turned to their younger siblings for help.

> Even I, who has grown up with technology, don't know how to do some of it. And then I'm doing the same thing as the older generations. I'm turning to my younger siblings and being like, "Do you know how to do this?" Which is kind of weird because I'm also a Gen Z, but particularly pop culture references. I don't know (E5).

Becoming the Department IT. Gen Z employees liked helping their co-workers from other generations, however, they disliked becoming the department's IT or go-to digital consultant. Sometimes the lack of digital resources led to their lack of patience in the need to be efficient when they helped older generations keep up with emerging technologies. A Gen Z

participant who was the youngest person in their department, understood how to navigate the software usage departmental politics in their role.

> But at this point, I'm working with older folks now more than I was before. And most people over the age of 35 are asking me to not email them a link. They get really confused by links. Yeah, to an Excel wait not to Excel, to (Google) Sheets. They want me to download the Excel document and send them the Excel document. And I think a lot of that comes from trying to track who's changing what. I don't think they realize with Google Suite that you can do that. I think the logging in gets really confusing for them. So, if we're working on a document together and I send a link to a Google Doc because in my head, it's like, "Oh, then everybody can go in and see when people are editing and da-da-da-da-da." That's really confusing for them. Even SharePoint links, like my boss is better with it, but anyone else in my department, I just download the documents. So, agendas are another example. But I'll download the documents and then send it to them. And then they can open it up on their computer and click Track Changes. I hate Track Changes, but they love it. Like I hate it so much. I think some of the bugs that I used to hate about it have cleared up, which is good. But yeah, it's their preferred method for document sharing (E4).

One Gen Z participant took it upon themselves to figure out how to connect to the printer in their department and had become the go-to person.

> Oh, gosh. I always told myself I hated technology, and I was never good at it. But for some reason, I am the go-to IT person in our department. I don't understand why this happened. I looked up how to do things, and now I'm the only one that knows how to do it because I took the time to look it up. So now everyone just comes and asks me. Things like getting access to our office printer. You have to submit a ticket to get the approval, and then you have to go on our desktops to connect their account to it from that desktop. Very convoluted. I'm the only one that can do it. And then we also have our network drive for our specific department that our student workers and GAs and others need access to get to certain documents for our office. So, I'm now in charge of getting that access as well and showing them how to use it (E10).

Gen Z participants in the workforce felt like they were stuck between two generations when they are around Gen Z college students, their younger siblings or younger family members. Gen Z participants identified themselves as post-millennials, Millennials, or Gen Z depending on their setting in that moment. When they were with younger Gen Z they felt like post-millennials, but when they were with older generations, they felt like IT.

Information Skills

Gen Z participants felt that they had a handle on their information skills when it came to researching, fact-checking, and understanding cybersecurity and privacy online. A majority felt that they had a duty to teach Gen Z students entering the workforce what to look out for when navigating information on the internet. Gen Z participants described themselves as hyperconscious when it came to identity theft concerns, utilizing password managers, and identifying phishing emails. However, they were concerned with Gen Z students' lack of cybersecurity awareness. A Gen Z participant shared a recent incident where they had their credit card information stolen by a scammer.

> I mean, they only took $200 so it's not a lot of money. And so, I was able to quickly get that fixed. But I think, personally, I'm more hesitant with sharing information. I don't know if students now in higher education are. I've noticed that a lot of students like to put everything out on social media (E3).

Gen Z employees were also concerned with navigating misinformation and scams, checking reputable news sources, and fact checking TikTok. A Gen Z participant also discussed fact-checking social media with their Gen Z students.

> I feel like they go with what they see on TikTok. However, I know some students, they'll see it, and then they'll also look more into it and try to find other sources that are matching up with it. I do have a handful of students that believe everything from TikTok and it's frustrating and all that stuff. But I would say most of them know to investigate further. There is a few of them where I question (E6).

Gen Z participants were tech savvy in their ability to check research and disseminate information. Their information skills included navigating misinformation and scammers, TikTok fact-checking, and conducting a deep dive into political and reputable news sources. Their sensitivity to Gen Z students' data and social media awareness was a characteristic that they hoped to pass on to the younger Gen Z students whom they interacted with daily.

Preferred Technology

The major second theme focused on how Gen Z employees preferred to use technology. Gen Z participants' discussion points resulted in two sub-themes that focused on both their personal preferences when using technology and professional preferences in the workplace.

Technology in Personal Life

In their personal life, Gen Z participants preferred to use Apple products and Canva because of their user intuitive interface, which allowed them to design social media content from the palm of their hand, and they preferred to Google and use Google Workspace. They also used social media in different formats to keep up with different generations in their network, to stay informed, or to shop. A Gen Z participant used social media to keep up with friends and family but also prioritized their privacy rather than oversharing.

> Yeah. I think I've gotten better about it with time and, I guess, age. I keep a lot of my stuff on private. I also don't really post as much as I used to just because I feel like I get weird with people knowing what I'm up to, what I'm doing. People don't need to know all that information. Even for me, I sometimes get, not weirded out, but friends will ask me about random things like Instagram chat or even my partner. Him and his friends communicate mostly through Facebook Messenger. And I think it's so interesting to see the messaging capabilities of all the different social medias and how, I guess, Gen Z and even Gen Alpha, the next one, is utilizing that a lot for messaging versus emails or writing or stuff like that (E12).

Gen Z employees were using Facebook to keep up with family, mentors, and staff who they met along the way in their career and collegiate experience. Participant E9, like participant E7, used different social media platforms to stay connected to their network. A small group of Gen Z participants admitted to periodically going on binges on social media. A Gen Z participant admitted to being one of those Gen Zers who went on social media quarterly so that they could catch up on all of the latest trends.

> I do, but I go on TikTok and binge for like three hours and then don't touch it for four months. It's like a weird cycle. When I'm on it, I like it, but when I'm not on it, I don't need it (E6).

Gen Z participants were using Facebook to accommodate and keep up with other generations, ask for advice anonymously in the higher education chat rooms, and to shop. They preferred Instagram and LinkedIn to connect and message colleagues. Gen Z participants rarely mentioned Snapchat or X as their go-to social media platforms. Some discussed TikTok and Instagram for their daily fix of student affairs meme accounts.

Technology in the Workplace

Though Gen Z participants liked the different student engagement platforms and apps, some complained about having to use so many different accounts. Gen Z participants liked to have their accounts streamlined for efficiency: if they have to go to more than one place to do their job, it became a nuisance for them. A Gen Z participant, who was also a Master's student, felt overwhelmed with all the accounts that they had to keep up with to be successful in their role.

> I have three separate folders for essentially the same material, and two of them are shared with either my supervisors or the RAs that I oversee. And one's just my own. But it's just like everything-I think I also have way too many applications that I need to use and way too many accounts. I have the accounts for P card receipt reconciliation. I have an account for me logging on to my portal through the school where I am a student as well. So, it's where I access my own personal information on academics, but then also a place where you can order catering for a program or for work (E5).

Gen Z employees preferred Google Workspace since that was what they grew up with while they were in middle school and high school. As a result, none of the Gen Z participants discussed transitioning from a Microsoft-licensed campus to a Google-licensed campus. Though most of the Gen Z participants worked on campuses that used Microsoft products, they preferred Google Workspace over Microsoft products. Gen Z participants preferred the design software

Canva because of the variety of user-friendly and user-intuitive products that it offers. A Gen Z participant preferred Google Workspace because they had been using it since middle school.

> I think I used Google from high school on. In middle school, that was my first formal computer education. Probably was like seventh, eighth grade. So, I was like 12 to 14. And they were old, the really chunky laptops from Microsoft. And so, at that point, I was more adept on Windows, but I think I switched over to Google. And then actually, I had a MacBook. But most of the time, I think when I would look up stuff, I would use Google. We'd have jokes about using Bing, but I don't think anyone I know used it…well, actually, I know like two people that would use it ironically, but that was about it (E4).

Gen Z participants made it apparent that they preferred Google Workspace over Microsoft products in their professional lives. Some added that they needed more onboarding when they entered their new position to understand how their institutions used Microsoft products. This topic was a recurring theme in the Gen Z participant interviews.

Though social media was a go-to for Gen Z participants when looking for career advice such as interviewing or what questions to ask during an interview, when it came to workplace dilemmas or seeking workplace related advice, Gen Z participants preferred to Facetime or video chat a family member, colleague, or friend rather than to turn to TikTok, Instagram, or X. One Gen Z participant had used both TikTok and Google apps to gain advice on salary negotiations and interview questions:

> Actually, I have in the past have searched for things on TikTok. I guess an example of that is when I was interviewing for jobs, and I had questions about what questions should I ask in the interview and how does one negotiate, and things like that. So actually, I'm really glad you asked that because that actually brings back a lot now. So, I would say TikTok is the app that I do that for. And I guess I'd Google some of those questions as well. But that would be another app that I sometimes get to use in that space (E8).

Another Gen Z participant Facetimed their family rather than turning to social media:

> My father was a big help. One of my courses now teaches me to…it does solicit me to use the Internet for advice, which I don't know why I never thought of it before, even though I am Gen Z, and everyone does everything on the Internet. But I don't know why. I just am not the kind of person that tries to look to the Internet for answers usually. I rely on other people that I know and respect (E5).

Gen Z participants discussed their understanding of how technology had helped them grow in their roles and how they were using it to resolve workplace dilemmas. About half of Gen Z participants understood the role of how technology had helped them grow in their current role even though it was not in their initial job description.

Workplace Communication

The third major theme focused on Gen Z workplace communication styles when it came to how they preferred to communicate with their supervisors, co-workers, peers, and the students that they served daily. Three sub-themes emerged as Gen Z participants provided an in-depth perspective on how they preferred to communicate virtually, how they avoided non-virtual communication, and how they created virtual work-life boundaries.

Virtual Communication

Gen Z participants preferred direct messaging to communicate with others in the workplace. They preferred email because of the accountability implications that it provided. They also used Microsoft Teams and Google Chat to stay connected and preferred text message for instant conversations. One Gen Z participant preferred email because:

> I feel like it's better to keep a written copy. I know that personally, for me, something I tell my students when they're like, "Oh, hey, can you do this for me? Can you do this for me this week?" I'm like, "Yeah, email me so I don't forget," because I tend to forget things just because I have so much going on, and I change my direction of work every 20 minutes. Like I have so many tasks to do throughout the day. It's so easy for me to forget small things that they need from me (E11).

Gen Z participants preferred to send and receive direct messages in a variety of ways. They viewed email, Teams, and Google Chat (sometimes referred to as G chat) as formal messaging and social media direct messages as informal messaging. However, Gen Z

participants were willing to try new ways of communication such as GroupMe and Slack to meet their generational counterparts where they were when it comes to direct messaging preferences.

Gen Z participants also preferred video chat on Facetime and Zoom rather than picking up the phone and calling a colleague. A couple of Gen Z participants worked on WebEx campuses and preferred that platform as their video chat, but the majority preferred using Zoom or Facetime for video chat and Teams for chat massaging. One Gen Z participant viewed video chat as face-to face communication:

> I think I prefer just the face-to-face interaction, whether it's in person or via a video chat. Especially in a student appointment on the phone, I feel like things get lost in translation. I feel like I can't accurately describe information to students without a visual, sharing my screen or walking them through a degree audit or something like that, or showing them a web page. The phone just doesn't work. And I feel like there's a culture within and outside of our departments that I've never been asked by a colleague in a different cross-department, "Hey, can you get on a phone call?" It's always, "Hey, can I set up a Zoom meeting with you" (E1)?

Gen Z participants' preference for video chat has shifted the workplace to become more hybrid, allowing for both face-to-face communications simultaneously with video chat communication. Gen Z employees preferred online meetings because it helped with time management and allowed them to show up on time. Gen Z participants preferred to talk to each other over a video chat even with their screens turned off instead of using the phone to call each other.

Non-Virtual Communication

It was astounding to discover how many Gen Z participants did not like using the phone or did not find it necessary to talk on the phone but would rather use a video chat to communicate instead. A Gen Z participant shared that they rarely used their office or cell phone.

> I rarely, at work and in my personal life, utilize a phone call. I think I'm in that Gen Z where I don't want to call people. A lot of my students are into Facetiming each other instead of actually calling them. I don't do that. If I'm really going to make a phone call,

> I'll just use the phone call function, mainly if I'm driving or whatever. But I rarely pick up the phone for work stuff. And literally, no one calls me (E12).

A Gen Z participant talked on the phone at the most twice a week, but only when Zoom is malfunctioning.

> Like, I'd say maybe twice a week, I get a phone call. I don't think I've gotten any so far this week. Wait…I did get one call last week and I called a student one time this week because Zoom wasn't working. I did. Yesterday, I called one. But other than that, I haven't received many calls at all (E9).

A couple of Gen Z employees were the exception (E8 and E2) because they were in external facing positions, so a part of their roles involved them talking on the phone to Gen Z students and their parents. Many Gen Z participants discussed why they preferred any other communication method over a phone conversation.

Virtual Work-Life Boundaries

Though Gen Z participants discussed the definitive boundaries they had in place that separated work from life, they used their smartphones daily for work purposes. They had work apps on their smartphones (i.e., Teams, Outlook, Gmail, G Chat, GroupMe, Slack, etc.), used their phone for work purpose after hours, sent and received email, and accessed work content. Some Gen Z participants were trying to set boundaries by turning off their notifications to create a better work and life balance.

One Gen Z participant's notifications preference was seasonal, depending on the frequency of interactions with students in their role. They also kept some of their notifications on year-round to stay connected to their campus.

> I have my notifications on. With Slack, I have my notifications on during the orientation time, but in the times between that, I don't have them on because we're rarely ever using Slack to talk about orientation when it's not orientation time. So, I don't have them set on then. But with Outlook and WebEx, I have them set on, I have them on constantly (E3).

Several Gen Z participants discussed the importance of unplugging when they were out of the office. However, when they were asked follow-up questions about their smartphone usage, they shared that they had a hard time unplugging sometimes. They were working to improve in this area, so they did not become burnt out in the profession by staying connected 24/7. As some Gen Z participants noted, over connectivity was detrimental to their health.

Gen Z Skills Gap

The fourth major theme focused on Gen Z participants and supervisor participants' concerns for Gen Z skills gaps in the workplace. There were three sub-themes that interviewees felt were of high importance as this generation continues to enter the workplace: concern for their lack of critical thinking, Gen Z student and Gen Z employees' lack of professionalism, and concern for Gen Z employees' limited social skills.

Critical Thinking

Gen Z participants and supervisors who worked closely with Gen Z students entering the workforce pointed out their lack of critical thinking when it came to taking initiative in the workplace to figure things out on their own, understanding copyright infringement, and not vetting the information they received via the internet or in email. Gen Z participants and supervisor participants also discussed concerns for Gen Z students' use of AI in higher education. Supervisor participants also reported that some Gen Z employees have a know-it-all mentality or a know everything mindset. A supervisor attributed the lack of social skills in the workplace to a siloed mentality affecting Gen Zers' critical thinking.

> And then I have Gen Z staff who I'm like, "Okay, I need you to come back out and have a conversation with people because you're so far into it and you're not helping others learn." So, there's a bit of a divide. And so, I think just that ongoing relationship-building, but that ongoing training as well and those resources needed. They love living in their little island of "I know all the things, and I don't need to tell anybody else how to do the things, because while I want you to tell me everything, I don't have to tell you anything"

> is my favorite aspect of their personalities. They want all the information poured into them, but they're not as receptive to then sharing out the information they have (ES5).

One Gen Z participant experienced other Gen Z students' lack of critical thinking daily as they tried to motivate Gen Z students to take the initiative to find the answer for themselves.

> So, I also think another issue that's…I say students, but a new wave of Gen Z in the workplace is honestly figuring things out for themselves. So even if it is looking things up on Google, I do say that that's one thing. And I used to be this way, a year, and a half ago until my supervisor told me: "Just Google it. You will find the same answer that I'm going to tell you." And now I am here telling my students the same thing. But now I am here telling my students the same things that when they have questions, then, honestly, some of their questions are like, "How do I put a formula into Excel?" Did you try Googling it? Because I can tell you. I can tell you. I know how to, but I want you to figure out how to learn how to look for things yourself. Look for these answers yourself. Figure out these problems yourself before you just come running to me on, "You fix it." I think that goes into that same idea of they try things one time, they fail once, and they give up. They say, "This didn't work for me. I'm done with this." And I'm like, "Try again" (E11).

Gen Z participants addressed more concerns than supervisors about Gen Z students' lack of critical thinking when it came to digital literacy. Gen Z participants' largest concern was the need to give up and throw in the towel so quickly and not taking the time to figure it out for themselves.

The New Era of Artificial Intelligence. Nine Gen Z participants have used AI in their current role, a handful were aware of copyright and intellectual property, and a majority were concerned about Gen Z students' use of ChatGPT and AI. A Gen Z participant noticed the increase in Gen Z students' usage of ChatGPT.

> Yeah. We've definitely noticed that, especially this year. But I will say, I've only noticed it when a student has all the resources already available to them. And what I mean by that is when you open their application, you can tell it's very written out. It's very formalized. There are activities. They've done X, Y, Z research throughout high school. They've had access to so many different things that when I get to their essay, I'm not surprised, honestly. And the way when ChatGPT writes…and we've had so many trainings on it, and we even say on our website, since we're a technical institution, we say, "We're okay with you using it. Just don't let it be your sole voice." And when we see students use it as their sole voice, we can tell because the way ChatGPT organizes an essay, it's five

> straight paragraphs. There are certain words that ChatGPT uses that we've been trained on to keep an eye out for, basically. And nine times out of 10, we can basically tell that it's ChatGPT. And so, yeah, we've definitely noticed that a lot this year and have basically stopped a student's entire application when they've plagiarized the essay, so (E2).

A supervisor used and liked ChatGPT occasionally but was weary of Gen Z students' dependency on using the online tool.

> However, I think used it in a specific context to where it's not so much of having the system create something for you completely. But it's more so taking your own thoughts and your own information and creating something that sounds, right? So, let's say you want to create an agenda for an event, right? So, you put all the information in there, and you say, "Oh, this is the date. This is the time. This is the location," different things like that. And ChatGPT is able to kind of put all that together and formulate it for you in order for it to look good or for it to sound good. I think the issue is that a lot of students or a lot of employees, they heavily rely on ChatGPT. And so instead of it being helpful to help them develop things, it's more so of them using it in order to create their own ideas, but it's not really theirs. It's someone else's or it's AIs as opposed to their own thoughts (ES6).

Gen Z participants did not have any issue using ChatGPT in the workplace. They understood how to use ChatGPT and AI as a beginning tool to help formulate an idea and expand upon it. Their supervisors support them appropriately using ChatGPT and AI, however, there was a greater concern with Gen Z students that were entering the workforce. Gen Z experienced digital literacy daily in different contexts, be it helping other generations resolve technology issues in the workplace, helping the upcoming Gen Z students understand privacy and confidentiality, or using ChatGPT and AI to make their life more efficient.

Professionalism

Participants discussed both the lack of workplace professionalism exhibited by Gen Z students and the lack of professionalism exhibited by Gen Z employees currently in the workforce. Professional communication was the top concern from both sets of participant groups.

Student Professionalism. Gen Z participants and supervisor participants discussed several concerns regarding Gen Z students' professionalism. Their top concerns were their need to take initiative and be proactive in solving their own problems, understanding the difference between professional formal communication and informal direct messaging, understanding industry-specific technology, and understanding workplace conflict resolution.

A Gen Z participant felt that the lines had been blurred in Gen Z students' understanding of professional communication.

> And I don't know if that's due to the increase of dependency on social media or-- I really don't know where it's from. For example, I just received an email from a student where they said, "LOL." And I'm just like, "Oh, that's--" personally, me and how I was taught was not to use that in an email, especially when talking to faculty, staff, or a professor. But then again, it could be-- I really don't know. I do think that maybe there seems to be a loss of professionalism within students when it comes to messaging and using social media (E3).

One Gen Z participant shared the same sentiment when it came to Gen Z students' professional communication:

> Where I see breakdowns happening is how to work emails. So, it's actually more of like the social-emotional education part with literacy. So, when I was a TA, I would get these emails most of them post 2020 from students that I just would never have sent a teacher in my life. And they just would be like really, "I'm not doing this today." And then they would put like, "I'm not doing this today. Updates following" (E4).

Gen Z participants and supervisor participants agreed that Gen Z students' professional communication was a valid digital literacy skills gap concern, especially since they were graduating from college and continuing to enter the workforce.

Employee Professionalism. Supervisors shared three concerns for Gen Z employees in the workforce: their lack of public speaking skills, their need to understand institutional protocols, and their lack of reading through professional communications. A supervisor pointed

out that Gen Zers neither understood institutional protocols nor the “chain of command” and felt the need to go above their supervisors to get answers.

> Digital literacy aside, but probably has to do with it, is they want every single detail to everything, even if it's not appropriate to the work that they're doing. This generation wants transparency on a level in the workspace that isn't always appropriate, especially thinking about being a higher ed professional. The President isn't going to tell us every single thing that's happening in their working life or pieces that don't impact the work that we might be doing in student affairs. And so, they expect a lot of transparency from that individual. They also want a lot of transparency from our vice president who is not terribly transparent, in general. And so while I can appreciate a desire to know all the things to be well-informed, I think it's also understanding that too much transparency can also create the same level of paralysis to the work that needs to be done because you're stuck in this analysis paralysis all the time of, "I'm just trying to process all the things," when I just need you to go focus on your work today and establishing good working relationships there I find that to be rather interesting. As a curious person myself, I want to know all the things, but I also understand nuance. And I think that's something that's missing for this generation is they feel like they've been told everything their entire life (ES5).

Supervisor participants had similar concerns about Gen Z professional communication, but more so about Gen Z employees’ lack of reading through and appropriately disseminating information. The topics mentioned did not initially appear to align with Gen Z digital literacy skills gaps but through further discussion, supervisors connected the lack of public speaking skills and the need to understand institutional protocol to digital literacy gaps in professional communication.

Social Skills

Supervisor participants appreciated Gen Zers’ genuine concern and care about people and how they related to Gen Z students. However, they were also concerned about their social skills when it came to their lack of attention, attitude, and the need to always know more information than was appropriate. A supervisor attributed their lack of social skills to the fact that they were just entering the workforce.

> I would say it's definitely a learning curve, just with them being out of education or just soon being out of higher ed or education and entering the workforce. Some social or work interaction skills that are needed are social skills when it comes to interactions in the workforce. Concerning Gen Z employees some of them are having a difficult time connecting with people, whether it's online or communicating with individuals online through more foremost channels like emails versus in-person, and with that being difficult for them (ES7).

Covid-19 was referenced by several supervisor participants: they felt it was the reason for the lack of Gen Z social skills in the workplace. A supervisor added that Covid-19 was a reason for their lack of social skills.

> And so yeah, I think definitely this current generation is struggling with in-person communication because they were required to pause at a crucial time, I'd say, in their lives where they had to communicate virtually. And that was something they were already doing through all the various digital platforms. And so, when it came time to get back into person, I'm still finding times now where I have staff who are struggling with communicating in person and still wanting to communicate via Zoom or some other type of platform that's virtual instead of in-person (ES1).

Supervisors also discussed the major impact that the Covid-19 trauma had left on Gen Z employees who were entering the workforce, they cited the negative impact of technology on communication skills, how technology had isolated Gen Zers, and the dependency they placed on their devices and social media for validation.

Topics for Future Virtual Training

The fifth and final major theme was the topics for future virtual training that supervisor participants and some Gen Z participants felt were pertinent for not just Gen Z employees but the future workforce. Two subthemes emerged included digital literacy training and alignment of performance evaluations to include technology competence for the 21st century workforce.

Digital Literacy

Different types of approaches to digital literacy, virtual training, and hybrid training emerged during the interviews with participants. Some suggested cross training for student

affairs student engagement platforms, adding it to the curriculum for students while they were onboarding into the college environment, including a more frequent and robust cybersecurity training, and offering digital literacy training in a workshop format. Participant E1 would have liked to have seen continuous training for Gen Z students to help them with taking initiative when they problem solved their technology issues. A supervisor believed it would have been helpful to equip Gen Z students with the digital tools they needed to be successful in their course work, so they were prepared to enter the workforce.

> I think in regard to offering trainings and workshops, maybe to continue to enhance or identify gaps, make this a part of an academic class, or make it a part of curriculum within their classes. I think providing them with the tools needed. I know at my previous institution, the incoming students, they each got, I believe, iPads. And that was part of their onboarding package as students to the institution. I know my daughters, they're six and seven, they are already working with Chromebooks and one's in kindergarten, one's in second grade. And I know we're talking about higher education, but just to kind of even go into different other areas of education, I feel the digital literacy gap is closing or their skills are being enhanced because we're starting sooner (ES2).

A Gen Z participant also believed that digital literacy training should have focused on older generations in addition to Gen Z students:

> And I've seen a small but noticeable attempt for our school system, to get employees and, of course, they don't target it to older generations, but they say like employees who want support in using Excel and Forms or using the Navigate app or whatever, whatever, they'll say, like, "Oh, we have like a training session." And when you go to those sessions because I was like, "I have no clue how to use Navigate when I came in here because we didn't use that at my previous institution." When I went in there, it was all folks who were 30, 40 going up from there. So yeah, I think because I'm 26, so folks around my age, we've been pretty–I haven't seen much of them needing support in that way, but it's definitely–there needs to be a clear effort to help get them up to speed (E9).

Gen Z participants and supervisors agreed on digital literacy training in hybrid and virtual formats to expand the horizons for Gen Z students entering the workforce and older generations adapting to emerging technologies in the workforce. A couple of participants suggested retaining

a subject matter expert in the division of student affairs to assist with virtual and hands-on training for onboarding and continuous reskilling.

Evaluation of Digital Literacy Competency

All of the supervisor participants shared that their campuses were currently having conversations about how to approach digital literacy competency in their evaluation process, especially with so many different levels of digital literacy in the workforce. The concern for a fair and equitable process continued to stall Human Resources departments and campus task forces to make the necessary changes to account for digital literacy competency in the evaluation and appraisal process. Some supervisors felt that their campus did not know where to begin the process of incorporating technology into the evaluation process. A supervisor suggested hiring industry consultants and bringing Gen Z to the meeting table to figure out a solution.

> Also, I think they would need to hire consultants in those fields to inform because the folks that I work with would have no idea what to evaluate. I think Gen Z are also going to be able to inform just looking at how they work and bringing them to the table to say, "Okay. These are the positions that we have in place. These are the positions that we would like to see for the institution. Can you inform or can you provide some thoughts about what we should say is needed for those roles?" Bring them to the table. Ooh, that's important. Yeah, because that's where we're going. I mean, more of them are entering the workforce, and they are going to want to be compensated for their digital literacy competency (ES3).

Gen Z participants were concerned that their institution's evaluation process was outdated when it came to digital competency. Most participants agreed that digital literacy competency needs to be added to the evaluation process to ensure an equitable and equal appraisal process across the board.

Summary of Chapter 4

The main findings that emerged from the study resulted in five major themes with their respective sub-themes: 1) Experiencing digital literacy daily (sub-themes included emerging

technological navigation, the multigenerational workforce, and using information skills; 2) Preferred technology (sub-themes included technology in personal life and technology in the workplace); 3) Workplace communication (sub-themes included virtual communication, non-virtual communication, and virtual work-life boundaries); 4) Gen Z skills gap concerns (sub-themes included critical thinking, Gen Z student and employee professionalism, and social skills); and 5) Topics for future virtual training (sub-themes included digital literacy and evaluation of digital literacy competency).

Gen Z and supervisor participants agreed that Gen Z was advanced in their adaption to new software systems and virtual platforms, though all Gen Z participants discussed the trial-and-error method as their go-to for how they navigated emerging technology. Gen Z participants preferred Google Workspace over Microsoft products in the workplace because they grew up with it in middle school and high school. Gen Z participants' preference for video chat has shifted the workplace to become more hybrid, allowing for face-to-face communication simultaneously through video chat. Time was of the essence to Gen Z; they used Google to search how to do something; their method of storage was the cloud, and they lived in a web-based society where everything was on-demand and constantly updated automatically.

Gen Z participants felt like they were stuck between two generations when they were around Gen Z college students, younger family members, and other generational cohorts in the workplace. Most of the Gen Z participants identified themselves as post-millennials, Millennials, or Gen Z, depending on the setting and circumstances of the situation. Though social media played a significant role in their virtual communication, they understood the need for privacy, cybersecurity, and fact-checking social media platforms and news sources.

Gen Z participants and supervisors shared concerns about Gen Z students' lack of critical thinking in digital literacy, professional communication, and social skills. Supervisor participants felt that Covid-19 left a lasting impact on Gen Z, citing the negative impact of technology on their communication skills, how technology has isolated them, and Gen Zers' dependency on their devices and social media for validation.

Supervisors and some Gen Z participants suggested digital literacy training in hybrid and virtual formats for Gen Z students and older generations in the workforce to assist with onboarding and continuous reskilling. Most participants agreed that digital literacy competency needs to be added to the evaluation process to ensure an equitable, equal, and fair appraisal process as Gen Z continued to enter the 21st century workforce.

Chapter 5: Discussion

In this chapter, I highlight the significance of the study findings with respect to the research questions (see Table 5.1), present implications for HRD research and implications, discuss the study limitations, and provide concluding remarks. In a thematic analysis of Lester et al. (2020) with the interview data of 12 Gen Z employees and seven supervisors of Gen Z employees, I identified five major themes including: (1) experiencing digital literacy daily, (2) preferred technology, (3) workplace communication, (4) gaps in Gen Z digital literacy skills, and (5) topics for future virtual training. Table 5.1 shows five major themes in alignment with the three research questions that guided my study.

Table 5.1

Research Questions and Major Themes

Research Question	Major Themes
1. How do Gen Z employees in higher education experience digital literacy?	Experiencing Digital Literacy Daily • Emerging Technological Navigation • Multigenerational Workforce • Information Skills Preferred Technology • Technology in Personal Life • Technology in the Workplace Workplace Communication • Virtual Communication • Non-Virtual Communication • Virtual Work-Life Boundaries
2. What gaps in digital literacy skills exist in Gen Z employees in higher education?	Gen Z Skills Gap • Critical Thinking • Professionalism • Social Skills
3. What can higher education institutions do to close the digital literacy skills gaps for Gen Z employees entering the workforce?	Topics for Future Virtual Training • Digital Literacy • Evaluation of Digital Literacy Competency

Research Questions and Discussion of the Findings

As in Table 5.1, I identified five major themes, attesting to the unique experience of Gen Z employees' digital literacy in the higher education setting. The 19 participants (12 Gen Z employees and 7 supervisors of Gen Z employees) informed this study as to how Gen Zers experienced, accessed, and used digital tools and virtual platforms in their everyday lives. Supervisors and Gen Z employees' viewpoints aligned and contrasted with supervisor participants offering a deeper perspective on Gen Z employees' digital literacy in the workplace.

The findings from this study did not generalize all Gen Z employees in or entering the workforce. The generalization of the study's findings on the Gen Z cohort should be taken into the context of the higher education setting. This study was not a full representation of the Gen Z cohort, nor are the study's findings necessarily 100% true for all Gen Z in the workforce. With respect to the research questions, I discussed insights regarding the study's significant findings. The following findings emerged as the most significant in this study.

RQ1. How do Gen Z employees in higher education experience digital literacy?

The born digital, Gen Z cohort has been the independent technologically driven trailblazers of the 21st century workforce, they have forced organizations to become innovative through the continuous addition of emergent technologies, which has led to the transformation of digital tools and virtual platforms and how they are used in the workplace (Graczyk-Kucharska et al., 2022). Gen Z employees' continued adaption to emerging technology is the new normal. Their digital confidence and ability to adapt to new technologies differed from that of prior generations; this was in part because they were fearless when testing new and emerging technologies, immediately bringing them into the workforce (Hamdi et al., 2022). They clicked around, were comfortable making mistakes relying on the undo button, navigating how to use

emerging technologies in a snap. Gen Z employees were unapologetic in their approach to introducing emerging technologies in the workforce to make their work-life easier and more efficient. Though they admitted to using the trial and error method when applying their photo-visual digital skills (i.e., clicking around, testing it out and undoing mistakes when trying to figure out the next steps) when navigating how to use new technologies in the workplace (i.e., new software, an app, or a web platform), Gen Z employee confidence was embedded in their digital comfort with user-friendly, user-intuitive technologies. Gen Z employees rated themselves as possessing excellent digital literacy skills contrary to their supervisors who felt that they were underprepared in their virtual critical thinking, professional communication, and social skill sets.

Because Gen Z employees felt like they were stuck between two generations, this added support and relevancy to the phenomenon of the pre-Covid Gen Z cohort (graduated in 2013-2019) and the post-Covid Gen Z cohort (graduating from 2020-present day) as most Gen Z employees described themselves as post-Millennials or on the cusp of the Millennial cohort cutoff (Selingo, 2021). This was a consistent discussion point amongst Gen Z employees because they worked closely with Gen Z students at their respective higher education institutions. Gen Z employees noted the differences between themselves in the workforce and the Gen Z students that they worked with who are entering the workforce over the next few years. Gen Z employees noticed the differences between their critical thinking, professional communication, and social skills as they pertain to digital literacy skills (i.e., information skills, branching skills, and real-time thinking skills, etc.) with Gen Z students whom they worked with daily.

Gen Z employees have been noted for having poor problem-solving, analytical, and decision-making digital literacy skills (Deluliis & Saylor, 2021) and needing to develop their

virtual problem-solving, self-directedness, and critical thinking skills because they process information differently than those from prior generations (Szymkowiak et al., 2021). However, Gen Z employees not only cared to help their fellow coworkers, but they also attributed the lack of digital resources as the contributing factor to their lack of patience when it came to helping older generations navigate the use of emergent technology in the workplace. Citing that they felt like their departments' go-to digital consultants when they figured out how to do something, left them feeling like the go-to information technology professional, having to explain how to use digital tools and virtual platforms to their coworkers, supervisors, and the Gen Z students with whom they worked.

As Google Workspace users most of their lives (i.e., middle school, high school, and college), Gen Z employees Googled solutions to figure out how to use these digital tools and virtual platforms, and expected others to do the same. They became frustrated with the lack of initiative of others in the workplace to Google or YouTube a solution to figure out how to use emerging technology. As web-based digital users, Gen Z employees preferred to store their documents online for easy access to user intuitive technology for the digital comfort that it offered them as they navigated Google Workspace at home and Microsoft products in the workplace. They preferred technology that was proficient, on-demand, and relevant to their role in their organization. They preferred a user-friendly app so that they could access their work from whatever device that they choose (i.e., personal or work smartphone, personal tablet or iPad, wearable device, personal or work laptop; McWhorter & Bennett, 2021).

Contrary to the literature discussing the void in Gen Z's information digital skills (Miliou & Angeli, 2021), Gen Z employees had the deepest understanding of information digital skills over all of the other digital literacy skills (i.e., photo-visual digital skills, reproduction digital

skills, branching digital skills, social-emotional digital skills, and real-time thinking digital skills) because they were taught to critically analyze and evaluate the legitimacy of virtual content they were searching as it was taught to them by their family, supervisors, and co-workers as they entered the workplace in 2013 (Gubbins et al., 2023). They fact checked TikTok and other social media platforms, watched out for phishing emails from scammers, and valued their privacy when giving and receiving information online. Growing up in the Catfish era, their information skills included checking for identity theft, navigating digital misinformation and scams, and taking a fact-checking deep dive to discover fake news. Since Gen Z employees worked closely with Gen Z students, it was their personal duty to teach Gen Z students who were entering the workforce to have a deeper understanding of cybersecurity awareness, taking social media information at face value, and not oversharing private information on their social media accounts. When seeking a resolution for workplace conflict, advice for interviewing, or salary negotiation, Gen Z employees used social media to ask for advice anonymously in the higher education chat rooms, follow the Career TikTok trends, or catch the latest higher education profession memes on their preferred social media platforms such as Instagram and LinkedIn.

Gen Z employees valued work-life balance, preferring to turn off the always on 24/7 connected culture to stave off new professional burnout in their entry level roles. They viewed over-connectivity as a detriment to their health and valued the importance of unplugging when they were out of the office. Though Gen Z employees had definitive work-life boundaries in place that separated work from life (i.e., turning off notifications, setting Do Not Disturb timeframes, separate apps for work and personal emails), they used their smartphones daily for work purposes. They had work apps on their smartphones (i.e., Teams, Outlook, Gmail, G Chat,

GroupMe, Slack, etc.), used their phones for work purposes after business operating hours, sent and received work email, and accessed work content while out of the office.

Gen Z employees minimally used their real-time thinking digital skills (i.e., connecting devices, knowing how to use office hardware and software) as they preferred to use their Apple products (i.e., AirPods, iPhone, Apple Watch, iMac, MacBook, etc.) to help them maintain their version of work-life balance because of the easy Bluetooth connectivity between devices. They used Canva because of the variety of user-friendly and user-intuitive products that it offered, which allowed them to design personal and professional social media content from the palm of their hand. Google and Google Workspace were their top go-to for research since this was what they grew up with while they were in middle school and high school. They still required virtual digital literacy onboarding when entering their new position to help them with the practical application of their digital skills (Anckar et al., 2023). This was to help them better understand how their institution used software apps, network storage, and virtual platforms (i.e., Microsoft 365, Microsoft Teams, Microsoft Outlook, etc.), and how they could use these more efficiently to obtain work-life balance.

Long gone were the days of picking up the phone and calling their supervisor to discuss a workplace emergency; Gen Z employees' preference for video chat has shifted the workplace to become more hybrid, allowing for both face-to-face communications simultaneously with video chat communication. Gen Z employees were virtual communicators who preferred to send their supervisors a text, direct message (DM) a colleague on Teams, or use Teams, GroupMe, or Slack to communicate with the Gen Z students with whom they work. Gen Z employees preferred to just turn on a Zoom meeting because it allowed them to be on-time rather than walking to the meeting location for a face-to-face meeting. Gen Z employees preferred to Facetime or video

chat because to them, talking over video or FaceTime was the same as calling someone on the phone: to them, video chat was face-to face communication. Gen Z employees preferred to view who they are talking to, as a phone call gives them anxiety because they were unable to view the facial reactions of the person with whom they were speaking.

Gen Z employees appreciated the different student engagement virtual platforms and apps that they were required to use in their role; however, too many online accounts, virtual platforms, and apps became an encumbrance and overwhelmed them, causing digital fatigue in their branching digital skills. Too much use of their hypermedia skills in the workplace disorients them, causing them to become overwhelmed in using their multidimensional spatial skills (i.e., searching on the Internet, while switching back and forth between desktop/network apps and virtual software on webpages, DMing or group messaging on social media and virtual communication platforms or apps, all at the same time). Gen Z employees liked to have their accounts streamlined for efficiency: having to go to more than one folder, app, or website to do their job became a nuisance for them, which was why they preferred the all-in-one Google Workspace. They became easily overwhelmed with too many technology systems that lack connection resulting in inefficiency. For example, while Microsoft and Google products do not sync, Gen Z employees need all of their accounts to sync and systems to talk to each other so that they are able to be successful in their role.

RQ2. What digital literacy skills gaps exist in Gen Z employees in higher education?

Using the thematic analysis of Lester et al. (2020) for the interview data of 12 Gen Z employees and seven supervisors of Gen Z employees, I identified three Gen Z digital literacy skills gaps. The top three Gen Z digital literacy skills gaps found were critical thinking,

professional communication, and social skills amongst Gen Z employees currently in the workplace and Gen Z students entering the workforce.

According to scholars, Gen Z workers do not show the critical thinking skills needed to reproduce content resulting in a skills gap in the practical application of their digital skills (Le & Pole, 2022). This included Gen Z employees' lack of using critical thinking in their reproduction digital skills using Generative AI to write formal emails, industry reports, memos, and agendas, and to develop presentations in the workplace without editing the content and submitting it as their original work, violating ethics, plagiarizing copyrighted and trademarked materials, including using creative content (i.e., images, video clips, podcast soundbites, music, text, or other virtual content), and not understanding the legal issues that stealing others' virtual content may cause (not citing or giving credit). As well as being able to problem solve and find virtual solutions, they often possessed a deeper understanding of critical thinking through the next steps when utilizing emerging software instead of just clicking around, using the trial-and-error method to undo and erase their virtual mistakes.

Although critical thinking was at the top of the list of the Gen Z skills gaps, Gen Z employees' critical thinking looked slightly different than what prior generational cohorts had been taught. In their virtual critical thinking skills, they used social media in different formats to communicate with different generations in their network, to stay informed, or to peruse the latest societal trends. Gen Z employees used Facebook to accommodate and communicate with other generations (i.e., their family, mentors, and professional staff) who they have met along the way in their career and collegial experience. Gen Z employees sent and received direct messages in various ways depending on the sense of urgency and the professional level of the person that

they were trying to communicate with. They used Teams and Google Chat (sometimes referred to as G chat) as formal messaging and social media direct messaging as informal messaging.

To that end, critical thinking looked different for Gen Z employees concerning the context that they were using for the communication tool depending on which generational cohort they were communicating with. Gen Zers process information differently than prior generations, preferring to watch task completion first (i.e., watching a video on YouTube, watching an influencer on social media) before trying to do it on their own (Szymkowiak et al., 2021). Supervisors considered Gen Z employees as the most caring generational cohort, noting that they communicated on the individual level. Gen Z employees engaged and stayed connected by meeting the different generations where they were on various social media platforms; this was proven in how they messaged different groups in the workplace (i.e., text messaging supervisors, GroupMe'ing Gen Z students, emailing coworkers). These changes were based on the type of message and urgency of information that they were trying to relay, which unfortunately was why informal text talk made its way into formal professional communication methods (i.e., email, teams, LinkedIn, DMs, etc.).

The second Gen Z skills gap, professional communication, involved the use of multiple professional communication mediums and methods that Gen Z employees used to communicate with different generations in the workplace. Supervisors shared a few concerns about Gen Z employees' professional communication in the workforce: their lack of public speaking skills (in-person presentation to a virtual audience, virtual presentation to a virtual audience, and hybrid presentation to a hybrid audience), their need to understand institutional protocols (whom to email about what, including chain of command), using informal text talk, slang, and other trendy verbiage in formal virtual professional communications, and their lack of reading through

and understanding professional communications. The world of audiobooks, podcasts, and virtual readers has resulted in Gen Z employees' lack of detail in reading through and understanding workplace communications thoroughly (i.e., emails, training documents, memos of understanding, meeting agendas, policies, procedures, etc.) and appropriately disseminating information which has led to misunderstandings, misinformation, and workplace conflict with supervisors and coworkers.

Intersecting digital literacy critical thinking skills with professional communication skills, Gen Z employees need to take initiative in solving their own virtual problems, understanding the difference between professional formal communication and informal direct messaging, and understanding industry specific technology. Supervisors also mentioned Gen Z employees' need to increase their social-emotional digital skills with respect to learning how to resolve workplace conflict. Examples included understanding how to share their opinion in virtual meetings, group chats, and social platforms without affecting organizational culture, taking the initiative to help other generations in the workplace navigate emerging technology, and openly sharing informal and formal technical knowledge with others in the workplace. Gen Z employees have an advantage with the introduction of Generative Artificial Intelligence (i.e., OpenAI, ChatGPT, Large Language Models (LLMs), etc.) in the workplace, however, they need to figure out how to use this technology to support their own voice (revise the information from ChatGPT) and not use it as their sole voice (directly copying information from ChatGPT) resulting in copyright infringement or plagiarism (Al-Sharafi et al., 2023).

Though Gen Z employees were perceived as being genuinely concerned about others, caring about other generations, and how they related to Gen Z students, supervisors viewed them as having a know-it-all mentality, a know everything mindset, and not sharing by hoarding

information from colleagues. Supervisors were also concerned about the third Gen Z digital literacy skills gap, Gen Z employees' social skills with regards to their lack of attention, workplace attitude, and need to always know more information than what was appropriate (i.e., not following a chain of command in professional communication). Supervisors attributed the lack of social skills in the workplace to a siloed mentality affecting Gen Z critical thinking in the workplace further affecting their social-emotional digital skills.

Covid-19's technology isolation has had a direct impact on the social skills of pre-Covid Gen Z employees (graduated in 2013-2019) in the workplace and post-Covid Gen Z students (graduating in 2020-present day) entering the workforce. Both Gen Z employees and supervisors agree that Covid-19's long lasting implications were a contributing factor to the lack of Gen Z social skills in the workplace affecting their ability to use their sociological and emotional skills to communicate appropriately (i.e., communicate their emotions in a non-offensive manner, not complaining about coworkers or the workplace on their social media platforms, not sharing information about personal inappropriate work behavior). Covid-19's impact still has implications and unintended consequences on Gen Zers' social skills, tech isolation, and loneliness because virtual communication was their sole use as a communication medium. Relying on virtual communication as the sole medium blurs the lines of formal and informal professional communication mediums. Gen Z employees are entering the workforce with the lingering effects of trauma from Covid-19, negatively impacting their professional communication and social skills, creating a culture of loneliness, isolating Gen Z and contributing to their silo mentality and their dependency on their devices and social media for validation.

RQ3. What can higher education institutions do to close the digital literacy skills gaps for Gen Z employees entering the workforce?

Supervisors and coworkers from prior generational cohorts need to upskill their digital literacy to remain relevant in their career since they work in higher education institutions with the Gen Z cohort. Gen Z proficiency in the use of digital tools and virtual platforms continued to expand as emerging technologies continued to transform higher education. Virtual HRD training options are important to Gen Z employees because they provide self-directed, on-demand, just-in-time learning and development virtual training methods that Gen Z employees are accustomed to, allowing them to take ownership of their professional learning and development.

Higher education institutions need to offer both virtual training methods and face-to-face training methods to reskill Gen Z's digital literacy along with offering different levels of training (i.e., beginner, intermediate, and advanced) for the different types of student engagement software and apps, Microsoft-licensed products and apps, and institutional-licensed products that Gen Z employees use during their career lifecycle in their professional role at their organization. Gen Zers valued different types of approaches to digital literacy, virtual training, and hybrid training options, as they suggested more training in digital literacy skills, cybersecurity, and accessibility in web design. Academic scholars have noted that virtual learning environments, such as Virtual HRD, offer the best option in reskilling to narrow the digital literacy skills gap within higher education, which provides Gen Zers with an environment where unlearning and reskilling can take place without negative consequences. Virtual HRD provides HRD practitioners with an abundance of digital literacy tools required to adequately reskill Gen Z employees through formal virtual training and development, just-in-time online learning

management systems, and other social media platforms. Supervisors and Gen Z employees suggested the following virtual training options to help close the Gen Z skills gap, such as:

- Using apps or websites to work on public speaking skills with AI as the audience offering feedback.
- Robust cybersecurity and privacy training with OpenAI as the scammer or phisher.
- Conducting AI practice interviews with Gen Z employees to work on professional communication.
- Using AI conversations to help Gen Z employees with conflict management situations.
- Virtual training on how to use the appropriate digital tools per institutional policy.
- Social media personal and professional branding for workplace ethical appropriateness.

Supervisors and Gen Z employees additionally suggested the following options for hybrid training solutions such as:

- Public speaking training with a live audience in-person and virtually for direct feedback.
- Virtual and in-person one-on-one coaching sessions for Gen Z employee continuous career development.
- Virtual accessibility training to help Gen Z employees understand virtual accessibility and virtual accommodations.
- Virtual and in-person small focus groups to help with conflict management workplace situations.

Last, virtual training alone is not the answer, nor is it a one-size-fits-all approach; participants agreed that there must be an accountability system to consider with virtual and hybrid training to hold employees accountable and make sure that they continuously reskill their technical cognitive knowledge that is required to be successful in their role (Yarberry & Sims, 2021). Evaluation of employees' digital literacy competency is vital to the future change management processes of the 21st century workforce. Evaluation of employees' digital literacy competency should include bi-annual tracking, assessment, and communication of such to the employee. Most of the supervisor participants shared that their institutions were currently having conversations about how to approach digital literacy competency in their evaluation process, especially with so many different levels of digital literacy competency in the current workforce at higher education institutions.

Gen Z employees felt that their institution's evaluation process was outdated when it came to digital literacy competency compensation. Gen Z employees shared concerns for a fair and equitable process when being compensated for their digital literacy skills in comparison to their supervisors and co-workers from other generational cohorts during the annual appraisal process. Determining how to appropriately evaluate digital literacy competency has continued to stall Human Resources departments and institutional task forces at higher education institutions, making it difficult for them to make the necessary changes to account for digital literacy competency in the evaluation and appraisal process. Some supervisors felt that their institution would not know where to begin the process of incorporating technology into the evaluation process over the next few years. All participants agreed that digital literacy competency needed to be added to the evaluation process to ensure an equitable and equal appraisal process across the board as more Gen Z employees enter the workforce.

To help Gen Z grow within the organization, employers need to go beyond contracted or external learning management systems and embrace new and emerging workplace trends such as utilizing TikTok and other social media platforms as an employee training and development tool (Korn Ferry, 2023). Employers need to post content across social media platforms due to the uncertainty and governmental restrictions on the usage of TikTok by state entities. Though TikTok is popular among Gen Z employees, TikTok continues to face legal issues in several countries, including states (i.e., Texas, Utah, Vermont, Virginia, etc.) in the U.S., which may force rethinking the use of this social media platform as a viable employee training and development tool in the future.

Meeting Gen Z where they communicate, make workplace connections, and find career advice allows employers to develop and attract Gen Z talent. Reskilling strategies need to include virtual training and development (i.e., online training, online sessions, online workshops) that nurtures Gen Z critical thinking, professional communication, and social skills development. Virtual HRD is considered suitable for developing Gen Z employees' digital literacy skills in both formal and informal digital developmental and training contexts (Bennett & McWhorter, 2021, 2022; Tung, 2020). Next, I discuss implications for HRD research and practice.

Implications for HRD Research

This study contributed to Virtual HRD literature on Gen Z employees in the workforce, examining their lived experience using digital literacy in the workforce in regard to their workplace technological expectations, their digital literacy skills gap, and how they use technology to work with other generations in the 21st century workforce. Contributing to the qualitative empirical literature on Gen Z in the workforce, this study also adds to Gen Z literature

by examining the different attributes of the pre-Covid Gen Z cohort (graduated in 2013-2019) and the post-Covid Gen Z cohort (graduating from 2020-present day).

Because of the relevance of Gen Z employees currently in the workplace, Gen Z students entering the workforce, and the continuous addition of emerging technological tools and virtual platforms being used in the workplace, HRD scholars and researchers should consider the following implications for future HRD research. The following recommendations proposed below are for future HRD research focused on HRD scholars and researchers working with Gen Z employees in the workplace and Gen Z students entering the workforce informing future generational HRD research.

First, scholars have noted deficits in Gen Z employees' virtual critical thinking skills, problem-solving, and self-directedness, citing that this gap has affected the practical application of their digital skills in the workplace (Anckar et al., 2023; Le & Pole, 2022). Gen Z employees have been found to have a void in their creative, critical thinking, and information-navigation digital literacy skills because they focus on content consumption rather than content creation (Miliou & Angeli, 2021; Pavlovich, 2021). Findings partially support the literature in the lack of Gen Z employees' critical thinking skills. However, Gen Z employees' critical thinking skills gap is twofold: 1) Gen Z employees' critical thinking looks slightly different than what prior generational cohorts have been taught. In their virtual critical thinking skills, they use social media in different formats to communicate with different generations in their network, to stay informed, or to peruse the latest societal trends. Critical thinking looks different for Gen Z employees concerning the context that they are using for the communication tool depending on which generational cohort they are communicating with; 2) Gen Zers process information differently than prior generations, preferring to watch task completion first (i.e., watching a video

on YouTube, watching an influencer on social media) before trying to do it on their own (Szymkowiak et al., 2021). Lacking critical thinking in their reproduction digital skills, they use Generative AI to write formal emails, industry reports, memos, and agendas, and to develop presentations in the workplace, causing concern for their understanding in reproduction digital skills (i.e., not editing content and submitting it as their original work, violating ethics, plagiarizing copyrighted and trademarked materials including using creative content; Al-Sharafi et al., 2023). For future research, HRD scholars will need to meet the needs of Gen Z employees' self-directed virtual learning by researching the use of Virtual HRD training methods that teach Gen Z employees the ethical usage of OpenAI and generative AI for appropriate use in the workplace (i.e., how to appropriately use AI in the workplace pertaining to proprietary data, when to use it, when not to use it, and how to use it effectively in the workplace; Viţelar, 2019).

Second, scholars have cited short attention spans as a contributing factor to the professional communication skills gap in Gen Z employees (Deluliis & Saylor, 2021). Gen Z employees also text-talk in formal communication which results in low vocabulary acquisition, contributing to their lack of digital literacy skills (Caratozzolo et al., 2020; McKee-Ryan, 2021). Scholarly research has found that Gen Z employees scored lower on communication and collaboration due to their dependency on mobile chatting apps and direct messaging in social networks (Barboutidis & Stiakakis, 2023). Findings support the literature in the lack of Gen Z employees' professional communication skills. Supervisors shared a few concerns about Gen Z employees' professional communication in the workforce: 1) their lack of public speaking skills (in-person presentation to a virtual audience, virtual presentation to a virtual audience, and hybrid presentation to a hybrid audience), 2) their need to understand institutional protocols (whom to email about what, including chain of command), 3) using informal text talk, slang, and

other trendy verbiage in formal virtual professional communications, and 4) their lack of detail in reading through and understanding professional communications. Because of the virtual accommodations in the workforce (i.e., audiobooks, podcasts, virtual readers), Gen Z employees lack detail in reading through and understanding workplace communications thoroughly (i.e., emails, training documents, memos of understanding, meeting agendas, policies, procedures, etc.) and appropriately disseminating information which leads to misunderstandings, misinformation, and workplace conflict with supervisors and coworkers.

Supervisors were also concerned about their lack of attention, workplace attitude, and need to always know more information than is appropriate (i.e., not following a chain of command in professional communication). Intersecting digital literacy critical thinking skills with professional communication skills, Gen Z employees will need to understand the difference between professional formal communication and informal direct messaging. For future research, HRD scholars will need to research reskilling Gen Z's professional communication skills using Virtual HRD strategies (i.e., AI, virtual training and development, social media virtual platforms) through an instructional curriculum technological approach for industry specific technology during the on-boarding phase (i.e., first 60 days) of their employment (Wheatley & Hibbler-Britt, 2019). This emphasizes the importance for upskilling and reskilling in the workforce, "therefore having knowledge and skills around Virtual HRD is beneficial for staying afloat and thriving" (McWhorter, 2023).

Third, research indicates that some Gen Z employees lack netiquette and have poor virtual analytical and decision-making digital literacy skills (Chillakuri & Mahanandia, 2018; Schroth, 2019). Researchers also found that the digital natives have poor management of their virtual digital identity and deficits in their interpersonal skills due to the heavy emphasis on text

and direct messaging (Barboutidis & Stiakakis, 2023; Brown, 2022). Scholars have noted that Gen Z graduates feel that they have very good digital literacy skills contrary to their employers who feel that they are un- and underprepared when entering the workforce (Le and Pole, 2022). Findings support the literature in the lack of Gen Z employees' social skills. Supervisors attributed the lack of social skills in the workplace to a siloed mentality affecting Gen Z critical thinking in the workplace further affecting their social-emotional digital skills. Gen Z employees and supervisors felt that Covid-19's technology isolation has had a direct impact on the social skills of pre-Covid Gen Z employees (graduated in 2013-2019) in the workplace and post-Covid Gen Z students (graduating in 2020-present day) entering the workforce.

Supervisors also attributed Covid-19's technology isolation to Gen Z employees having a know-it-all mentality, a know everything mindset, and not sharing by hoarding information from colleagues. Supervisors also mentioned Gen Z employees' need to increase their social-emotional digital skills with respect to learning how to resolve workplace conflict (i.e., understanding how to share their opinion in virtual meetings, group chats, and social platforms without affecting organizational culture). Since Gen Z employees are virtual communicators who are connected 24/7/365, HRD scholars will need to investigate: 1) how Virtual HRD strategies can be applied to Gen Z's always-on work culture, examining how the culture of over connectivity has impacted Gen Z employees' social-emotional digital skills for future research (Kalyvaki et al., 2023), and 2) how Virtual HRD strategies such as AI can be used to reskill Gen Zers' social skills by teaching them to have workplace appropriate conversations, small talk, and how to conduct themselves during an interview (Marr, 2022).

Last, the findings in this study supported the literature on the Gen Z employee's skills gaps and the application of Virtual HRD strategies to reskill Gen Z's digital literacy in the

workforce. A major future research agenda for Virtual HRD scholars in the HRD field will be to conduct research to determine a typology of Gen Z's digital literacy skills gaps to help HRD practitioners who work with Gen Z employees in the workforce. To accomplish this initiative, HRD scholars will need to conduct future quantitative research, developing an assessment or measuring tool to quantify and test the validity of the findings from this qualitative study. Overlooking this gap in the research will affect HR and HRD scholars and practitioners in the 21st century workforce with respect to the theoretical and practical applications of Virtual HRD for Gen Z employees.

Implications for HRD Practice

Implications for HRD practice span across professions, beyond the HRD discipline, and into other industries, further impacting the practical application of Virtual HRD strategies in the workplace. HRD practitioners should embrace utilizing Virtual HRD strategies such as gamification, virtual onboarding, and virtual reward system models in the workplace setting as those align more with the workplace values of Gen Z employees (Barhate & Dirani, 2022). HRD practitioners should embracing using relevant Virtual HRD technologies to impact and reskill the digital literacy of Gen Z employees in the workplace and Gen Z students entering the workforce through their practical application of Virtual HRD strategies in the workplace (Wheatley & Hibbler-Britt, 2019). The suggestions below are practical implications for HRD practitioners who work with Gen Z students entering the workforce and Gen Z employees currently in the workplace.

First, this study's findings and Virtual HRD literature strongly show the need for HRD practitioners to build a digitally literate, socially sound, critically thinking, future-ready Gen Z workforce through the application of Virtual HRD strategies. Gen Z employees' proficiency in

the use of digital tools and virtual platforms will continue to expand as emerging technologies continue to transform work culture, thus changing the way we work. Gen Z employees valued different types of approaches to digital literacy, virtual training, and hybrid training options, and they suggested more training in digital literacy skills, cybersecurity, and accessibility in web design. Through Gen Z employees' digital usage, they are telling us what the new standard in the workplace is: Virtual HRD is what Gen Z employees use to navigate their digital footprint. Gen Z employees best perceive, learn, and interpret content through digital media and mobile technology in the workplace, making it the best option for HRD practitioners in the development of Gen Z employees to narrow the skills gap (Viţelar, 2019).

Utilization of Virtual HRD strategies by HRD practitioners will help Gen Z employees to understand how to connect, better understand, and talk to different generations in the workplace. HRD practitioners need to embrace the utilization of social media in the workplace while establishing a code of conduct and best practices that directly impact employee performance to help close their critical thinking, professional communication, social skills gaps (Caruso, 2018). It is imperative that HRD practitioners address social media usage in the workplace by updating employee handbook policies, establishing guidelines for video chat and netiquette, and providing digital tools and training to help Gen Z employees better manage their personal and professional social media digital identity (Barboutidis & Stiakakis, 2023). To that end, HRD practitioners have an opportunity to reskill Gen Z employees' virtual professional communication skills through the use of AI for small talk (conversation user-interface with AI) to increase Gen Z workers' social skills while testing their virtual critical thinking/conflict management skills, navigating difficult discussions on workplace cultural norms, and conducting critical conversations about civility in the workplace (Okros, 2020).

Second, Gen Z employees in this study have shown how emergent technologies have made their way into the workforce as Gen Z employees push for proficient, efficient, and user-intuitive workplace technologies to help with their virtual work-life balance. HRD practitioners must utilize online collaboration tools that increase employee digital agility through early adoption of new and emerging technology in the workplace to recruit and retain Gen Z talent. Doing so will allow them to appropriately invest in the technology needed to recruit and retain the Gen Z workforce for better outcomes, revenue growth, and ROI regarding expertise training, certifications, and professional development opportunities (Razmerita et al., 2020; Rosenbusch & Morrison, 2020). HRD practitioners will need to embrace, understand, and assess the productivity gains from using Virtual HRD tools such as AI in the workplace and offer training on how to proficiently utilize digital tools and virtual platforms that offload remedial routine activities (i.e., scheduling meetings, remedial office support or administrative tasks, checking irrelevant email) (Kalyvaki et al., 2023; Lampert et al., 2018). This includes upskilling, onboarding, and reskilling continuous training and development for Gen Z employees in the workplace (pre-Covid Gen Z; graduated 2013-2019).

This approach will allow for safe integration of AI into the workplace through training and development needed for the appropriate use of Generative AI (i.e., ChatGPT) in higher education and industry-specific professions. HRD practitioners will need to establish Virtual HRD best practices for AI institutional and organizational policy by the integration of Generative AI (i.e., ChatGPT, OpenAI) in work processes, policies, and procedures by setting boundaries of AI usage in the workplace to maintain privacy of company data and provide examples of what is acceptable and what will result in termination from the organization. Gen Z employees need to understand how to responsibly use Generative and OpenAI as we are moving from enterprise AI

(i.e., chatbots, Amazon supply shipping, Google search, etc.) to Learning Language Models, OpenAI, and Generative AI models in the workforce (Al-Sharafi et al., 2023).

Third, this study's findings strongly suggest that HRD practitioners get ahead of the curve by engaging generational cohorts through collaboration and innovation in the evaluation of digital literacy competency for employee annual appraisal. Supervisor participants shared that their organizations were currently having conversations about how to approach digital literacy competency in their evaluation process, especially with so many different levels of digital literacy in the workforce. HRD practitioners through a collaborative strategic process have the opportunity of aligning Gen Z employees with the strategic decision-makers in organizations to accomplish this task (Graczyk-Kucharska et al., 2022). This will also involve increasing the organization's digital footprint to include digital equity and digital accessibility by responding to employees' technological needs as innovation is the top value of the Gen Z cohort (Barhate & Dirani, 2022).

In summary, the practical implications for Virtual HRD are endless as Virtual HRD scholarship continues to grow. Virtual HRD will need to continue to evolve to keep the HRD profession and industry-related practitioners abreast of current and future trends as Gen Z continues to enter and progressively change the workforce (McWhorter, 2023). The use of emergent technologies in Virtual HRD to reskill Gen Z employees will likely boost employee morale, slow Gen Z employee attrition, lower their intention to quit through virtual employee engagement, and reduce the high cost associated with employee turnover (Tootle, 2020). HRD scholars have determined that industries that invest in Virtual HRD (i.e., virtual onboarding, virtual learning environments) not only reduce their carbon footprint but also save on the cost of hiring, training and development, and organizational learning per employee over time (Banton,

2019; McWhorter & Delello, 2016). Virtual HRD, a future-focused organizational strategy, builds capacity for a digitally competent workforce by putting the individual at the center of their career development (Thite, 2022).

Study Limitations

The first limitation of this study was the geographic area of focus. This study concentrated on Gen Z employees and their supervisors from the student affairs divisions in higher education institutions in the United States. Though there was one higher education institution that was classified as an international/global institution, it was located in the United States, making this a U.S.-centric study. Global Gen Z employees who work in the student affairs division at international higher education institutions were not represented in this study. The second limitation concern was the study's focus on Gen Z employees in higher education. This study focused on Gen Z employees in higher education professions and is not a full demographic representation of Gen Z employees in other disciplines, professions, and industries in the workforce. The third limitation concern was the generalization of the study's findings on the Gen Z cohort as I did not use any instrument to measure the level of Gen Z's digital literacy skills gaps. Because findings were gleamed from participant interviews and not with an instrument, my qualitative study was limited in generalizability and calls for further investigation. Due to this limitation, this study was not a full representation of the Gen Z cohort, nor were the study's findings necessarily 100% true for all Gen Z employees in the workforce or entering the workforce. The fourth limitation concerned the issue of generational labeling. Given the critique that concerned generational research by the Pew Research Center in 2023, scholars were urged not to view Gen Z through a span of years (1997-2012) but to include how they experienced changes in society, accounted for pivotal historical moments, and recognized

individual differences across their group (Gakpo, 2021; Menand, 2021; Okros, 2020; Parker, 2023; Rudolph et al., 2020). The fifth and final limitation was that I worked as a student affairs practitioner (from 2008 to 2022) relatively prior to conducting this study. I worked closely in a full-time capacity with Gen Z college students (since 2013), Gen Z full-time higher education employees (since 2017), and higher education colleagues (since 2008). My overall goal was to remain subjective throughout the entire basic qualitative process from conducting in-depth interviews with study participants, including the data analysis process. With this goal in mind, I tried my best to remain as subjective as possible, though some bias might have occurred because of my close rapport in working with the Gen Z population over the years.

Conclusion

Through a basic qualitative study design, I was able to conduct 19 in-depth interviews with Gen Z employees and supervisors of Gen Z employees to gain a deeper understanding of Gen Z employees' lived experiences of digital literacy in higher education institutions. This study sought to understand Gen Z employee participants' lived experiences regarding how they used digital literacy in the workplace, Gen Z employees' digital literacy skills gaps that existed in the workplace, and what strategies higher education institutions could put in place to close the Gen Z digital literacy skills gap for Gen Z employees entering the workforce. Gen Z employees expected the workplace to adjust training and development features to their just-in-time, on-demand lifestyles as they are used to training and development apps and web-based platforms with 24/7/365 accessibility features that allowed them to have professional development in the palm of their hand.

The Gen Z workforce, a.k.a. the future Baby Boomers of the 21st century workforce, are virtual learners who thrived in virtual learning environments, making Virtual HRD the

appropriate source for their just-in-time training and development expectations across virtual platforms. Their push to use of emerging technologies in the workplace forced other generational cohorts to upskill their digital literacy to remain relevant and resourceful as AI was introduced to the workplace. With the push of skills-based hiring by professional organizations (i.e., SHRM) and policymakers, Gen Z has been primed to enter the workforce potentially possessing the new skillset required for the 21st century workforce.

It is important for HRD practitioners to note that both pre-Covid Gen Z employees and post-Covid Gen Z students experienced digital literacy in the workplace differently than that of prior generations. Their use of emerging technologies was evident in their expectations for a tech-savvy work environment that afforded them the user-friendly, user-intuitive apps, software, and web-based platforms that they grew up with such as Google Workspace. Though born in the same generational cohort, pre-Covid Gen Z employees and post-Covid Gen Z students had vastly different viewpoints on how they experienced digital literacy in the workplace. As stated by participant E7:

> I remember I was just having a conversation with some of the students, and this is maybe more of a funny anecdote than an answer, but we were talking about emojis, and they were like, "Oh, that's the save button emoji." And I was like, "No, no, no. That's a floppy disk." And they're like, "What's a floppy disk?" I was like, "How do you not know what a floppy disk is?" And I then had to explain to them what it was. But digital literacy skills gaps exist in general. I mean, the ChatGPT thing, how I think they're more familiar with it than even I am. I also don't know if this is technology, but another thing coming to mind is the phone. We have a Cisco system phone, what you would see in any office, and I literally never use it. Which is why, I also get very anxious about using it (E7).

Though their digital literacy skills gaps included digital soft skills, virtual critical thinking, professional communication, and virtual interpersonal social skills, Gen Z employees tried to work around formal communication barriers (i.e., low-vocabulary acquisition, text talk, time management issues) through their use of virtual AI tools like ChatGPT to do the speaking

for them instead of using their own voice. To address their virtual problem solving, critical thinking, and communication skills, Gen Z will continue to use more emerging technologies in the workplace before organizations can adjust their employee handbooks. It is evident that HRD practitioners must upskill their digital literacy skills, making Virtual HRD the practical digital tool necessary to reskill the critical thinking, professional communication, and social digital literacy skills of the Gen Z workforce.

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Appendix A

IRB Approval Letter

UTTyler
THE UNIVERSITY OF TEXAS AT TYLER

DATE: 12/18/2023

TO: Ashlea Wilson, BS, MS, MS, PhD Candidate, HRD
3900 University Blvd
Tyler, TX 75799

SUBMISSION TYPE: Initial Review
PROTOCOL NUMBER: 2023-193
PROTOCOL TITLE: Examining the Digital Literacy of Generation Z Employees in Higher Education

IRB ACTION: **APPROVED**
APPROVAL DATE: 12/18/2023
EXPIRATION DATE: 12/17/2024
REVIEW TYPE: Expedited Review
CONTINUING REVIEW INTERVAL: **12**

Thank you for your ***Initial Review Submission*** for the above-referenced study. The UT Tyler Institutional Review Board has APPROVED your submission by ***Expedited Review Categories:*** Expedited Category (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Items Submitted for Review:

- ***IRB Initial Review Submission Form***
  - ***AWilson Resume.pdf (Investigator/Research Team CV or Resume)***
  - ***AWilson IRB Interview Protocol.docx (Protocol)***
  - ***Dissertation Study Recruitment Email.docx (Patient Recruitment Materials)***
  - ***Dr. Cho CV 2023.pdf (Investigator/Research Team CV or Resume)***
  - ***Interview Questions.docx (Data Collection Tools)***
  - ***Online Informed Consent.docx (Consent Form)***
  - ***Wilson_CV.pdf (Investigator/Research Team CV or Resume)***

Research Team:
Ashlea Wilson, BS, MS, MS, PhD Candidate, HRD - Investigator
Yonjoo Cho, PhD - Co-Investigator
Yonjoo Cho, PhD - Faculty Advisor

Institutional Review Board Office
1100 East Lake Street, Suite 330, Box-14
Phone: 903-877-7632
Email: irb@uthct.edu

The expedited review of this submission will be forwarded to the next available fully convened IRB meeting for acknowledgement.

All research must be conducted in accordance with this approved submission. Any changes to the research must be reviewed and approved by the UT Tyler Institutional Review Board prior to implementation, except when necessary to eliminate an apparent immediate hazard to the subject.

You are reminded that you must apply for, and undergo review, and be granted continued IRB approval for this study before the study expiration date in order to be able to conduct your study in an uninterrupted manner. If you do not receive approval before this date, you must cease and desist all research involving human subjects, their tissue, and their data until approval is granted. However, changes can be implemented if they are in the best interest of the subject due to safety evaluations or eliminating/reducing risks to them. The determination of "best interest of the subject" must be made by the IRB. Alternatively, if your study has concluded please complete the "Study Closure Form" and forward to the UT Tyler IRB Office.

Unanticipated problems and adverse events must be reported to this office in accordance with the UT Tyler Human Research Protections Program (HRPP) Standard Operating Procedures.

The UT Tyler Institutional Review Board is organized, operates, and is registered with the United States Office for Human Research Protections according to the regulations codified in the United States Code of Federal Regulations at 45 CFR 46 and 21 CFR 56. The UT Tyler Institutional Review Board operates under Federal Wide Assurance Numbers: 00003494, 00006044, and 00009775.

Any complaints or issues of non-compliance must be immediately reported to this office. If you have any questions or comments about this correspondence, please contact the IRB Office at 903-877-7632 or irb@uthct.edu

Appendix B

Online Informed Consent to Participate in Research

APPROVED
12/18/2023
IRB# 2023-193
UT TYLER INSTITUTIONAL REVIEW BOARD

The University of Texas at Tyler

Informed Consent (Online, Anonymous) to Participate in Research

Qualtrics Interview Introduction Page

You have been invited to participate in this study about Gen Z employees' digital literacy. The purpose of this study is to examine Gen Z employees' lived experiences of digital literacy in higher education institutions. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, I will ask you to do the following things:

- Confirm that you are at least 22 years of age.
- Confirm that you work in the higher education setting.
- Agree to answer all questions honestly on the Qualtrics Interview Signup Page
- Agree to be interviewed at a time that is convenient to your schedule by signing up for an interview time slot.
- Agree to review responses (member-checking) and confirm interview responses from your interview transcript.
- Confirm that you voluntarily agree to the Online Informed Consent to Participate in Research by clicking agree after reading the next page.

Appendix C

Gen Z Dissertation Study Recruitment Email

Subject: Gen Z Digital Literacy Study

Good Morning/Afternoon,

My name is Ashlea L. Wilson, and I am a doctoral candidate in the Ph.D. in Human Resource Development Program at The University of Texas at Tyler. I am conducting a research study examining Gen Z employees' lived experiences in digital literacy in higher education institutions and would like to invite you to participate in this study.

If you agree, you are invited to participate as a Gen Z employee or a supervisor of a Gen Z employee currently working in the higher education setting. The interview is anticipated to take no more than 60 minutes to complete, and the interview will be conducted via Zoom. Participation in this study is voluntary. Your identity as a participant will remain confidential during and after the completion of the study.

If you are interested in participating in this study, please click here or the link below to be taken to participant selection criteria, an online informed consent, and to select a one-hour interview time slot.

(Insert Link Here)

If you have any questions, please do not hesitate to contact me at Awilson32@patriots.uttyler.edu.

Thank you for your time and have a great day.

Sincerely,

Ashlea L. Wilson
The University of Texas at Tyler
Doctoral Candidate

Appendix D

Interview Protocol

Questions for Gen Z Employees

Introduction and Warm-up

1. Tell me a little about yourself, your work background, and professional experience.
2. Tell me about your academic background, the degree(s) that you earned and why you chose to work in higher education.

Purpose of the Study: The purpose was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice.

Definition

> Digital literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and reflect upon this process. (Martin, 2005, p. 135; Ng, 2012)

Research Question 1: Please provide a few examples of how you experience digital literacy daily in your workplace.

Research Question 2: What digital literacy skills gaps exist in Gen Z employees in higher education?

> There are six digital literacy skills, they include photo-visual digital skills, reproduction digital skills, branching digital skills, information digital skills, socio-emotional skills, and real-time thinking skills (Eshet-Alkalai, 2012).

Photo-visual digital skills

- When using a new technology are you able to look at the screen and know what to do next?
- Have you had to use YouTube, Google, or another online platform to understand how to use technology?

Reproduction digital skills

- When using technology in your role have you experienced concerns with plagiarism, copyright infringement, or intellectual property?

Branching digital skills

- How easily are you able learn new technologies? Please give me an example.
- What new technologies are important and essential to you in your role?

Information digital skills

- How confident are you in your skills when searching, evaluating, and obtaining information from the internet, social media platforms, or another online source? Please give me at least one example.
- Please describe how you navigate through issues related to web-based activities relating to cybersecurity, privacy, and safety?

Socio-emotional skills

- What is your preferred method to communicate with your supervisor, peers, and the Gen Z students you work with? Please give me an example.
- How do you stay connected with your colleagues: (i.e., in person, via email, over the phone, video chat (i.e., Zoom or Facetime), through social media platforms?
- What technologies do you use to collaborate with colleagues and peers on work projects and other workplace related activities?

- When you have a workplace dilemma do you reach out to colleagues? Or do you search for advice on social media? Or both?

Real-time thinking skills

- What are the different hardware technologies that you use on a daily or weekly basis (i.e., PC, iMac, laptop, iPad)?
- What is your level of proficiency in demonstrating your technical skills in the workplace? Is the software that you use a web-platform or an app-based platform? Such as:
    - Word Processor: Word or Pages
    - Spreadsheet: Excel, Numbers
    - Presentation: PowerPoint, Keynote, Canva
    - Video editing: iMovie, Moviemaker
    - Photo/image editing: Photoshop, PhotoScape
    - Web design software: Dreamweaver, FrontPage
    - Mobile device organizer: address book (contacts), appointments (calendar invites), work email on phone

Research Question 3: Please give me some ideas about what you think higher education institutions can do to close the digital literacy skills gaps for Gen Z employees entering the workforce?

Closing Question: Is there anything in closing that you would like to add to this study?

Questions for Supervisors of Gen Z Employees

Introduction and Warm-up

1. Tell me a little about yourself, your work background and professional experience.

Purpose of the Study: The purpose was to examine the digital literacy of Gen Z employees in higher education and provide implications for HRD research and practice.

Definition

> Digital literacy is the awareness, attitude, and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and reflect upon this process. (Martin, 2005, p. 135; Ng, 2012).

1. In your current position, how would you describe your level of digital literacy?
2. How has your level of digital literacy impacted your previous or current work experience?
3. Which type of communication media do you use more daily: virtual or face-to-face? Why do you think this is?

Research Question 1: Please provide a few examples of how you think Gen Z employees experience digital literacy in the workplace.

Research Question 2: What digital literacy skills gaps exist in Gen Z employees in higher education?

There are six digital literacy skills, they include photo-visual digital skills, reproduction digital skills, branching digital skills, information digital skills, socio-emotional skills, and real-time thinking skills (Eshet-Alkalai, 2012).

1. What do you know about Gen Z in the workplace? What characteristics do you associate with Gen Z (individuals who began entering the workforce in 2017)?
2. How would you describe Gen Z employees who work in student affairs divisions at higher education institutions?
3. What digital literacy skills do you think should be required for Gen Z employees' digital literacy success in student affairs divisions at higher education institutions?

Research Question 3: What can higher education institutions do to close the digital literacy skills gaps for Gen Z employees entering the workforce?

1. What strategies should be implemented for the reskilling of Gen Z employees' digital literacy skills?
2. From your professional experience, what are the key ingredients of successful digital literacy for Gen Z employees in the 21st century workforce?
3. In your opinion, how can we improve or reskill digital literacy for Gen Z as they are entering the workforce? What can we do differently that will prepare them for success?
4. Looking ahead, how should we design and evaluate digital literacy skill performance in student affairs divisions at higher education institutions for career success?

Closing Question: Is there anything in closing that you would like to add to this study?

VITA

ASHLEA L. WILSON

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Email: awilson32@patriots.uttyler.edu

EDUCATION

California State University, Bakersfield, Bakersfield, California 2020
Master of Science, Educational Counseling: Student Affairs

Northern Illinois University, DeKalb, Illinois 2014
Master of Science, Sport Management

University of Houston, Houston, Texas 2008
Bachelor of Science, Kinesiology: Sport Administration

INSTRUCTOR EXPERIENCE

E-learning Professional Portfolio Success Coach (UT Tyler) 2018
Passages Student Success Course Instructor (UT Tyler) 2016
Student Development Course Instructor (CSUB) 2011
American Red Cross CPR/1st Aid/AED Instructor Certification. 2010-2022

PROFESSIONAL EXPERIENCE

Southside Bank – Human Resources
AVP, Diversity, Equity, and Inclusion Officer 2022-Present

Education Service Center, Region 11 – Instructional Design
Instructional Designer for Texas Education Agency Reading Academies Project 2021-Present

The University of Texas at Tyler - University Center
Assistant Director of University Center Operations 2014-2022

California State University, Bakersfield - Student Recreation Center
Facilities & Special Programs Coordinator 2010-2014

COMMUNITY INVOLVEMENT & ORGANIZATIONAL MEMBERSHIPS

Leadership Tyler, Class 35
Society for Human Resources Management, Rose City SHRM
Hispanic Professional Association of Tyler
Rotary International, The Rotary Club of Tyler

HONORS, AWARDS & ACCOMPLISHMENTS

Rotary International, The Rotary Club of Tyler 2020-2021 Rotarian of the Year
UT Tyler President's Service Award Recipient 2020
NIRSA Region VI Horace Moody Mentorship Award 2014

NIRSA Foundation Jennifer de-Vries Professional Scholarship 2013
NASPA Region VI Dorothy Keller New Professional Award 2012

PUBLICATIONS

Fowler, D., Stevenson, R. & **Wilson, A**. (2018). Customer Service Training and its Effects on Employee-to-Employee Relationships and Work Climate: A Case Study. Journal of Management and Marketing Research.

PROFESSIONAL PRESENTATIONS (Non-Refereed)

Wilson, A. L. (2020). Supply & Demand: Providing Services with Fewer Resources. Association of Colleges & Unions International. Zoom Webinar.
Wilson, A. L. (2019). Women's Leadership Panel. Presented at the East Texas Leadership Summit. Tyler, Texas.
Wilson, A. L. (2019). Effective Leadership Panel. Presented at She. Her. We. Phenomenal Women's Conference. Tyler, Texas.
Wilson, A. L. (2018). Women's Leadership Panel. Presented at the East Texas Leadership Summit. Tyler, Texas.
Wilson, A. L. (2014). Woman to Woman: Leadership, Inspiration, & Empowerment Strategies for Success. NIRSA Annual Conference, Nashville, Tennessee.
Wilson, A. L. (2014). Navigating Professional Competencies: An "Insider's Guide" to Competent Career Development. NIRSA Annual Conference, Nashville, Tennessee. .
Wilson, A. L. (2013). What is NIRSA? SoCal Student Lead-On & Drive-In Conference. Los Angeles, California.
Wilson, A. L. (2013). Resume Building 101. SoCal Student Lead-On & Drive-In Conference. Los Angeles, California.
Wilson, A. L. (2012). Systems of Higher Education. College: Making It Happen Educational Forum. Bakersfield, California.
Wilson, A. L. (2012). Pieces of the Puzzle: Event Planning 101. CAMP (College Assistance Migrant Program) Statewide Leadership Conference. Bakersfield, California.
Wilson, A. L. (2012). Making History: Trials, Triumphs, & Tribulations of Women in NIRSA. NIRSA Emerging Recreational Sports Leaders Conference. Houston, Texas.
Wilson, A. L. (2011). Student Development Organizations: Effectively Use These Organizational Structures to Satisfy Departmental
Outcomes. NASPA Western Regional Conference. San Diego, California.
Wilson, A. L. (2011). So, Are You PRO REC or Not? The Importance of Student Development Organizations and Organizational Structures in Campus Recreation. NIRSA Annual Conference. New Orleans, Louisiana.