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Organizational Learning Support Preferences Of Millennials: An Interpretive Study

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Kevin S. Thompson, Ph.D.

University of Connecticut, 2013

Given that more than \$170 Billion is invested annually on employee learning and development in the U.S (American Society for Training and Development, 2011) it is important that training leads to improved job performance. In any organization, workers require new knowledge and skills to become productive and maintain performance over time. Millennials, who comprise the latest employee generation, are age 18-34 (Tyler, 2007) and share the same performance requirements and expectations of the generations that precede them in the workforce. Adult education and human resources development literature indicates that millennials prefer classroom, online, and blended learning experiences (Sandeem, 2008), and respond well to feedback (Gigante, Dell, & Sharkey, 2011) and learning technologies (Gavota, Cattaneo, Arn, Boldrini, Motta, Schneider, & Betrancourt, 2010) when used to support learning. In addition, there are many theoretical articles that propose what organizations should do to support learning for the millennial generation (Kirkland and Sheehan, 2010).

The organizational learning supports to help millennials improve their learning in the workplace remain largely undefined. For the purposes of this research effort, organizational learning supports are the tools and resources provided by an organization to promote knowledge transfer. To efficiently and effectively meet the learning goals set forth for millennials in workplace settings, scholars must research, and learning practitioners must consider the organizational learning supports that millennials prefer for learning.

To address this challenge, I explored the organizational learning support preferences of millennials in the workforce in a for-profit, high-technology corporation. High-technology role complexity requires significant learning for employees which created a fertile research environment. To establish a viable foundation for my research in a corporate environment, I identified a conceptual framework that incorporates the learner, learning experiences, and environmental (organizational) factors. One research question guided this study: What are millennials' organizational learning support preferences? The study utilized an interpretative qualitative design (Merriam, 2002), that uncovered the experiences millennials had with organizational learning supports to understand which supports they prefer. The sample of ten millennial participants was purposeful and generated from a list of 100 employees participating in a corporation's leadership development program. Data was collected via two semi-structured interviews with eight participants and one semi-structured interview with two participants. Data was analyzed inductively using a constant-comparative method and yielded three themes: (a) millennials appreciate big-picture understanding, new information, and rapid application to help them learn and perform on the job, (b) millennials prefer having the option to learn independently or in small groups to deepen their understanding of new knowledge, and (c) millennials want resources that provide answers to questions that fill knowledge gaps. By gathering participant data regarding millennials' organizational learning support preferences, the body of adult education and human resources development literature can expand and learning practitioners in organizations can propose and offer learning supports that align with millennials' preferences to improve learning for this latest generation of workplace employees.

Organizational Learning Support Preferences Of Millennials: An Interpretive Study

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BS, Central Connecticut State University, 1981

MS, Rensselaer Polytechnic Institute, 1986

A Dissertation

In Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

at the

University of Connecticut

2013

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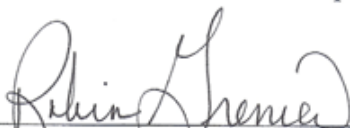
Doctor of Philosophy

Organizational Learning Support Preferences Of Millennials: An Interpretive Study

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As I tried over the years to impart and influence strong values in my children, three precepts have been consistent. There are precious few items we have complete cognizance over as people of the world and they are: your education (what you know), your integrity (how you behave), and your faith (what you believe in). For me, the doctor of philosophy academic journey is a demonstrable example of being accountable for what I know and for that journey I am deeply indebted to some very kind and giving people:

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Chapter One

Introduction

In today's global economy, driven by open markets and competition, maximizing workforce productivity is imperative for organizations. John Strangfeld, Prudential Financial, Inc. chairman of the board and chief executive officer, stated in his 2011 chairman's letter, "All employees are being asked to embody a talent mindset, one that instills a sense of individual responsibility for personal and professional development, as well as for the nurturing of others" (Prudential 2011 Annual Report, p. 6). In any organization, including for-profit entities, people require new knowledge and skills to become productive and maintain performance over time.

In 2010, U.S. organizations invested more than \$171 billion in employee learning and development (American Society for Training and Development (ASTD), 2011). Since more than \$50 billion is spent annually on formal training for all employees, "it is important for organizations to ensure that training leads to desired work outcomes such as increases in job performance" (Velada, Caetano, Michael, Lyons, & Kavanagh, 2007, p. 283). More than \$35 billion is expended annually in learning and development to support millennials in their new roles (Simply Hired, 2012; see also Woods, 2011). According to Dan Schwabel (2012), a millennial career expert and founder of Millennial Branding, a millennial generation research and consulting company, there are 40 million millennials currently in the workforce. Since each dollar spent on training reduces net income in for-profit organizations, it is important that training, learning, onboarding, and new employee orientation investments (ASTD, 2011) enhance performance that increases net income.

The latest worker generation is from a group born between 1978 and 1999 commonly referred to as millennials (Tyler, 2007). Like the generations that preceded them these

millennials, as they enter the workforce, will need to effectively gain new knowledge and skills to be successful in new roles and as their job responsibilities change and increase. Millennials in the workforce need professional, industry, process, compliance, customer service, and leadership skills to work successfully in for-profit organizations (ASTD, 2011).

Problem Statement

Millennial employees have a strong desire for rapid career progression, and this motivates them to use available learning opportunities to meet job requirements (Sandeem, 2008). Existing research indicates that millennial learners have definite preferences regarding the design and format of learning experiences. Millennial generation learning preferences are those that the generation is predisposed towards using to support their learning (Sarasin, 2006). Millennials prefer classroom, online, and blended learning experiences (Sandeem, 2008), and respond well to feedback (Gigante, Dell, & Sharkey, 2011) and learning technologies (Gavota, Cattaneo, Arn, Boldrini, Motta, Schneider, & Betrancourt, 2010) when used to support learning.

However, organizational learning supports, which are, “the practices and tools the organization provides its people individually and collectively for them to perform their work successfully and efficiently,” (Gottfredson & Mosher, 2011) remain largely undefined for the millennial generation. Although learning practitioners in for-profit organizations may understand the typical characteristics of millennials in the United States, much supposition and little research exists to guide the use of organizational learning supports for millennials. The research on millennials that does exist relative to feedback and learning technologies is typically based in university student studies, not in the workplace. Furthermore, the theoretical suggestions for additional learning supports for millennials by in large are not based in empirical research.

Today, learning practitioners use organizational supports like training manuals, process sheets, and job aids; feedback and learning technology research; and theoretical assumptions to support millennials' learning without knowing whether millennials prefer these supports to improve their learning. The lack of applicable workplace organizational learning support research inhibits scholars from providing learning support insight throughout the millennial generation's career, not just in college settings where most learning support research has been conducted. Failure to understand, design, and implement organizational learning supports preferred by millennials can sub-optimize their learning outcomes and resulting work performance (Brinkerhoff & Apking, 2001). Sub-optimized workplace learning is a lack of full new knowledge and skill retention which prevents or slows the ability to perform work assignments which in turn reduces the value of training investments (Gottfredson & Mosher, 2011).

Because of the high volume of millennial workers entering and in the workforce (Schwabel, 2012), the challenge is to quickly develop and provide organizational learning supports that improve learning outcomes for this latest generation of employees. The problem for learning practitioners in the workplace is to better support learning for the millennial generation in order to enhance organizational performance. To address this challenge, I explored the organizational learning support preferences of millennials in the workforce in a for-profit, high-technology corporation in the United States. The setting for the study was appropriate because there are over two million high-technology industry employees (American Society of Mechanical Engineers, 2012) and over 11 million workers in manufacturing establishments (U.S. Department of Labor, 2010). High-technology role complexity requires significant learning for employees, which created a fertile research environment. To create a viable foundation for my

research in a corporate environment, I identified a conceptual framework that incorporated the learner, learning experiences, and environmental (organizational) factors.

Conceptual Framework

Following a review of learning transfer literature, I determined that the Trio Model of Adult Learning (Sheckley, Kehrhahn, Bell, & Grenier, 2007) provided a viable framework for considering organizational learning support preferences to improve learning outcomes for millennial employees. Conceptually, the Trio Model aligned well with this research because the goal was to understand millennial adult learner preferences that pertain specifically to key experiences in a learning environment.

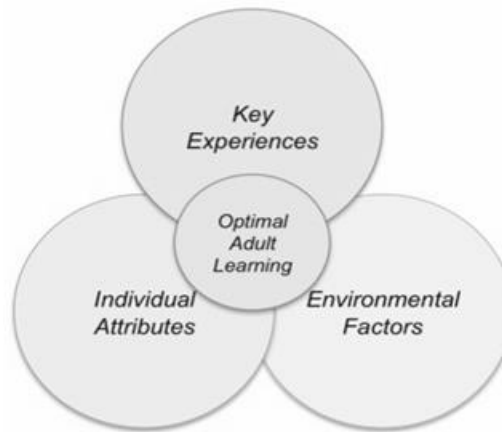


Figure 1. Trio Model of Adult Learning (Sheckley et al., 2007)

The model focuses on a triad of interrelated components that enhance professional learning: individual attributes, key experiences, and environmental factors or supports. The Trio Model was selected because of its focus on the adult learner as an individual, key experiences that the organization designs for the learner, and environmental factors that influence learning within the organization (Sheckley et al., 2007). Individual attributes include learners' mental

models; key experiences involve deliberate practice and focus on robust problems of practice; and environmental factors include a diversity of learning supports (Sheckley et al., 2007).

Individual attributes include mental models, which are defined as “inventions of the mind that represent, organize, and restructure domain-specific knowledge” (Seel, 2001, p. 408). Each learner has unique mental models that contain values and beliefs, and conceptions of knowledge and skills that create perspectives that filter and guide information, learning experiences, and problem solving (Eckert & Bell, 2005). Mental models continuously refine and expand as new knowledge is constructed. The expansion process occurs as new information is experienced which adds breadth and depth to the existing model. New information can expand the mental model through analogical thought. This structural building process connects new information with existing knowledge to expand the scope of the model (Hofstadter, 2001). A persistent challenge for scholars and practitioners is to support expanding each learner’s unique mental models with new knowledge and experiences that are often delivered uniformly to a large number of learners simultaneously. Brinkerhoff and Mooney (2008) suggest offering insight that helps to connect unique mental models with new knowledge by answering four key questions for learners prior to each new learning experience:

1. What am I going to learn?
2. How will I apply what I’m going to learn?
3. How will I benefit from what I’m going to learn?
4. How will the organization that I work within benefit from what I’m going to learn?

Creating a line-of-sight by answering the four key questions for learners helps to position learners to more positively take in and apply new information and as such, expand their mental models (Brinkerhoff & Mooney, 2008).

The key experiences of the Trio Model involve deliberate practice independently or in small groups, and focus on robust problems of practice (Ericsson & Charness, 2006; Antonacopoulou, 2000; Feichas, 2010; Draskovic, Holdrinet, Bulte, Bolhuis, & Van Leeuwe, 2004; Ford, Smith, Weissbein, Gully, & Salas, 1998; Gully, Incalcaterra, Joshi, & Beaubien, 2002). Ericsson and Charness (2006) detailed the practices and value associated with deliberate practice consisting of the use of new information to perform tasks. Antonacopoulou (2000) researched employees' independent learning in three retail banks, and found, "individual employees have the power to choose what to learn and how to develop themselves," (p. 501) which resulted in mutual benefit to the individual and the bank. Feichas (2010) focused on the importance of deliberate practice while learning independently to acquire understanding and skill related to individual performance. Specifically Feichas' work looked at independent mastering of a musical instrument prior to successfully participating in musical performance ensembles. The value of independent musical instrument learning is akin to an engineer gaining individual aptitude in an engineering skill that produces a component. Learning independently supports working independently just as learning in small groups supports working with others in teams and on projects.

Learning in small groups has been widely studied including Gully et al. (2002) who focused on team-efficacy, potency, and performance. Draskovic et al. (2004) proposed various approaches to generate value from small group learning including the use of tutors who facilitate questioning and offer mini-lecturing and expertise. Brindley, Walti, and Blaschke (2009) looked at the interplay between small groups and learning technology and found "learners are not passive receptacles but are active in their process of knowledge acquisition as they participate in discussions, search for information, and exchange opinions with their peers" (p. 3). Regardless of

whether key experiences involve independent or small group learning, Ford et al. (1998) proposed the use of robust practice and interactions that focus on mastery to increase the depth of knowledge transfer and application to maximize mental model growth.

Environmental factors include learning supports like the Internet, intranet, and knowledge management systems (Bakken, 2002), feedback (Bakken, 2002; Ericsson & Charness, 2006; Ford et al., 1998), and social contexts like instant messaging (Timmis, 2012), or communities of practice (Grenier & Kehrhahn, 2008). The organizational learning supports researched in this study exist both in the key experiences and environmental factors of the Trio Model of Adult Learning (Gottfredson & Mosher, 2011; Sheckley et al., 2007).

The Trio Model (Sheckley et al., 2007), the conceptual framework for my research, led me to the literature, first to demonstrate that millennials have learning experience preferences and second, to establish gaps in the literature related to identifying millennials' learning preferences. The sections that follow convey findings from previous research that substantiate that millennials have learning experience preferences, react to organizational learning supports, respond to feedback, and use technology to learn and work. In addition, I will introduce a sample of theoretical articles that suggest appropriate millennial organizational learning supports and a concept map that graphically represents existing millennial learning support evidence and the gap in the literature from which my research question emanates.

Millennials Have Learning Experience Preferences

Before initiating research regarding the preferences ascribed to organizational learning supports by millennials, I establish that this generation has preferences related to learning experiences. Sandeen (2008) focused on 1241 University of California, Los Angeles (UCLA) extension students and prospective students to determine if millennials show greater interest in

career-related programs and graduate school online learning formats over classroom, electronic, and social networking channels to learn. Sandeen (2008) used an online quantitative survey utilizing conjoint analysis to simulate real-world purchasing. The conjoint analysis forced respondents to make a choice between two sets of product attributes, each of which had five options. The quantitative research approach yielded judgments about what was important to students and what combinations of attributes generated the most value.

Based on returned surveys from 1241 of 14,950 University of California, Los Angeles (UCLA) extension students and prospective students Sandeen (2008) found millennials desire career advancement knowledge and learning for fun and enrichment. They prefer classroom-based evening programs and blended classroom and online programs. Online programs ranked last in preference despite millennials' perceived technological focus (Sandeen, 2008; Gavota et al., 2010). Connecting and networking with people was important to 51.3% of millennial respondents. Classroom-based evening learning was preferred by 55.1% of millennials, while combining classroom and online learning was a preference for 53.0%.

Roehling, Vander Kooi, Dykema, Quisenberry, and Vandlen (2011) performed research with 43 sophomores and juniors, from 18 to 21 years old, at a Michigan undergraduate college to determine how to engage millennial students in participative learning discussions. Students in six focus groups agreed that discussions, “make learning more active; result in deeper understanding of the material; and, promote perspective taking” (Roehling et al., 2011, p. 2). The researchers found that discussions initiated by professors help maintain attention and engagement, and help students come to their own conclusions.

College professors play a key role in facilitating widely participative discussion (Roehling et al., 2011). Roehling et al. (2011) found that since most students will not offer a

perspective if they think the professor will not agree with them, discussion is encouraged if professors affirm diversity of thought and explicitly encourage hearing what students have to say. Students are reluctant to offer an opinion that is not within their perception of mainstream thinking. When diverse thought is raised in discussion, faculty should show strong support to encourage more robust discussion. Students also appreciate professors who moderate discussion and mitigate heated exchanges, as well as demonstrate warmth and informality in classroom settings. The receptive and supportive discussion environment was shown to enhance student self-efficacy.

Blashki, Nichol, Jia, and Prompramote (2007) explored ideas, risk, and creativity to understand the choices and preferences of 36 Deakin University engineering students aged 18-25. Fifty-three percent of respondents strongly or somewhat desired time to explore ideas with other students while doing university work to ensure sufficient elaboration of ideas. Support and recognition of ideas by mentors, teachers, and peers was strongly or somewhat supported by 81% of those surveyed. Supported risk taking was strongly or somewhat preferred by 50% of the engineers who participated. Freedom to develop new ideas was strongly or somewhat strongly a preference for 89% of the participants. The strength of the survey responses indicated clear alignment of student preferences with learning activities such as idea generation, elaboration, and feedback.

Broadbridge, Maxwell, and Ogden (2007) studied the career perceptions and employment expectations of graduate students in United Kingdom (UK) retailing. Qualitative research involved 33 millennial students from two UK universities. The research components included focus groups and individual interviews, all of which were recorded and transcribed verbatim. Analysis of the scripts identified commonalities and produced themes. Broadbridge et al. (2007)

found that millennials want a job that they enjoy and that provides inner satisfaction, professional-personal balance, and a 40-hour work week. Millennials are willing to be flexible and focused to support career growth. While maintaining an open mind regarding career development opportunities, they have significant interest in a more traditional, linear career path.

Millennials expect employers to invest in their development (Broadbridge et al., 2007). Millennials anticipate specific development support, with comments such as “You expect them [retail employers] to have a training and development plan set for you,” and, “I would like to be respected and supported [through training],” (p. 537). For millennials, there is notable interest in putting what they learn into practice according to how they think work should be performed, not as a robotic workforce.

In conclusion, millennials desired learning experiences that align with their preferences. Sandeen (2008) found millennials have a clear preference for classroom and blended classroom learning events. Roehling et al. (2011) found that millennials wanted to engage in facilitated, deep learning discussions, and Broadbridge et al. (2007) determined millennials expected training and development plans when entering new roles. Millennials had clear expectations regarding idea generation and learning support (Blashki et al., 2007).

Millennials React to Organizational Learning Supports

Perceived Organizational Support (POS) is the extent to which employees believe learning support assistance will be available when needed (Rhoades & Eisenberger, 2002). When adult learners think organizational support for learning, including feedback and learning technologies will be available, and it is, learning is enhanced. In 2002, Rhoades and Eisenberger confirmed enhanced learning as a result of POS through a meta-analytic literature review of 70 related articles.

A significant empirical research effort that tested the impact of POS on learning was performed by Hochwarter, Treadway, Witt, and Ferris in 2006 on two samples of 135 and 155 customer representative employees at two different organizations. The researchers hypothesized that when POS was high, learning and resulting performance would increase. There was a small to medium effect of high POS on performance from both samples (Sample 1 $ES_{sm} = .21$, Sample 2 $ES_{sm} = .27$) indicating a positive relationship between organizational performance support perceptions and resulting performance.

Rouiller and Goldstein (1993) researched organizational transfer climate and learning and performance outcomes for management skills including food handling procedures, payroll administration, and customer service in a fast-food franchise chain. The authors identified learning supports, including goal, social, task, and self-control cues, they thought would enhance learning outcomes. Providing self-control cues for the 102 millennial trainees that participated in the quantitative research resulted in a medium positive effect ($ES_{sm} = .67$) on learning outcomes. Perceived organizational support and learning supports improved learning outcomes and performance. While learning supports as a whole are recognized for improving learning, there is scant research regarding the organizational learning supports millennials prefer with the exception of some studies of university millennial-aged students regarding feedback (see Blankenstein, Dolmans, van der Vleuten, & Schmidt, 2009; Goomas, Smith & Ludwig, 2012; and Wang, Peng, Cheng, Zhou & Liu, 2011) and learning technologies (see Gavota et al., 2010; Jones, Ramanau, Cross, & Healing, 2010; Margaryan, Littlejohn & Vojt, 2011; and Spiegelman & Glass, 2009). These studies indicate that millennials preferences for organizational learning supports do result in increased work performance.

Millennials Respond to Feedback

Feedback is long-documented as an organizational learning support that improves learning (Bakken, 2002; Ende, 1983; Ericsson & Charness, 2006). Feedback is information that describes performance and is intended to improve future performance (Ende, 1983). To have an impact on performance, feedback should be specific, timely, and objective (Gigante et al., 2011), can include actual versus target performance (Goomas et al., 2012), and specific performance measures and accuracy (Northcraft, Schmidt, & Ashford, 2011).

Several empirical studies establish the impact of feedback on millennials to improve learning and performance outcomes. Goomas et al. (2012) investigated the use of feedback to increase warehouse worker performance. The impact of feedback availability and the time spent on tasks was studied by Northcraft et al. (2011). Wang et al. (2011) checked on how feedback provided through social interactions improved millennials' perceptions of online learning courses. Blankenstein et al. (2009) researched how adding discussion to text reading improved millennial student recall, and Hills, Ryan, Smith, and Warren-Forward (2011) studied teacher insights, including the value and use of feedback, for millennial occupational therapy students. These studies combine to show use, application, and impact of feedback by millennials primarily in university and not workplace settings.

In a warehouse setting, Goomas et al. (2012) studied order fulfillment process times and the impact of providing real-time, actual-to-target performance feedback. The researchers hypothesized that if warehouse workers knew how they were performing against timeliness expectations, production would increase to achieve established targets. The 48 employees, aged 18-39, who participated in the study worked on one of four teams with different assignments and predetermined completion time targets. Baseline assessments determined that the teams met

fulfillment expectations 87% of the time. Feedback was provided using an electronic scoreboard that updated team performance every 20 seconds, displayed total orders filled and total orders remaining, and a color-coded timeliness measure (90-100%+ = green, 80-89% = yellow, and less than 80% = red). Installing the scoreboard increased team performance to goal an average of 9.5 points. The provisions of real-time performance data had a large effect ($ES_{sm} = .86$) on improving time-based productivity.

Northcraft et al. (2011) studied 55 University of Illinois undergraduate millennial students, 38 male and 17 female, and the impact feedback had on time spent on competing tasks. The researchers hypothesized that the quality of feedback, including timing and specificity, for given competing tasks would result in more time working on the tasks that incorporated rich, timely performance insight. Participants were asked to create as many class schedules as they could within a 35 minute period for four fictitious colleges. Each of the four colleges offered a different feedback prescription to the participant. Participants consistently worked on class schedules for the college that provided immediate and high-specificity feedback including the number of valid schedules created. The researchers found a large ($ES_{sm} = .99$) effect for high-quality feedback on discretionary task selection which supported millennials' preference for feedback.

Social interactions within learning interventions, which include feedback, likely have value to millennials in the workplace given their propensity for human interaction (Sandeem, 2008). Wang et al. (2011) surveyed 20 students, from a university in mainland China, regarding the value of live guidance, the ability to chat and consult with other participants, and group discussion throughout the online learning experience. The researchers found positive correlation between overall satisfaction with the online learning solution and the perceived usefulness of the

social context support resources. The ability to chat within the cohort had a medium effect on satisfaction ($ES_{sm} = .79$), discussion had a large impact ($ES_{sm} = 1.75$), and guidance had a very large impact ($ES_{sm} = 2.39$). The Wang et al. (2011) study found that as feedback increased from chatting to discussion to guidance, the effect on satisfaction with the online learning solution also increased.

To test the value of interacting with others and gaining feedback from them, Blankenstein et al. (2009) analyzed the recall of 70 millennial participants regarding how sound waves can be used to calculate distance. The participants were students at the Faculties of Health, Medicine and Life Sciences, Psychology, Cultural Sciences, and Economics and Business Administration, Maastricht University, The Netherlands. The control group read a text on sound waves and distance determination while the experimental group read the text and participated in a related facilitated group discussion. Administration of a test directly following the learning experiences resulted in higher scores from the experimental group participants ($ES_{sm} = .27$). Thirty days later, the experimental group scored higher again. In this study, the effect of adding interacting with others to the learning approach yielded medium effect for initial and delayed knowledge recall ($ES_{sm} = .60$ and $.53$ respectively). Remembering domain specific information, such as what millennials need to do in the workplace, is enhanced in the short and long term when interacting with others and receiving feedback about the content.

Hills et al. (2011) studied educator perspectives, including the value and use of feedback, for millennial occupational therapy students. The researchers used a survey sent to all 200 occupational therapy leaders at the University of Newcastle, Australia to capture educator personal demographics and their insights on the characteristics of millennials, and experience in educating millennial students including the use of feedback. Survey design included both closed

and open-ended questions regarding characteristics of the occupational therapy millennial students. The response rate for the survey was 62 of the 200 or 31%. Female responders counted 56 and 22 of the responses were from millennial educators.

Hills et al. (2011) found that 43% of the educators indicated millennial students liked immediate feedback and 36% had difficulty accepting criticism. The open-ended questions revealed that educators thought, “Students are often overconfident and therefore not always open to feedback.” Millennial responses to feedback often include questions about the validity of the feedback, defensiveness, and related excuse making (Hills, 2011). The Hills et al. (2011) study is interesting in that it captures educators insights regarding feedback use and value with millennial students, however the research does not extend beyond the opinions of the educators or into the workplace where feedback may carry different weight or be received in another way by millennials.

As Northcraft et al. (2011), Wang et al. (2011), and Blankenstein et al. (2011) found, feedback has positive learning impact on millennial students. Goomas et al. (2012) extended the positive impact of feedback on millennials from a performance perspective to the workplace. Hills et al. (2011) challenged the value of feedback for millennial students from the standpoint of millennial educators. The research points to the value of feedback for millennials, but is inconclusive for workplace settings as there has been limited research regarding millennial use of feedback in professional situations. Like feedback, the use of learning technology by millennials is addressed in the empirical literature and is introduced in the next section.

Millennials Use and Value Technology to Learn and Work

In today’s organizations, learning and technology appear to be inexorably linked. Leveraging technology to learn and accomplish work is an example of the Trio Model’s

environmental factors that support learning within the organization (Sheckley et al., 2007). From computers that support learning, to enhancing small group learning efforts through supporting technologies, and leveraging the potential of knowledge management systems, all workers, including millennials engage with learning technologies every day. Millennials consider computer-supported peer collaboration, whereby computers enable synchronous and asynchronous communication, useful and pleasant (Gavota et al., 2010). They think the Internet is very important, convenient, more important than a cell phone, and a serious disadvantage if taken away (Greenhow, Walker, & Kim, 2010). The millennial generation uses computers to: create digital files; create and access learning portals; perform Internet information searches, instant message, chat; and support learning (Kennedy, Judd, Churchward, Gray, & Krause, 2008). Millennials become engaged in learning games and persist with them until they meet learning expectations (Spiegelman & Glass, 2009).

Annually, Educause determines technology use by undergraduate students (Dahlstrom, 2012). The 2012 results, from more than 100,000 students around the world, stated that 86% of undergraduates own laptops, 62% own smartphones, 33% own desktop computers, 15% own tablet computers, and 12% own E-readers (2012). In terms of using technology, 74% of undergraduates said they have taken at least one course with online elements, 70% said they learn more in blended learning situations, 55% wished faculty used more simulations and games in teaching, and 54% stated they are more involved in courses that use technology students (Dahlstrom, 2012).

Jones et al. (2010) sought to determine how millennials use technology. The research team gave a 16-question survey to 534 students from five universities in England. Frequency analysis was employed to generate results. From a learning perspective, 93.6% thought accessing

course information via web 2.0 technologies was important, 89.9% considered accessing online study material important, and 70.7% believed downloading written material was crucial. Further, Jones et al. (2010) determined, “students tended to use technologies more than they were required to,” (p. 729). Additional analysis showed more use of e-mail, accessing course websites, and social networking than was required substantiating the preference millennials have for using technology.

Jones and Healing (2010) continued the Jones et al. (2010) research with a specific focus on understanding the student’s first experiences with university e-learning, use of technology and learning, transition to the university, and technology and student life. From the 2009 research, 68 students participated in phone interviews to answer interview questions. The interviews were transcribed and entered into a qualitative data analysis research tool. Transcripts were coded and revised iteratively over multiple rounds to produce themes.

Jones and Healing (2010) found that more than 87.5% of participants had slight confidence and basic skills in using presentation software, and 86.5% had slight confidence and basic skills with online library resources. When it came to writing and commenting on wikis or blogs, 40.6% of participants reported slight confidence and basic skills, and 37.7% reported slight confidence and basic skills for virtual learning environments (VLE). VLEs, used to aggregate course content and discussion, were commonplace at the universities the participants attended. When faced with the prospect of using unfamiliar technology, one participant said, “It was a little overwhelming at first, but within a couple of weeks it was pretty easy to learn” (Jones & Healing, 2010, p. 350). When participants were uncomfortable with a required technology, they used it until they became comfortable.

Gavota et al. (2010) researched whether computer-supported collaboration improved written work, while Spiegelman and Glass (2009) explored the impact of gaming technologies in computer science and math courses. How technology was used to support learning was the focus of a 2010 Jones et al. study and follow-up research in the same year by Jones and Healing (2010). Lastly, Margaryan et al. (2011) looked at how millennials use technology to learn and socialize. The examination of these research projects show that millennials do use and value technology to learn and work.

Gavota et al. (2010) researched whether computer-supported collaboration improved knowledge transfer and required less teacher involvement to improve written work. The study consisted of 22 female dental care students from Geneva, Switzerland between the ages of 18 and 22. The researchers employed the Shaver's Using the Writing with a Computer Scale (Shaver, 1990, as quoted in Gavota et al., 2010) to assess the extent to which participants enjoyed computer writing. The ICT (Information and Computer Technology) Familiarity Questionnaire was used to assess students' experience with computers and confidence in carrying out computer-based tasks. Paired t-test, means, and standard deviations were used to generate credible findings.

Computer-supported peer collaboration was significantly more important than teacher intervention in improving two writing samples. Gavota et al. analyzed the samples using four variables and a 1 to 5 scale (1 = very poor, 5 = very good) for richness of details and opinions, style correctness, grammatical and syntactical correctness, and the impact of comments received. Using the Writing with a Computer Scale, for the first sample $t(30) = 2.13$, $p < .05$, and for the second $t(30) = 4.1$, $p < .0$, (Gavota et al. 2010, p. 503). Corrected effect sizes for the first and second writing samples were .77 and 1.70 respectively indicating strong difference in both

samples. The quality of work resulting from integration of peer-suggested revisions was significantly higher than starting samples ($Mdn = 4.34$, $z = -3.41$, $p < .01$, $r = -.62$) (p. 505). Millennials appreciated the technology for peer collaboration to help them increase writing performance.

Spiegelman and Glass (2009) investigated the use of gaming technology in math and computer science courses. Specifically, they were interested in understanding whether gaming provided participants with sufficient interest and incentive to build research skills and subject matter knowledge. The researchers used an action research method for 2 years and 12 courses to analyze millennial students' gaming interactions and outcomes, and used student and researcher discussions, researcher reflections, student outcomes, and course-to-course comparisons to generate research data.

Participants experienced a steep learning curve when encountering academic games for the first time (Spiegelman & Glass, 2009). Once basic game understanding was achieved, students engaged and performed to meet expectations. The researchers noticed that games allow students to practice until they achieve mastery, and that games engage students until they are successful with learning goals. Spiegelman and Glass (2009) concluded, "By immersing students and challenging them at the same time, games augment curriculum and facilitate learning," (p. 284).

Margaryan et al. (2011) investigated the extent to which university students employ digital technologies to learn and socialize. The researchers employed a mixed methods research approach to gather information from 160 millennial, third-year social work and engineering university students. The quantitative research used a four-section questionnaire that queried student background, use of technology on a specific course, technology used for learning related

to the specific course, and technology used for socializing and recreation. Questionnaire data were analyzed by SPSS to generate frequencies and extrapolate descriptive statistics from the data to run non-parametric analyses including chi-square, Man-Whitney U statistics, and Spearman's correlation. Qualitative research consisted of semi-structured, individual one-hour interviews with eight students who completed the questionnaire. Students were asked to describe their use of technology and provide insight regarding the educational value of technology. Each interview was transcribed, coded, and analyzed for common themes and topics. Quantitative and qualitative outcomes were compared and contrasted to build credibility.

Margaryan et al. (2010) found very high ownership of mobile phones (100%) and personal (77.6%), handheld (6.7%), and laptop (66.4%) computers. Portable media players were owned by 73.1% of respondents and game consoles by 54.5%. Using Spearman's rho as an effect size representation, for engineering students there was a positive relationship between technology tools used in informal and formal learning ($r_s = .59, p < .05$), formal learning and recreational use ($r_s = .25, p < .01$), and informal learning and recreational use ($r_s = .46, p < .001$). Social work students, however, only showed a significant relationship between tools used in formal and informal learning ($r_s = .46, p < .05$). Engineering students were likely more comfortable with computers and technologies, which increased their use in learning and recreation over the less technology-comfortable social work students.

Ownership of various technologies and access to the Internet is very high amongst the millennial generation (Jones et al., 2009; Margaryan et al., 2010). Millennials regularly use technologies more than they are required in university settings (Jones et al., 2010). When millennials encounter unfamiliar technologies, they practice with them until they become comfortable with their use (Jones & Healing, 2010). Engineering students who used computer

technology frequently used it more in learning efforts than less technology-savvy social work peers (Margaryan et al., 2011). Millennials as a generation however, are not homogenous in their use and appreciation of new technologies (Jones et al., 2010).

The learning technology studies in this chapter included the use of technology in learning settings (Jones et al., 2009), computer-supported peer collaboration (Gavota et al., 2010), gaming (Spiegelman & Glass, 2009), and technology-based social learning interaction (Margaryan et al., 2011). The studies combine to show that millennials' learning and work is supported by using technology provided within the organizational environment. The research outcomes underscore the positive application of learning technology by millennial students, but do not answer which supports this generation prefers, and because the available research was performed primarily in university settings, it does not determine preferences in the workplace. While empirical evidence supports the constructive use of feedback and learning technology for the millennial learner, there are many additional suggestions for organizational learning supports theorized in the literature. The section that follows reveals some of the organizational learning supports propositions.

Millennial Learning Support Preferences Remain Unexplored

As the previous sections demonstrate, researchers have examined millennial preferences for some specific organizational learning supports including feedback and technology, but this is different from uncovering organizational learning support preferences, or predispositions, from the millennials' perspective. A number of authors proffer organizational learning support suggestions to improve learning for millennials. The authors that include learning practitioners, educators, university faculty, and theorists claim to know the organizational supports that will improve millennial learning. Kirkland and Sheehan (2010) proposed a combination of learning

supports for millennials including team or group work, technology, and the use of visual images. Collaborative learning, peer-led learning, supplemental instruction, problem-based learning, case-based learning, and service learning are other proposed millennial learning supports (McGuire, 2001). Wesch (2007) indicated a need for designing courses that involve students in more active learning, using technology effectively for teaching, and providing collaborative learning experiences that encourage communication among millennials. Raines (2002) suggested challenging millennials, letting them work with friends, having fun, and being flexible. Oblinger and Oblinger (2005) offered animation, virtual workbenches for experimentation, participative simulations, and three-dimensional printing as viable millennial learning supports.

These papers seem to be logically based on millennial characteristics, like millennials appreciation for technology (Gavota et al., 2010), gaming (Spiegelman & Glass, 2009), or community service (Oliver, 2010), yet I found no instance of empirical studies that asked millennials about their preferences for organizational learning supports. The gap my research intends to fill is to understand millennial preferences for organizational learning supports from the millennial perspective, and in doing so improve learning outcomes for this latest generation of employees. Because providing learning supports that conform to millennials' preferences is likely to improve their learning and performance at work, the organizations that employ this latest generational workforce will likely see improved business outcomes and success (Brinkerhoff & Apking, 2001; Harburg, 2004).

Millennial research does exist, typically limited to university students not in the workforce, which confirms the positive use of feedback and learning technologies for millennials as they learn. In addition, many scholars, practitioners, and theorists opine appropriate organizational learning supports for millennials, but no one seems to have asked millennials in

the workforce what organizational learning supports they prefer. To better understand the gap in the literature related to organizational learning support preferences of millennial learners, I created a concept map (Figure 2) to clarify thinking and conceptual connections, as well as support the development of the research question.

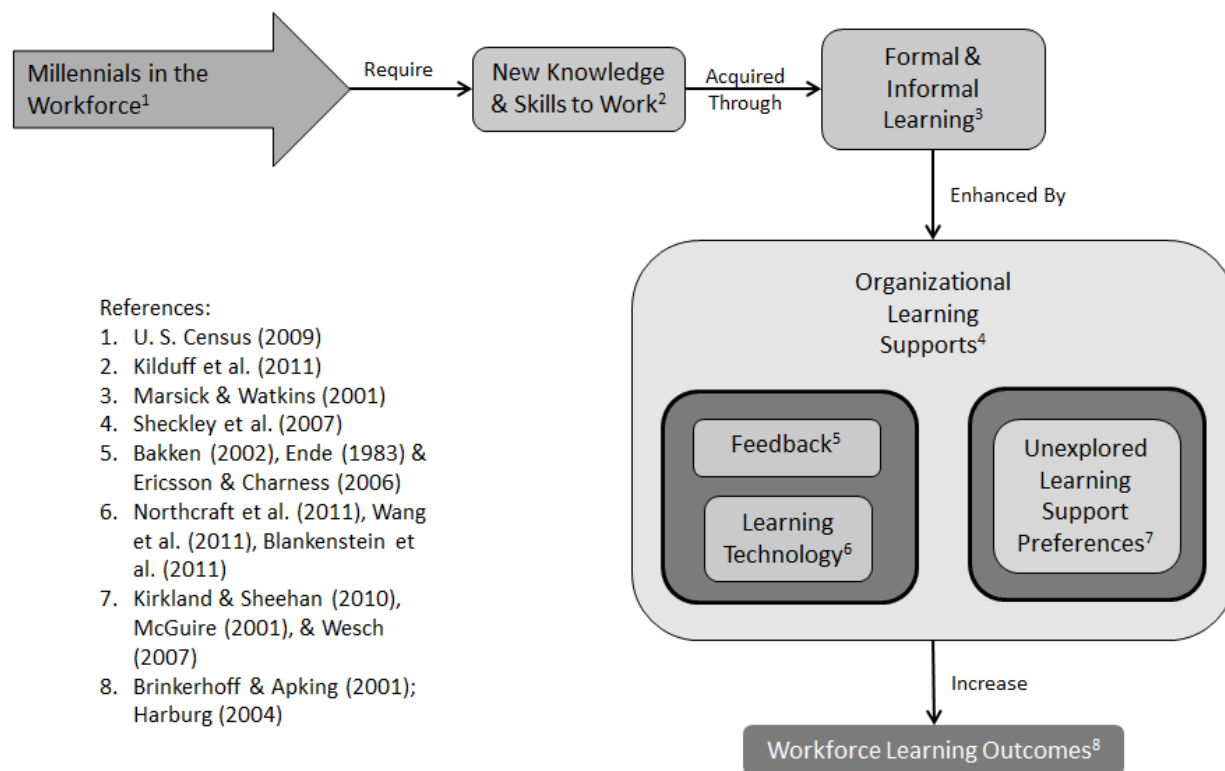


Figure 2. Millennial Learner Concept Map

Chapter Summary and Research Question

The conceptual framework proposed in this chapter is based on the Trio Model of Adult Learning which demonstrates the importance of key experiences and environmental factors to drive optimal adult learning (Sheckley et al., 2007). Both key experiences and environmental factors can include organizational learning supports to enhance learning. The conceptual framework and literature review led to the development of a concept map which graphically

identifies the research opportunity related to understanding millennials preferences for organizational learning supports to increase workforce learning outcomes.

The problem for learning practitioners in the workplace is to better support learning for the millennial generation in order to enhance organizational performance. As a first step in addressing this problem, I qualitatively explored millennials' experiences with, and preferences for, organizational learning supports by asking, “What are millennials’ organizational learning support preferences?” Chapter Two details the methodology used to execute my qualitative study.

Chapter Two

Methods and Procedures

This study was designed to explore millennials' experiences with, and determine preferences for organizational learning supports in a for-profit corporation. This chapter includes details regarding the research methods, communication techniques, and data collection and analysis procedures used to conduct and enhance the study, including the sample selection and demographics. Also described are the analysis processes used to develop the findings discussed in Chapter Three. Chapter Two concludes with the approach used to maximize the trustworthiness of my research effort and findings.

Within this dissertation's proposal there was a second research question: Which organizational learning supports are perceived to be valuable for millennials' learning? As the research interviews unfolded participants spoke of preferences for organizational learning supports that were desired, expected, valued, or preferred. Since the maximum value can be derived from my research by establishing the organizational learning support preferences of millennials, whether they are desired, expected, valued or preferred, the original second research question was deleted from the study.

Methodology

For this research effort, I employed a basic qualitative approach focused on gathering information about a single concept (Creswell, 2012), which was exploring the use of organizational learning supports including tools and practices (Gottfredson and Mosher, 2011) with millennials (age 18-34) (Tyler 2007) in a workplace setting.

I used a series of interviews to collect the data that comprise the research study and answers the research questions (Creswell, 2012). The basic qualitative research approach using

interviews was ideal to answer my research questions because the approach solicited an open-ended response that allowed my millennial participants to voice their experiences with, and preferences for organizational learning supports unconstrained by any perspectives that I had or previous literature suggested (Creswell, 2012). The interview approach consisted of, “Open-ended questions and probes [which] yield in-depth responses about people’s experiences, perceptions, opinions, feelings and knowledge. Data consist of verbatim quotations with sufficient context to be interpretable.” (Patton, 2002, p. 4).

Setting

The setting for my study was a global, high-technology design and manufacturing for-profit, public company located in the Northeast United States. High Technology Company (HTC) requires skilled employees and leaders to achieve market success in a highly competitive environment. Of the 71,000 HTC employees a subset are categorized as high-potential and participate in a multi-year Leadership Development Program (LDP). The LDP is comprised of about 100 participants who are trained in a variety of leadership competencies to become prepared for future HTC leadership roles. HTC was selected for my study setting because the organization has a suitable population of millennial employees and HTC leaders, whom I knew, were interested in supporting my research as well as understanding and benefitting from the results, which provided a convenient sample (Creswell, 2012).

HTC LDP attendees were selected from existing staff and new employees by the HTC corporate human relations (HR) team and business leaders. Selection involved an informal assessment of leadership skills and potential, teambuilding interactions, influential communication capability, presence, and fit with HTC culture and values. Each LDP program has a second round recruiting event where all potential attendees are brought to corporate

headquarters for an interview/case study activity as well as a networking dinner, which allows comparison of candidates with a goal of selecting the best of the best. HTC leaders and LDP support staff participate in the second round recruiting activity and select the final program attendees.

Sample

I used a purposeful sampling approach (Creswell, 2012) to select LDP participants for my study. All LDP participants were invited to participate in the research project interviews via email (See Appendix A). In the email invitation I instructed LDP participants to contact me via email if they wanted to participate. Of the 15 affirmative email responses I received, the interested research participants provided me with an indication of age range (18-25 or 26-34), educational background, and gender and confirmed the availability of time to participate in both research interviews.

I estimated that a range of 10-16 participants would be sufficient to achieve data saturation based on Boyd's (2001) sample size proposition for similar qualitative research. Since the perspectives of women and other oppressed groups are not adequately represented in human resources development studies (Bierema & Cseh, 2003) I desired no more than 60% male participants. I tracked the date and time of each email response and classified all volunteers according to age and gender. I reviewed each email response in order of receipt and selected the first 11 individuals who provided a millennial representation across my desired age and gender sample characteristics. The result was a purposeful sample of LDP trainees with six trainees age 18-24 and five age 25-32, and a total of four females.

One female participant dropped out of the study before any interviews took place due to scheduling conflicts. The result was five trainees age 18-24 and five age 25-32; three female and

seven male. Two female participants did not participate in the second interview because they were unresponsive to interview requests. Data saturation was achieved during the 10 first and eight second interviews and as such the inability to hold two second interviews did not impact research results.

Participants

Table 1

Participant Demographics

Name	Gender	Age Group	Degree Held	Current Residence	Interview One	Interview Two
Pierce	M	26-34	Graduate	Massachusetts	√	√
Miles	M	26-34	Graduate	Virginia	√	√
Glen	M	26-34	Graduate	Massachusetts	√	√
Dell	M	18-25	Graduate	Colorado	√	√
Capri	F	18-25	Undergraduate	California	√	√
Red	M	26-34	Graduate	Maryland	√	√
Lance	M	18-25	Undergraduate	Massachusetts	√	√
Kingston	M	18-25	Graduate	Arizona	√	√
Carrie	F	18-25	Graduate	California	√	-
Ally	F	26-34	Graduate	Arizona	√	-

Participant profiles follow that include age information, HTC tenure, and educational background from the first interview and general insights gathered from all individual interviews.

Pierce

Pierce was an electrical engineer at HTC and who held undergraduate and graduate degrees in electrical engineering. Prior to joining HTC eight years ago, Pierce was an intern at another high-technology company in the Northeast. He recently assumed some managerial responsibilities for research and development programs and was focused on his personal success and the contributions he made. Although not overtly driven by supporting organizational success,

he was confident that if he did his best work the company would benefit. Pierce was both thoughtful and insightful when it came to learning to improve his performance and was quick to challenge the status quo by offering new and better solutions. He was comfortable working with superiors and subject matter experts (SMEs) because he was confident that his questions were well-informed and his ideas were meritorious.

Miles

Two years ago Miles, 31, completed his MBA and was at HTC since then. Prior to his work at HTC as a pricing analyst on the finance team, he worked for a large, global consulting firm and was in the military. Miles was a deep thinker who demonstrated confidence in his responses to questions and when appropriate, paused and noted those questions that required more reflection and insight. He was comfortable with his position and did not have a strong need to impress his coworkers or superiors. His commitment to improving the performance of others through coaching and mentoring was quite evident.

Glen

Glen was 28 years old and was with HTC for six years after graduating from college with a BS in electrical engineering. During his time with HTC, Glen has worked in research and development and earned his electrical engineering master's degree. Glen appeared to be quite serene and handled work challenges, assignments, and my questions with considerable ease. Each step he took, or response he offered, seemed logical and consistent for him. Glen appeared to have a good grasp of HTC culture, success criteria, and how to work with others to achieve his goals.

Dell

Dell was in the 18-25 age group and was with HTC for two years. Dell had an undergraduate degree in computer engineering and a graduate degree in computer science. He was involved with systems security and had invested in learning at HTC to support his continuing professional focus in that field. Dell was deliberate and seemed to carefully understand each interview question prior to responding. He provided sufficient information in responses and was open to further probing. His interest and commitment to time management in his work was quite apparent during the interview process.

Capri

Capri had been at HTC for two years, was in the 18-25 age range, had an undergraduate degree, and worked as a customer contracts specialist. Capri was growing her opinions of workplace success, career planning, and how she and her work fit within a corporate structure. Her opinions about learning, best learning methods, and organizational learning supports appeared to be in their infancy. At times, responses to my questions and probes were “I guess.” Capri’s consistent focus was on doing good work which benefitted HTC and the customers she supported. She was not particularly motivated by performance that supports her career growth, compensation, or personal recognition.

Red

Red was an engineering program manager at HTC. He held an undergraduate degree and a PhD in engineering. After deciding not to continue pursuing an academic career, Red joined HTC and was accepted into the LDP. To say Red was ready for each of our interviews is an understatement. To maximize our time together, I emailed the questions for the second interview to each participant prior to meeting. Red prepared detailed responses to each question prior to

our interview. When responding to my probes, Red ensured full probe understanding, paused and then presented his perspective accordingly. He indicated “good” question a few times when he resonated with a probe.

Lance

Lance was in the 18-25 age range, worked in cost reporting and had strong working knowledge of how he best learned. For him, there was a strong need for reference materials and on-call SME expert support. Lance grasped his learning process so well, that he identified and retained reference material locations so he could access them at will. For self-identified reasons of career advancement, Lance wanted to meet and exceed the expectations of his coworkers and bosses. Lance was articulate and responded to questions succinctly and with purpose. It was easy to understand his perspective and he was able to provide more color as necessary to make a point or add clarity.

Kingston

Kingston, was an electrical engineer at HTC, was 24, and from the Caribbean Islands. He had a pragmatic approach to his work and managing his career, both of which were important to him, as was proper compensation for his HTC contributions. He worked for another high-tech company prior to joining HTC in December 2010 when he finished his master’s degree in electrical engineering. Kingston enjoyed learning independently to prove to others how capable he was. There was a strong sense of self-pride and achievement from working and learning independently. Independence aside, Kingston liked to learn in a team environment and appreciated an intimate, fun relationship with close co-workers and SMEs. His well-formed thoughts and opinions were based on his experience and self-reflection.

Carrie

Carrie initially became aware of HTC through very informal networking while she was pursuing her industrial engineering and engineering management graduate degree. She was in the 18-25 age range and took on an internship with HTC prior to joining the company full-time following graduation. Carrie participated in the first research interview, but did not participate in the second interview because she was unresponsive to interview scheduling requests. Her responses during the first interview were compelling and appropriate for study inclusion. Specifically, not only did Carrie appreciate how learning contributed to her success and the projects she worked on, she invested time to produce learning resources for new employees that would follow her in similar roles such that they would accelerate their learning curves and contributions.

Ally

Ally was a systems engineer who had been with HTC for six years and was in the 26-34 age range. She joined the company after learning about opportunities at a career fair and after completing an internship at another manufacturing company. Despite volunteering to participate in the study, it was tough to track down Ally for the first interview and due to lack of response to scheduling requests, it was impossible to hold the second interview. Nonetheless, her responses to the first interview questions and probes were insightful and are included in the study. Ally's thoughts about how she learns and how her learning experiences could be improved were well thought out and quite actionable. Her sense of learning success was bolstered by teaching she did in sports settings.

Data Collection

I developed interview protocols for both interviews (See Appendix B and Appendix C) that were used during the research process. Initial probes were noted for each question and expanded upon based on responses from completed interviews. I had each participant execute the informed consent document prior to the first interview (See Appendix D). All interviews were recorded after receiving recording consent from each participant. Recordings were transcribed within one to three days of each interview by a recent college graduate with a Bachelor of Arts degree in English. Extraneous words, like um and ah that did not impact meaning, were removed from the transcriptions. I validated the transcriptions with the recordings and used the transcriptions to facilitate the constant comparative analysis process and tweaks to subsequent interview probes.

Data Analysis

I employed a constant comparative analysis method (Merriam, 1998) to analyze interview data. Constant comparison was chosen for analysis because the method compares data to determine similarities and differences (Merriam, 2009). During the research process, similarities amongst all participants enabled the development of themes. I began using the constant comparative process following the first interview and continued using it throughout the analysis phase. Analytical insight gained from each interview was used to modify interview probes used in subsequent interviews to enhance, but not influence, study outcomes. For example, in an early interview I learned about the importance of relationships with SMEs. This insight was used to fully explore relationships in the interviews that followed.

To frame my analysis, I considered data relative to the conceptual framework established for this project. The framework included the key experiences and environmental factors of the

Trio Model of Adult Learning (Sheckley et al., 2007) and the ensuing literature review that demonstrated millennials have learning experience preferences and that gaps in the literature exist related to identifying millennials' learning preferences. I assigned all data to codes through an open coding process (Strauss & Corbin, 1998). I entered codes and corresponding data into an Excel[®] workbook to ease data organization and comparison. As the open coding process evolved, new codes were added. I derived a total of 65 codes from participant data (See Appendix F). As I continued the analysis, I grouped like codes and consolidated redundant codes (Patton, 2002). For example I collapsed the codes big picture, stakeholders/why, interest level, and context to become big-picture. Similarly, resource materials, concepts, and design collapsed to become new information. The subset of codes used to develop and support the research findings are listed in Appendix G.

Data Collection Timeline

The table that follows summarizes the key steps in the interview process in timeline format.

Table 2

Timeline for Data Collection

Week	Task/Data source	Appendix	Purpose	Data Analysis	Trustworthiness Strategies
1	Distributed invitation of participation to millennial employees via email	A	Purposeful selection of participants.	-	Audit trail
2	Selected millennial participants. Arrange the first interview with each participant.	-	Informed interested volunteers the status of participation	-	Reflective journal/Audit trail

3	Obtained participant consent forms.	B	Ensured participants agree to interview and security processes	-	Reflective journal/Audit trail
4-6	Researcher conducted 1st interview of millennials and transcribes.	D	RQ 1: Organizational learning support experiences and preferences	Constant Comparative Analysis	Audit trail, thick rich description, member check, journal
9-12	Researcher conducted 2nd interview of millennials and transcribes.	E	RQ1: Organizational learning support experiences and preferences	Comparative Analysis/coding	Audit trail, thick rich description, member check, Triangulate sources, journal

Trustworthiness

The goal of trustworthiness in qualitative inquiry is to support the argument that the research findings are “worth paying attention to” (Lincoln & Guba, 1985, p. 290). Qualitative research is challenging due to its inherently small samples and is exacerbated by researchers’ inability to “fully understand the experience of another person” (Patton, 2002, p. 227). Further,

The axiom concerned with the nature of reality asserts that there is no single reality on which inquiry may converge, but rather there are multiple realities that are socially constructed, and that, when known more fully, tend to produce diverging inquiry, (Lincoln, 1986, p. 75).

To enhance the trustworthiness of my study by mitigating the identified challenges in qualitative research, I focused on transferability, dependability, credibility, and confirmability (Lincoln & Guba, 1985).

Transferability, or the function of similarity between two contexts, requires the reader to understand the full research context, and then determine if there is sufficient similarity between that context and another context (Lincoln & Guba, 1985). To optimize the reader’s transfer

decision making process, I provided thick, rich descriptions of the participant selection process and the participants themselves. In addition, I outlined each step within my research methodology to ensure process clarity.

Dependability involves the consistency with which research is performed (Miles & Huberman, 1994), as well as the likelihood that if the inquiry were repeated with similar participants in a similar setting, similar results would ensue (Seale, 2002). To maximize dependability I developed audit trail (Lincoln & Guba, 1985) documentation that consisted of all methods and procedures used in my study. My audit trail included research proposal and IRB approval documentation; complete description of the sampling process, participant invitations and consents; interview schedules, durations, audio files, and transcriptions; code lists, coded transcriptions, collapsed codes, and categories; trustworthiness strategies and actions including triangulation and member checking; reflective journal including research decisions; and personal subjectivity statement.

Credibility is concerned with the capture of data through qualitative interviewing and its transition to research findings and themes, and specifically that the process is consistently used throughout the project (Lincoln & Guba, 1985). To assure credibility I established a repeatable process that included interviewing and recorded data capture, transcription, coding, classification, categorization, and theme development. To enhance my work, I used member checking (Creswell, 2012) and peer debriefing (Creswell, 2009). Member checking occurred by sending research themes to participants for their feedback on validity. Peer debriefing took place with academics and practitioners to gain feedback on the appropriateness of the research process and applicability of the outcomes.

Confirmability relates to dealing with and managing the subjectivity I inherently added to the research process as I executed data gathering and analysis processes to develop findings. Confirmability is a particularly vexing component of trustworthiness because as Patton (2002) states, “the terms objectivity and subjectivity are so loaded with negative connotations and subject to acrimonious debate that neither term any longer provides useful guidance” (p. 50).

Subjectivity Statement

I offer this subjectivity statement to allow readers to understand the various perspectives I have that may influence my work. I am a late baby boomer raised by parents who were only-children depression babies in very low-income families. Each of my parents excelled in academics and both acquired graduate degrees which were quite rare for their generation. I have three siblings, two older brothers and a younger sister who are quite independent and live across the country in distant proximity to each other. We did not have a television until I was eight. Growing up in a household with well-educated parents generated much deep conversation on a variety of topics. Some discussions were informal and deep, and some formal and deep. For a time, my siblings and I were required to present dinner-time discussion topics that we chose, researched, and for which we developed discussion questions. We rotated days of the week, and my Dad took Sundays to ensure sufficient time for discussion on his topic. The focus on new knowledge, communication, and discussion built my initial understanding of knowledge transfer and informal learning. As a result, I think about why people do what they do, why they change what they change, and how they improve what they do. From my early experiences I developed a distinct bias towards deep thinking and the value of informal learning. As such, I may place less credence on input from research participants who are not deep thinkers or who do not share my belief in the value of informal learning, and in contrast place more value in those that share my

bias. In addition, I may diminish thoughts that come from participants who respond instantly to questions without taking time for reflection, and highlight insight from those who evidence deeper thought.

As a working professional, I have had two careers. My first twenty years were focused on business and business leadership roles including marketing, sales, strategic planning, mergers and acquisitions, and general management. Each of these roles involved the need to improve performance, change behaviors, and elicit action. Over the course of my first career, I saw little performance change from formal training events and as such, reaped little value from training department efforts. Experientially, I learned that performance improvement, change, and action were borne from long-term goal-setting, planning, practice, communication, and coaching. My work in a variety of business leadership roles increased my bias regarding informal learning value. My work experience may cause me to devalue participant input from those who have not had a multi-faceted successful career, or those who believe formal training has significant stand-alone workplace value. Similarly, I may find input from participants who have similar career experience and perceptions about formal training value more important.

For the last twelve years, my work has focused exclusively on performance improvement through learning, training, and development efforts. Until recently, I led a team of 150 at a financial services company who provided role-based functional and technical learning solutions in a variety of formats. We utilized a learning framework I developed that emphasized designing learning solutions that explicitly support the post-formal training knowledge transfer period. My perspective on the value of informal learning has transitioned into my formal practice. My current vocation may cause me to deemphasize insight from practitioners whose primary focus is

on designing, developing, and delivering formal training events, and over-emphasize the importance of those who focus on informal learning.

I am an adult learning doctoral candidate at the University of Connecticut. My studies include reading, discussing, and researching the field of adult education. The adult learning program emphasizes a three-part learning model that includes individual attributes, key experiences, and organizational factors. This Trio Model of Adult Learning (Sheckley et al., 2007) has specific support for informal learning. My studies include review of numerous scholarly articles and research findings centered on knowledge transfer drivers. Most of my academic work over the last seven years has supported the value of informal learning which has sustained and expanded my related beliefs and mental model. As a result of my academic efforts, I may devalue insight from those who don't have foundational knowledge in the known factors that support learning. Consequently, I may over-value information provided from participants who share my ideas regarding what support mechanisms can accelerate knowledge transfer.

In my research I remained cognizant of my strong bias regarding the significant value of informal learning, as well as the value I place on deep thinking. In reviewing interview transcripts, coding, developing themes, and drawing conclusions I took extra care to understand intent instead of trying to align outcomes to my perceptions. I also weighed research results evenly regardless of who provided insight or how they developed their beliefs and responses to questions and probes.

In this qualitative research project I interviewed high-potential millennial employees in a for-profit high-technology industry business. I have experience training millennial employees, so I have biases regarding how they can best learn. Given my significant training and learning biases, I conducted the interviews fully cognizant of my preconceived notions and tried

diligently to listen for meaning. In identifying themes, I worked to understand the qualitative information received for its desired intent and not through coloring or distortion I could have applied.

Limitations

There are several key limitations that might have affected the findings of the study or how the findings were interpreted. Of specific note, is my sample of high-potential HTC employees who were participating in an invitation-only leadership development program (LDP) as compared to the millennial generation as a whole from which they come. My initial sample size of eleven consisted of four females and seven males. This sample met my gender goal of not more than 60% of one sex. One female participant dropped out prior to the first interview and as noted earlier in this chapter, two female participants were unable to participate in the second interview. While I noticed no difference in responses between males and females during interviews and I reached data saturation prior to completing the interviews, full transferability among male and female millennials is a potential limitation. A similar limitation may exist relative to ethnicity which was not a sample characteristic.

Transferability amongst millennials deemed high-potential in a corporate setting should be significant while transferability from my sample and research and the millennial generation as a whole should be contemplated with caution. It is possible that less-educated or lower-level millennial employees may prefer organizational learning supports that are different from those that my participants discussed.

Since my research took in place in the United States, transferability for millennials beyond its borders should be carefully considered. There are many approaches to education on a global basis that do not involve the self-directedness exhibited by my participants. For example,

“many international students are committed rote, reproductive, and surface learners who prefer learning environments referred to by Ashman and Conway (1997) as “teaching-centered”, and which focus on the transmission of content and successful completion of exams,” (Ninnes, Aitchison, & Kalos, 1999, p. 324). My participants spoke with great clarity regarding the control they have over their learning and the choices they make to ensure transfer-of-training success. The teaching centered approach common in other countries may also impact the relational aspects of a Subject Matter Expert and a millennial as, “in many societies students are required to show great respect to teachers, and this influences their approach to learning,” (Ninnes, et al. 1999, p. 324).

Although I included my subjectivity statement in this chapter, my very strong belief that successful learning improves performance which in turn, improves business outcomes and organizational success may have biased the interpretation of data and the analytical results of this study. There is scant empirical literature that demonstrates a significant positive relationship between transfer-of-training and organizational success. According to Brinkerhoff and Apking (2001):

If we define “training impact” as simply the transfer of knowledge and skills to on-the-job performance, research indicates the impact of training is realized for only about 15 percent of all training participants (Tannenbaum & Yukl, 1992). When we define the impact of training more rigorously, such as the application of new knowledge and skills to enhance business performance in a way that makes a worthwhile difference to the business, then our evaluation studies show even more dismal results. (p. 1)

My bias regarding the potential for strong, positive correlation between learning and business outcomes should be considered with respect to my findings and conclusions.

Table 3

Methods Employed to Enhance Trustworthiness

Method	Description	Issue Mitigated
Thick, rich description	Provided sufficient process and analysis insight to allow readers to deeply experience the study	Credibility Transferability
Use and documentation of established research methods	Selected optimal research methods based on recent, previous, similar studies	Credibility
Participant description	Provided detailed participant information to support transferability to similar demographic groups	Transferability
Audit trail	Fully documented study methods and procedures	Dependability
Member checking	Secured participant feedback regarding themes developed from data collection and analysis	Credibility Transferability
Peer checking	Used a third party to review and ask questions regarding the study and its findings	Credibility
Subjectivity statement	Detailed my personal bias and experience with significant study elements including the training and development of adult learners	Confirmability

Chapter Summary

This chapter covered the processes, procedures, and methodology under which my research project was executed. That overview was followed by information regarding the quite articulate and thoughtful participants who I interviewed for my study. I presented my approach to mitigating the various factors that can impact trustworthiness. Lastly, I included a section on limitations of my study. Upon a strong research foundation consisting of proven qualitative

investigative methodologies, expressive participants, and a thoughtful plan to intensify study trustworthiness, I learned a great deal about millennials' experiences with, and preferences for organizational learning supports. Chapter Three elucidates what I heard and learned from the study participants.

Chapter 3

Findings

The purpose of my study was to uncover millennials' experiences with, and preferences for organizational learning supports. Chapter One outlined the conceptual framework and literature I used to develop the questions for two interviews with millennials in a leadership development program (LDP) at HTC, a high-technology design and manufacturing company. Data from 10 participants were collected and analyzed using constant-comparative methodology as detailed in Chapter Two. The preferences for organizational learning supports were derived from participants' statements about how they like to learn and how they taught others. The research effort was successful in that the participants clearly articulated experiences with organizational learning supports and provided rich insight for my research question: What are millennials' organizational learning support preferences?

This chapter offers three themes developed from participant data and subsequent analysis. The three major themes are:

1. Millennials appreciate big-picture understanding, new information, and rapid application to help them learn and perform on the job.
2. Millennials prefer having the option to learn independently or in small groups to deepen their understanding of new knowledge.
3. Millennials want resources that provide answers to questions that fill knowledge gaps.

Millennials appreciate big-picture understanding, new information, and rapid application to help them learn and perform on the job.

The participants consistently talked about wanting a big-picture introduction which provided learning context including why learning was important and how what was to be learned

impacted themselves and the organization. Then, they preferred brief communication of the new information to be learned such that application could quickly follow.

Millennial prefer having big-picture context regarding what they are asked to learn.

Millennials wish to understand the context and motivations behind the learning requests of others in order to commit to learning. This big-picture leaves them feeling empowered to make decisions about how much time they will invest in new learning and how engaged they will be in the process. Lance had been asked to take on new responsibilities as a program manager, a role which he knew little about. As he engaged in the learning process to achieve success with his new responsibilities he had this to say about the value of understanding the learning context, “so I think it’s definitely beneficial that I had that time to sit down with him [Lance’s manager] and now I understand a little bit more of why I’m doing certain things the way that I am” (lines 24532-24533). While participating in the LDP Pierce was asked to learn about HTC’s financial reporting system. He expressed his concern for investing in the learning effort by summarizing his interest in context, “I don’t like it when people just end up and just tell me that this is important and don’t provide the context or an explanation as to why,” (lines 20078-20079). Pierce went on to clarify his thinking about big-picture concepts by relaying a story about the leadership development program and the financial reporting system training he was participating in. He clearly states how understanding context increased his interest in learning and as such was a preferred component of the learning process:

Cuz parts of it had always touched on my actual role and I never really... I basically did what I had to do to get by so that nobody would bother me about it. But that [touching my actual role] provided a context for my actual job. So it gave me context for why this aspect affected the other people around me and why it was important to the business. So

when I finally made that connection that this was important because... the earned value and this hand-wavy schedule stuff actually implemented [impacted] the bottom line of the company which in turn impacts my job security and whatnot then I became more interested. You know, this [context] provides that. So to me, if somebody can demonstrate why a learning experience provides value to myself and or the business, then I'm much more interested in it. (lines 20068-20072)

Kingston thought that context helped him understand how his work fit with the work of others and made the organization more successful. As he reflected on the annual performance appraisal conversation he had with his manager he talked about the leadership development program, his learning, his performance, and how his work aligns with organizational objectives. He said, "At the end it's all about organization success. It's just my piece of the puzzle, making sure it gets done," (lines 22561-22562).

Glen also discussed the importance of big-picture context in his leadership development program and a training session on team work. The participants were split into small cross-functional teams and asked to build a small-scale helicopter. The helicopter build project simulated team work the attendees encountered at HTC. Glen used the simulation as a basis for his thoughts about knowing the big-picture and how that relates to other roles and responsibilities. Specifically he pointed out how the lack of desired big-picture context yielded less than optimal team performance outcomes:

One of the previous sessions we had for the Leadership Development Program we had a team exercise where we had to build a helicopter out of K'nex[®] and we didn't get, they didn't give too much guidance so we broke into teams and they told us to do whatever you had to do to get it done. Basically what we did was there were five of us and each of

us took a different part of the helicopter to build and we weren't the winning team and at the end we weren't the quickest team to do it, but what we had learned is we would have saved a lot more time if we had looked at it, gotten the bigger picture instead of just divvying out the parts of the helicopter and putting them together. (lines 12056-12063)

Glen added,

We should have made a better plan and how to integrate it better because once we built our separate parts we didn't really know how to put it together and then we wasted a lot of time going back and forth trying to get it together. Whereas, if we had looked at the bigger picture and had a better plan as to how to integrate it we would have done a better job. (lines 12063-12066)

Carrie's insight regarding big-picture context was similar to Glen's when she responded to this question, "As you think about your time so far with HTC, what could the organization be doing to help your learning that it's not doing today?" She expressed her interest in a big-picture view for herself and other new engineers as it related to the rotational program she is in:

I think we're very quick to throw people into the weeds without giving them the big-picture view...the bigger picture pieces would be effective for everybody... But there should be some additional level of information that we're giving to young engineers, young employees to understand the big-picture of their program, of their business, of the company as a whole because you get down in the weeds on one particular task and you don't see the connection points from what you're doing to the next level and then the levels after that. (lines 28139-28146)

Carrie continued,

I think young engineers and other employees need to be able to do their work in a way that supports the other aspects of the business best...I think that's the piece that we're not giving to our employees to get that whole picture. What is it that you are actually working on? And in some cases it's not possible in the [high-tech] industry because of the classified nature of activity, but for unclassified activity I think it would be valuable to give that frame to new people when they come on to a new program or a new business or whatnot. (lines 28146-28160)

Carrie's thoughts outlined her difficulties learning and assimilating her new rotational role responsibilities due to the lack of fundamental context. Her lack of ship terminology language slowed her learning and inhibited performance which she found challenging because she wanted learning to be more valuable in her new role.

Like Carrie, Miles favored big-picture context when he conveyed his interest in knowing why the organization wanted him to learn when he said, "I'm certainly more invested in the training if I know why," (lines 10542-10543). Dell also appreciated big-picture information. Dell's thoughts came in a conversation about how he was developing various management competencies. Competency development started with learning experiences in the leadership development program and quickly moved to application in Dell's work. His big-picture insight focused on the impact context had on supporting the application of new information:

Sometimes it's possible to learn without the big-picture, or at least the entire picture, but I find that it significantly does help my learning experience because understanding how whatever I'm learning or meaning to do relates to the big-picture aids me in figuring out what I'm doing and understanding what I'm doing. (lines 26424-26427)

In preparation for the second interview, Red considered the question regarding the perfect way to learn something new. His pre-interview contemplation included comparing favorable previous learning experiences during undergraduate and graduate work with less desirable HTC experiences. A key differentiator of the desired learning experiences was understanding the context for learning. Red talked about why context was important to him and why it was a desired precursor to receiving new information:

...first, when I'm trying to learn something I need to know the context of what it is I'm trying to learn, how it fits in, how it's going to benefit the particular topic that I'm on and how it works with other topics. So the context is important, and then I'd like to get a presentation of the material in overview. (lines 16756-16759)

Understanding the big-picture context of proposed learning efforts, including knowing how the new information would impact the participant's work and that of the organization, was a prevalent preference of the participants. Understanding big-picture context was a preferred precursor to beginning new information consumption for the millennials.

Millennials prefer receiving just enough new information such that application can begin.

The participants spoke frequently about the amount of new information they received to achieve their learning goals. Often the amount of information conveyed by SMEs or trainers was deemed excessive for what they were being asked to learn. There was a definite 'receive new information and then apply that information' cadence to their thoughts, with emphasis on just the right amount of new information so that successful application could occur. For participants, successful application consistently meant using new information to perform a task either through simulation or in a live work setting. Pierce summarized this idea well when he reflected on his professional learning experiences in general and said, "Don't try to cram too much into it, just

get something in and do it well. I find that if I take these training classes and they dump too much information...I wind up just going through the motions and not learning,” (lines 20767-20770).

Miles too stated his desire to receive just the right amount of information by getting quite specific about what was the right amount of information and how it related to the successful application of that information:

When people give me examples without the underlying concept I have a hard time taking that knowledge and replicating it outside of that specific example whereas if I understand the concept up front and then we work through an example, my ability to then, later on, do it myself is much higher. And I say that with a great amount of confidence, actually.

He continued,

I’ve been in situations where I’m actually, can get highly frustrated by diving into an example or working on a problem or whatever you want to call it without the understanding of the overall concept because I can’t follow the explanation of the specific problem as well, which is frustrating when you don’t understand something. And then also I’m actively aware that I’m not going to remember it as well later, which is the second part. (lines 10529-10537)

Likewise, Ally was quite direct regarding the amount of information she preferred when probed about her reliability analysis learning experiences. She described the amount of new information she desired to receive when learning about the new analytic skill: “Not in depth or detail but just the concept of what you have to do and here are the specs and procedures and here’s the guidelines that you have, the handbook that you could follow and that you could have to hear on a daily basis,” (lines 14032-14034).

Capri responded to probes regarding new information by generalizing her comments formed from a variety of formal learning experiences. She was often frustrated with the large amount of information she received in presentations:

I think it's just that we get happy to place [lots of] information on there but I don't think it's received as well by most people because you can just tune out the presenter, you don't need the presenter to understand the presentation...And sometimes you do need that fact or data. Don't get me wrong, when you're going through where your program is on spend or where you are on your plan and you have a bunch of graphs on there, yeah that has the facts and data on it, but there are a lot of things where I feel like less information would be more effective than the way that we try and present information.

(lines 30161-30169)

Capri's frustration led to learning challenges for her including trying to stay engaged in the verbose presentations as well as regularly trying to determine what information out of the excessive amount was important.

At times, participants had to find information on their own and even then 'just enough' was the rule. Glen described a time when he had to learn a new software program to complete a design task. He discussed gathering the right amount of information from documentation, tutorials, and SMEs for him to begin new software-driven design tasks in this way:

I usually take a look first at the basics. And the documentation of the software just tells you how to use it, but a lot of the examples are very vague and not as complex, never as complex as what we actually have to design, so usually the SME will have examples of similar complexity to what I'm actually trying to do. The tutorials in the software are

very, very simple, generally, that help you use the software, but for the design, the complexity of it, I generally like talking to the SME. (lines 12387-12391)

Learning a new software application was iterative in nature as Glen used a variety of information sources serially until he had accumulated enough information to use the software to finish his work.

Pierce talked about training events designed and delivered by the HTC corporate training department. He said that they were often unnecessarily lengthy and included unneeded information that did not help him do his job. Pierce expanded on his ideas about amounts of new information presented with these thoughts:

Sometimes they tend to put a lot of feel good corporate stuff into things when, after the fact when I sit down and talk to my peers, all we wanted was the bottom line. We don't want the three hour overview of corporate values and stuff if you're an engineer. You want to learn what's applicable to my job, you want to learn how can I grow in this job and what are the tools I need to do it. (lines 20181-10185)

In addition to their own learning experiences, participants also preferred applying just enough information when training others. Pierce and Dell described how they provided 'just enough' information to learners. Pierce often teaches others by helping them solve problems. For Pierce just the right amount of information is about one-half of what is needed to completely solve the problem. That just right information amount is sufficient for application, without providing so much information that application becomes complicated. Pierce described the teaching method he commonly uses:

I start to give them maybe half of the solution and let them work through it themselves and come back to me, cuz personally, I don't really truly learn something or understand it

until I do it myself. So it's hands on, like you could tell me something and it'll go in one ear and out the other but if I do something I'll always remember it. So I try to tell somebody just enough and provide a little bit of context as to why it fits into the project to try to get them excited about it and then let them work through it. (lines 20198-20203)

As part of his role responsibilities Dell helped colleagues learn how to use new software tools to complete design tasks. His formulaic approach ensured his learners had the basic information they need to begin using the tool and initiate the design task. Dell offered his ideas about providing initial information with an example of how he customizes instruction to help others use new software:

I will walk through them with how-to get access to the tools and get accounts set up for it. And then I'll also, while they're waiting for those tools and accesses, show them on my machine, kind of walk them through the basics of how to use the tool, what parts of the tool they will use most often or will find most helpful. And I will try and get an idea from them of what type of work they think they might be doing so I could focus on whatever processes they might be working with and, if I'm familiar with them, walk them through the basic steps, maybe refer them to any documentation if I'm aware of it, that is a reference. (lines 26134-26141)

Like Dell, all the millennials in this study prefer being provided just the right amount of information when learning something new, or conversely when teaching others, so that application of the new information can commence as quickly as possible.

Millennials prefer applying what they are learning early in the training process.

Throughout the interviews with participants, they expressed a uniform desire to try out what was being learned as soon as possible. This is closely linked to requests for just enough

concept and theory information such that application can begin through simulations of work or on-the-job. The participants conveyed their interest in application-based learning by adopting that practice themselves and by using it to teach others. Kingston succinctly summarized the focus on application, “There’s only so much someone can tell you until you actually do it and learn it on your own,” (lines 22061-22062). When asked for an example of how applying what he was learning was a preference, he stated: “So they told me the software was available in the lab and it’s not much different from that software that I learned before and this new software so I just went into the lab and in like five minutes got the changes going. It was something really quick,” (lines 22083-22085). Likewise, Capri also discussed not being able to apply new information quickly enough at HTC. She used learning parlance to explain her desire to apply new information quickly and deeply:

I’m very much an experiential learner...that you imagine what you are able to do. There were some challenges of getting enough work to even make that learning happen. That’s a huge block for me because if I’m not in it, if I’m not in the weeds I’m not, I’m probably not going to learn it. I mean I can learn the basic stuff, but it has to be directly applicable. (lines 30188-30193)

Conversations with Lance showed his ability to be laser focused and be very specific about his thoughts and ideas. He was able to zoom in on his desire to apply new knowledge:

One of the main things when I came in here, especially with my job now is we’re running on probably three or four [financial] systems that are all interconnected. And we have this type of mapping where we have to go from system to system..I remember in the beginning of my rotation, I was pulling a report from one of the systems and I noticed that the numbers all looked wrong and I actually immediately reached out to my

manager, like I said before he's very approachable and he's my point contact if I have any questions and he sat down with me and we worked out the problem and I was able to get the hands on experience to correct the problem myself with his support and I was able to get that exposure to that so in the near future if a problem like that arises again I'm going to be able to do that on my own. (lines 24604-24612)

Lance's learning occurred when he quickly applied the information he received from his manager. It was clear to Lance that by applying information quickly and solving the immediate problem he felt confident about solving any similar problem in the future on his own.

Miles talked about how he learned where to look within a certain type of government document to find a specific piece of information. Once it was explained to him he would immediately move to application:

I would go apply what I had learned and that helps me retain it, I guess. I'd do it immediately for the situation in question that made me go ask the question, and then a couple days later, a week later, the situation comes up again and I get the chance to do it and once I've done it two or three times I feel like I, it's gone from something I'm learning to a skill set I have. (lines 10321-10326)

Like Miles, Pierce too wanted rapid application:

I don't really truly learn something or understand it until I do it myself. So it's hands-on, like you could tell me something and it'll go in one ear and out the other but, if I do something I'll always remember it. (lines 20199-20201)

Pierce continued his thoughts regarding learning something new:

Oh yeah, it [the new information] sticks in my head a lot better if I go through it hands on and do it myself. A lot of times it's hard when you just ask questions and you listen to the

answers and you don't actually see it and touch what you're doing, it doesn't stick in my head as well. (lines 20538 - 20540)

Pierce also values quick application when he teaches others, "I try to tell somebody just enough and provide a little bit of context as to why it fits into the project to try to get them excited about it and then I let them work through it," (lines 20201-20203)

In addition to Capri, Miles, and Pierce, Carrie also preferred using an application-based learning approach to train others. Carrie's selection of a hands-on method showed her preference for application early in the training process. She used a logical approach when training a fellow millennial to learn how to oversee and manage an HTC manufacturing process. The learning process she developed was to have her colleague first understand the context and content of what he had to learn and then let him try to do the work while she was ready to offer him guidance and support:

I had him essentially tag along on doing certifications to training our operators and assemblers, watching how, going about that. Sit through an MRB, a material review board so he could see what I was looking for and the tools that I was using to look for those things on the specifics of assembly for quality inspections and whatnot. And then again, like I said, visiting our suppliers, so doing some hands on things first and then in those last two weeks I tried to hand off as much as I could to him versus him just watching me so he could sit down with the totes of material that he needed to look through and follow the same process that I had shown him but then could still ask questions with me still there. (lines 28281-28289)

Just as if Glen was learning himself, he mentored new engineers by providing just enough information so that his new team-mates could quickly perform simple projects using an application-intensive approach:

So to teach them I gave them simple projects to start, well actually to start off I had them looking at a few tutorials, very simple tutorials where they actually just followed the instructions to do very simple projects. Then, after they did the tutorials I would give them a very simple project where they didn't have instructions to guide them through it until they got to the end result to teach them how to use it and then I made sure I was available to them for any questions or anything. (lines 12119-12124)

Dell knew that ensuring that the teammates who were taking over his duties were proficient required their demonstration of competency performing his responsibilities. To achieve that goal, Dell exposed them to enough information that they could perform his work until proficiency was achieved:

A lot of it [training others] had to do with participating in meetings, so I had them alternate attending those meetings every now and then over a couple weeks and kind of being my substitute whenever I was absent so that they could experience it and gain some experience for themselves, and whenever they ran into any issues or questions or problems to ask me or come to me with any of the issues they ran into and weren't able to solve with what they knew. (lines 26312-26316)

Selecting the application-oriented learning approach to teach others signified Dell's preference for rapid hands-on learning. Whether engaging in learning efforts to expand personal knowledge or when teaching others, Dell and the participants demonstrated a clear preference for rapidly applying new information in simulations or live work. Often the participants were explicit about

the need to successfully apply new knowledge to establish that learning had occurred for themselves or those they were teaching.

Millennials prefer having the option to learn independently or in small groups to deepen their understanding of new knowledge.

Depending on the learning goal associated with a learning activity, participants preferred the option to learn independently or in small groups. If the learning goal required the participant to perform independently in the workplace, then participants often preferred to learn on their own. If the learning goal required participants to perform work as a part of a group, then the preferred learning context typically was a small group with others who worked together to achieve performance goals.

Under certain conditions, millennials prefer the opportunity to learn on their own.

Millennials often prefer the opportunity to learn independently when learning something that will be applied independently. Independent work examples from my participants included using new design software, creating a financial report, and designing an electrical component. Pierce summarized this theme well when he stated his desire to, “go off on your own, try to understand what they said, going through with your hands and looking at stuff and try to take it a little bit further, and then iterate through that process again,” (lines 20700-20702). Pierce had access to some learning support materials, but wanted to iterate the learning process on his own. Much like Pierce’s thoughts, Dell conveyed the tight linkage between learning and working independently. Learning is not set out as a separate task; it is a part of work. When asked about his thoughts about learning on his own, Dell answered:

I like to be independent and move on my own, work on my own, not depend on others.

Also, when I do something myself, whether I do it correctly or incorrectly, I learn the

lesson much more than if I was led through the task by somebody or shown the way without doing it. So doing it independently helps me learn it and retain it better. (lines 26436-26439)

Likewise, Glen executed an independent learning approach when he needed to perform a new engineering task. Of the various methods he could have chosen to create a new electrical component, Glen desired independent research:

I had never done it before and I did basically independent research because there really wasn't an SME in our facility that could really help me. HTC had done some work on it down in Texas but I had looked at some papers on IEEE which is an engineering forum of articles and papers that engineers write and publish and using those and also reading some books I was able to do some independent research and come up with a model and different software to analyze the phase shifter. (lines 12235-12240)

Kingston said he regularly learns and tackles new projects independently to be successful with new work. Within his comments was a desire to show competence to others:

Me, personally, given a [new] task, I like to take on the challenge myself before I ask for help, and one thing that my manager said is that the people who would give me tasks, it's good to let them know earlier on that I don't know how to do it. But to me, I don't like that, I like to go off on my own, given the resources, try to get the job done, and if I'm stuck I come back. And I would say that's very true of most young engineers my age. It's almost like we have to prove ourselves. (lines 22549-22554)

Kingston was quite clear about how learning and working independently supported his desire to prove himself, as well as ascribed that desire to peer engineers.

Lance explained how he had to learn to use four interrelated systems to complete his engineering program review responsibilities. He talked about his desire to learn independently, after some initial mentoring, and how learning on his own impacted his work:

Obviously in the beginning it's almost a hand holding process of, you have to try to figure out, you need a little bit of guidance on how everything works, but I feel like I want to be able to do this stuff on my own and not have to somebody and make sure that, oh, am I doing this right. It's almost like a confidence thing. If I'm able to answer a question from somebody without having to go to my manager to ask a question, I can correct the situation on my own, it's a feeling of accomplishment, it's a little bit of a confidence, I feel like I've learned something, I'm developing. I feel like it's being able to work independently, it gives you more of a quantifiable type of thing that you've actually accomplished something if you can do it on your own. (lines 24616-24623)

Carrie talked about how she trained a colleague to take over her quality review responsibilities by ensuring that he had time on his own to learn:

...doing some hands on things first and then in those last two weeks I tried to hand off as much as I could to him versus him just watching me so he could sit down with the totes of material that he needed to look through and follow the same process that I had shown him but then could still ask questions with me still there. Really those last two weeks I was working on other things and transitioning off...I was giving a lot of work to Nate but the goal being that he had that true opportunity to try things on his own. (lines 28285-28291)

Red too, characterized incorporating independent learning related to helping colleagues learn how to perform a new process:

People also have an expectation that they want you to figure out things on your own. I think that's definitely a valid expectation, I also have that expectation; I want people to learn things on their own to an extent. You want people to find things out on their own because that's the best way to learn things but you also don't want them going out there and wasting your time. (lines 16680-16684)

Red's thoughts introduced the idea of learning efficiency. As a SME, Red wanted the colleagues he was training to learn and work independently so they would minimize the use of his time.

Under certain conditions, millennials prefer to support learning with small group interaction.

The participants spoke about their desire at certain times to be involved in small group learning. Small group learning helped the participants feel comfortable asking questions, and they felt compelled to provide answers in their area of expertise. Small groups were also a place to form new relationships. Small groups were also definitely preferred over large groups. Capri summed up the value of small groups over large groups, "I think you lose stuff in large group communication," (lines 30467-30468). She went on to explain her preference:

I guess you gain the opportunity for more people to interact back and forth, I would say. And you have more of an ability to ask direct questions to get what your needs are answered whereas in a larger group you have so many other participants that, even if you have a lot of questions, there's only so much time that they can spend on you versus somebody else, especially in a large group. That's probably the big thing, that large groups, there are so many more parties involved that have, that are maybe trying to learn the same information that you are but maybe look at it a different way depending on what their experiences are, so it's hard for the person sharing that information to give you a more individualized attention. (lines 30470-30477)

Capri added,

...I think in a smaller group you have more of a relationship with the group as well as with whoever your... because there's more attention on individuals in a small group versus individuals in a larger group. But I don't know, maybe it's, sometimes in a small group, if you don't know anybody you may not want to bring something up, but I feel like it's a lot easier in a small group than it is in a large group, even when you don't know everyone. (lines 30482-30487)

Similarly, Lance preferred small groups because they facilitate more comfort exploring questions:

I feel like it's almost that in a smaller group setting you feel like you have more of a voice almost and if you're in the big setting and they're asking questions or whatever, you don't always have a chance to say what's on your mind in those big settings. So in these smaller settings you're working with a limited, smaller amount of people and you're able to talk through things more and I feel like you're able to do more in a smaller setting than in a bigger group setting and that's one of the things I find I like a lot more in the smaller settings. I feel like I have more of an urgency to speak up and talk through things in a smaller setting than in a bigger group setting. (lines 24675-24681)

He continued,

I feel like I'd be more prone to ask that question no matter what it is, how menial or important the question type is. In a smaller group setting I'd feel a lot more prone to ask those questions and make sure I understand it before we go on to the next thing whereas you're in a bigger group setting and you might think, eh, maybe I'll wait till later to get that answered instead of having to jump in in the big setting. (lines 24685-24689)

Miles too talked about how small groups facilitate asking questions for more inhibited group members:

I think for some other people there can be a different propensity or type of question they might ask in a large group versus a small group. Personally I've always been outspoken in class to some degree or another and maybe that's why I value the ability to do that, but I definitely know others that maybe aren't as much so in a larger class do, or I sense, do, or are more willing to do that in a small break out group where there's a group of five or something like that, I use that number arbitrarily. I won't dwell on it, but I think even people who don't say anything in class for a whole semester, if it's a breakout group of five usually contribute. (lines 10505-10512)

Carrie offered another reason for small group learning. She explained the benefits of being able to work together and leverage each other's strengths and expertise in small groups to produce better work:

If you get silo-ed into your specific task and that's all you care about, that's all you know about then you're only going to work on your piece of the pie, you're not going to see the interconnectivity between your piece of the pie and other pieces. Maybe you could help each other, maybe you could leverage off of each other's work, maybe you're reinventing the wheel by doing something completely in your own silo, maybe you don't see, you're trying to innovate something and you don't see that by you taking a step in the right direction on your specific piece of the pie, maybe it is absolutely ingenious of a change on your piece of the pie but then when it gets merged into the rest of the ship or another system or albeit whatever it is it causes catastrophic problems because you didn't think through the interconnectivity with other pieces. (lines 28164-28173)

Carrie's sentiments suggested that better work outcomes could come from small group work if people working on individual tasks knew what others were doing so that changes across a project could take place more quickly and efficiently:

Yet another reason was offered by Dell. He desired small groups because they could be formed to bring multiple disciplines together to work on a shared task. He discussed a learning experience working on a LDP project in a small group where success required multi-disciplinary expertise to optimize results. Dell explained how the LDP small group members worked successfully together and how small groups can overcome the inherent weakness of working without cross-discipline exposure:

We worked in a group of, most people worked in a group of five. I worked in a group of four, with cross disciplines. We had myself, another engineer, along with someone from business development and someone from finance. And what I most learned from that was from the cross discipline, mostly from finance and a little bit from contracts, from the business development and finance people on our team...I've learned a lot of people have difficulty with is when other disciplines make decisions that affect our engineering work or decisions that we will be making, but without understanding how or why those decisions are made they may not agree with them, they'll be resisting those decisions and changes. (lines 26043-26063)

Dell added,

But by working with these other disciplines, seeing what it's like, how they make decisions, what their decisions actually mean, when we see decisions in the actual workplace it makes more sense and we can connect better with why things are the way they are, why they made the decision when without that knowledge we wouldn't think it

was a smart decision. So I think it would be better for a more cohesive work environment. (lines 26063-26067)

Dell linked LDP learning in small groups with the potential of working day-to-day in small groups that provide multiple insights from the diversity of members. Similarly, Glen related his primary organizational learning support for designing new radar solutions was from weekly team meetings, “A lot of the learning, for example how to design radar, you don’t learn that in school. I learned that a lot by team meetings we had, we had weekly status meetings where we had SMEs from multiple disciplines, there was a lot of team learning involved,” (lines 12027-12030).

Red was one of the older millennial participants and one of the few who has begun to take on leadership responsibilities. He stated his learning from LDP small group work has helped him develop team leadership skills. Red made the connection between LDP small group work and his new responsibilities as an HTC leader:

I’m leading with teams, facilitating with teams which involves a lot of working with people, managing different people’s personalities and things like that and I feel like I’ve learned a lot through the LDP program [small groups], how to identify certain people’s personalities, their strengths, their weaknesses and work with that, work with the people in a way that utilizes their strengths and avoids issues with their weaknesses...I think that’s been very beneficial in helping me deal with the team that I’m working on and that’s something that I learned initially in the LDP program, or at least I got the foundation there but that’s really something that I’ve continued to develop as I’ve gone through this role that I’m currently in. (lines 16056-16068)

Like Red, Ally quickly assessed the desire to understand the strengths and relationship potential of the people she worked with in the small LDP learning groups:

I've learned in our leadership development program as far as being on teams and leading teams here at HTC is that learning each of the team members and learn what, not so much their expertise but what they're passionate about or what they're willing to give 110% for, that has helped me in trying to organize and being successful on projects. Trying to find everyone's, for lack of a better word, strength and identifying their improvements or who's compatible and to make the team successful, what do we need to do to move forward. (lines 14059-14064)

Ally's interest in understanding the strengths and dynamics within small groups connected with her desire to see the team be successful.

Similarly, Kingston desired the motivational dynamic from small group work. When stress arose during work, small group camaraderie could break the tension and allow the group to refocus. He spoke of one person in a small group who used humor to overcome tension and the group was able to move ahead:

When you have somebody like that and you have a deadline to meet or the project is not going well, the guy is funny. He has a way of breaking the difficulty and the tension in the room. It just gets you out of focus a little bit and you can refocus and recharge and go back at it. (lines 22837-22840)

Millennials want resources that provide answers to questions that fill knowledge gaps.

The participants clearly recognized that there were gaps in their understanding as they learned new information they were expected to apply. They assumed resources would be available to answer the questions that arose to fill the knowledge gaps. Resources, as defined by the participants, included reference materials, SMEs, and mentors.

Millennials want reference materials that help them learn.

The participants spoke easily and clearly about the ways they use reference resources from the organization, mostly in the form of written documentation to answer questions that arise. There was an expectation that the reference information be of high-quality and easy to get to, either in a logical place or via direction from a SME, mentor, or manager. Kingston often begins his learning process by reviewing existing engineering documentation. For a recent project designing a control module test process, Kingston talked about how he began, “I had to review the schematics, the design requirements, then once I had a good understanding of those, which took some time...I worked with the electrical design,” (lines 22643-22647).

Pierce was asked to use a new technical documentation process. Although he vaguely knew of the process that used a systems engineering management plan, he did not know how to create a plan, so he went to his supervisor and asked for reference materials. He stated “Well, the first thing is one of my supervisors told me that we were actually going to start following this process now so they pointed me to a bunch of contractual documents and then I went off and looked at them a little bit,” (lines 20510-20512). The reference materials provided by his supervisor met Pierce’s expectation for available documentation support and initiated his engineering plan learning.

Likewise, Lance spoke of how he routinely uses reference materials to help learn on the job. Learning support documentation is so important to Lance that he developed his own approach for creating reusable reference materials:

I’m a big user of reference materials and I take a ton of notes. I try to document most of the stuff that I’ve learned in detail so that when I come back and I need to use these skills or whatever that I have this backup support that details how I can complete the task or

whatever it is that I have to do. And then I try to use the reference materials as much as possible and then hopefully wean off of them and I'm able to complete the project independently and I don't have to lean on the reference materials but in the beginning stages of the learning process the reference materials, for me at least, is a big thing to have. (lines 24650-24656)

Dell commented on his expectation for easily accessible reference materials to resolve confusion and ensure that work is thoroughly completed:

I would say documentation is very important because people are not always available to assist or help or explain, so documentation should be there for when people aren't readily available. And more importantly, since people commonly forget or will mix up facts or minor details in their head, having the documentation that at one point, will kind of put down in paper whatever the process is, it can be referred to confirm if things are being done correctly, or if something is forgotten or needs to be referenced or confirmed. (lines 26372-26377)

Ally's expectation that reference materials would be available was unquestionable and her interest in easy access to those was clearly stated. Ally used written and Internet reference materials to help resolve customer challenges she faced at work. Specifically, Ally worked on resolving customer contract issues that were based on federal guidelines. She said HTC contracts are, "dictated in a government document called the Federal Acquisition Regulation which is how we do what we do and how our contract gets structured," (line 30039-30040). In terms of accessing information in the federal regulations, she made purposeful choices about how best to access resources, "I have a physical copy of the book, but it's a lot easier just to Google the

clause that I need and click around on all the links that they have so it's a lot of just Googling to pull up the information that's in a book but easier to access online," (lines 30041-30043).

Like Ally, Glen sought out the best sources for accessing new information to solve radar engineering issues he faced:

Basically, even though we focused on microwaves and radar in school you learn the theory but you really don't learn how to apply it until you get to the workplace. So a lot of the learning, for example how to design a radar [solution], you don't learn that in school... So there was a lot of learning there [at HTC] and also learning by doing independent research. Searching through papers written by other professors, students, or coworkers. (lines 12026-12034)

The preference millennials assigned to reference materials was also revealed in their training of others. Red talked about how he trained others to do his work, "initially I provided... some background information, some reading to get themselves familiar with the terminology that was used, to understand where the goal is. I gave them a lot of my research articles, I gave them some of my presentations," (lines 16157-16160).

Similarly, Carrie showed her preference for having access to reference materials by creating a checklist for the colleagues that would assume her duties when she rotated to a new role. The checklists she created allowed a new team member to follow her prescription for assessing quality:

[I developed] a checklist for various pieces of hardware so that when I left and somebody new came into the role it didn't have to be that type of knowledge [learn by doing] transferal, it could be a set of specific items that you're looking for outside of the

drawings and sets themselves, but specific other things that we were looking for. (lines 28057-28060)

Carrie mentioned that creating the checklists was successful, “Nate only had to reach out to me once or twice with questions following my departure because we really had done a good job of transitioning that information as well as key references,” (lines 28260-28261).

Millennials want subject-matter-experts (SMEs) and mentors who provide timely and accurate information.

The participants said that in the normal course of work, questions arose that needed to be answered to complete tasks and assignments, and improve performance and in that case, participants look to SMEs and mentors for answers. When missing work-knowledge was identified, the millennials quickly moved to seeking help from a mentor or SME. There was some consideration of using reference materials before requesting support from HTC colleagues, but that approach was exhausted quickly and in some cases, not attempted at all. Some participants quickly dismissed use of reference materials and immediately contacted a mentor or SME because that was deemed to generate answers faster for the millennial. Interest in quickly receiving answers to questions arose throughout participant interviews regardless of learning topic or setting. Red had this to say about the need for colleagues to support learning:

The information that you need to solve your problem is not always readily available, no matter what people say. A lot of people who don't have knowledge in the process themselves think it's readily available, or people who are just in the project and not new know how to find the information, but it's not obvious to somebody coming in where that information is. Where it's kept and how to get to it. (lines 16686-16690)

Red further clarified his expectations for SME's at work with this comment, "I have learned quite a lot from SME's on the team," (line 16043).

Ally captured her expectation for SME access when she did not have an answer to a question like this, "Oh I would just call somebody," (line 14038). The very simple process for getting a question answered through an SME or mentor was a pervasive expectation throughout the participants' interviews and was embodied in Ally's next comment, "Someone in my functional group, another peer, or my section head would always be available if I got stuck," (lines 14040-14041).

Like Ally, Glen characterized the approach to answering questions this way, "If you get stuck on something you can always find someone that either knew how to figure it out or knew how to find someone to figure it out...He's (SME) either done it before or knows someone who has," (lines 12037-12039, 12107). Comments about SMEs saving time were very common. Pierce captured the efficiency of SME interaction, "...somebody with like ten years of experience, an hour of their time with somebody with a year of experience will save them [colleague with a question] a month of work," (lines 20149-20150). Pierce continued his thoughts about how to save time by using SMEs with this example:

If somebody just says this document, this book applies to what we're doing, this is what the foundation is, it'll save you so much time rather than going around looking and trying to find that for yourself. Cuz you'll go down a lot of rat holes, doing a lot of research, just to find out that you missed the boat. So just having that knowledge of what's been tried, what's been done and what works and understanding that is priceless. So the historical context of what's been tried is really key. Even if somebody sits down and says here are

ten things we tried to solve the problem that don't work. We don't know what solves this problem, but don't bother trying these ten things. (lines 20152-20159)

Dell corroborated Pierce's thoughts about answering questions and efficiency with his frustration about how long it took to get answers to some questions:

I started by asking questions from various team members to try to figure out who to talk with in the first place, who might have the answer. And it ended up being a bit of a chain before I found out who ultimately knew, and it was a fair number of people involved in answering what seemed like a simple question, but once I got the answer I just used the tools available. (lines 26342-26346)

In Dell's example regarding his lengthy journey to get questions answered, there was no evidence of a replacement approach, just perseverance using the chain of SMEs.

Miles outlined his expectations about the use of SMEs by describing a successful example of SME support when he was trying to find government information he needed to complete a financial analysis project. The result of SME support was acquiring information he needed and more efficient completion of his financial reporting task:

[By] basically going to people that I respect and that are open to this sort of thing, and helpful and just asking the question, saying, hey, this is a piece of information, something I've seen that if I knew more about this in detail or could recognize the pattern, it could help me be more efficient. Could you tell me, in your experience, where you found this, or, in your experience, what this means. And they've been very helpful and being able to use their experience, these are people that are obviously more experienced, more senior than me, to help teach me. (lines 10312-103180)

Likewise, Lance spoke of how much he has used a question-answer process to help him complete his financial program reviews. Specifically he needed to decode the many acronyms in use at HTC and appreciated the detailed answers he received from SMEs. Moreover, Lance stated:

A lot of things that I hadn't really asked questions about in the past about different ways that we analyze our finances, I was able to get more in depth knowledge about a lot of that. And going line by line it was definitely really helpful for me to take little baby steps and try and put the entire puzzle together of all the different pieces that go into this program review. (lines 24520-24524)

Lance connected valuable SME input with success in his work to date and confirmed his thought about continuing to leverage SMEs to support his learning, "Yeah, I still have a ton of questions, there's so much I need to learn still," (line 24541).

Similar to Lance and Dell, Carrie talked about how she learned to manage spare parts in her job by working with, and having access to, an SME:

I started off doing just the spares [spare parts] and I helped out with three or four specific products at first and someone would walk me through what are we looking for, what are the check boxes but without a checklist. I hate to use the word common knowledge but that's essentially what it was. I worked with those three or four products and the next time I'd do some of those on my own and then partner with somebody, have a mentor to look at another set of the hardware. So it was all by one-to-one training but while we were going through inspections. (lines 28048-28054)

Carrie's use of a mentor to help her learn how to manage spares was characterized by her as an expectation. Kingston also expected support from SMEs and without their insight he was unable to complete his design work and have prototypes built:

It's very important, and it's not always every SME that does that, and very rarely do you get to build a personal relationship with them, it's mostly professional. You need them to come to your peer reviews for your design give you inputs on stuff that you should put in and when you get that project done they're off to something else. (lines 22826-22829)

Mentor and SME learning support is not limited to individual task success. Capri linked asking questions as a mutually beneficial approach to achieving overall business success. Her comments arose from working with others on a team and sharing the SME role to answer questions, "sometimes it's getting the information from them, sometimes it's sharing the information with them, but that's how you run the program, that's how you keep things functioning. Without that it'd be really highly unsuccessful," (lines 30392-30394). Likewise, Ally expanded her expectations of mentors beyond supporting work assignments to include organizational politics and coworker personal agendas when she said, "having mentors here at work, that's helped me hone in on that soft skill of recognizing the dynamics and how to manage the dynamics," (lines 14065-14066).

Millennials prefer SMEs and mentors who have an interest in millennials' success.

All participants expect SMEs and mentor availability and because of their value there is a preference that SMEs and mentors are sincerely interested in the participant's success. A SME's and mentor's demonstrated interest in success was perceived by participants when there was willingness by the SME to share information, be open, and follow-up on inquiries made by

millennials. Pierce wanted a SME or mentor who was not only competent, but also willing to share expertise:

I'm looking for someone that's competent in their field, be it a process or be it a technical problem. The second part is I'm looking for somebody that I can sit down with and be able to have a conversation with. That could be dictated by outside factors like the amount of time they have available in any given month. I don't know. I guess, it's mainly knowledge. If somebody's an irritable person to be around, but they know their stuff and they'll sit down and explain it to me, I don't really care about their personality quirks or if they're snarky with me or anything. Competence is the main thing I look for. (lines 20669-20675)

Despite the focus on competency Pierce still wanted the expert to take an interest in him, Pierce's comments showed the personal importance of that approach:

I prefer it, absolutely. Yeah, I like that. It works both ways when you work for somebody and they take an interest in you. The more work they get out of you the more work that they get done because you're beneath them. I'm much more motivated when someone appears to take an interest in me. (lines 20678-20681)

Capri echoed Pierce's desire that the SME should be knowledgeable and take an interest in her success:

Somebody that has experience in what you're dealing with, somebody who's been able to put it into practice a lot, an openness to communication and knowledge about what they're talking about...If you get somebody that doesn't care at all, then you probably aren't going to go back for information because they just don't seem to want to care. It's a lot easier when people seem like they care. (lines 30491-30497)

Similarly, Miles desires SMEs who provide accurate information and are willing to share what they know, but he also described a need to respect the SME:

First of all it's gotta be somebody who has information that you value that they're willing to [share it], so it's somebody that you think they have information that is correct and valuable to what you're doing. So somebody that you respect is, I guess, a short way to say it. You're not going to go to somebody who you don't feel knows what they're doing. (lines 10359-10362)

He goes on to describe what he prefers in SMEs:

One that's much less common and extremely important is their willingness and openness to be non-judgmental and then to have a, be open to, what people refer to as the open door policy, and everyone says that but a lot of people don't mean it. And so to actually mean that and to show that with your actions, body language and your words and things like that is very important. A willingness to share information and to impart knowledge and when they're doing it you kinda get a sense of whether people enjoy doing it or they don't, and appreciate giving you their time or don't. (lines 10364-10370)

Miles continued,

People that are willing to share and are happy doing it and you get a sense that they enjoy it while they're doing it, that's very helpful. And then not being... you can go in and ask a question in confidence and trust as well that they're not going to turn around and, in a meeting later on utilize the fact that you didn't know and had to ask the question because you didn't know as a means to undermine your credibility or something, so there's a trust issue there as well. (lines 10370-10375)

Miles' thoughts about SMEs certainly included knowledge but also conveyed ideas like happiness in sharing and developing trust. Miles' summarized his thoughts about the characteristics of a desirable mentor, "number one thing is the openness and willingness to share information," (line 10390).

Like Miles, Glen desired competence, a willingness to invest time, and an interest in his success as he described the ideal characteristics of an SME:

Someone who's patient, will give you time to ask questions and not brush you off because they're too busy, someone, obviously, who's very knowledgeable in the area and if he doesn't know it or she doesn't know it will know who to point you to. Someone who is there to be able to have time to look at your results and analyze your results and not just push you away and say, oh, go look here, go look there, but is very involved in the analysis as well... If they're interested in your success they're more apt to help you even if they're busy instead of telling you to go look at a specific place and I'd be stumbling trying to find it. (lines 12255-12263)

Similarly, Red talked about the supportive role his boss played on a new engineering challenge that Red needed expertise to complete:

[My] boss didn't say, hey, I'm going to come back and check in with you in three or four days, he was just more periodically, he'd shoot me an email or give me a call and say, hey, where are we at on this, is there anything that I can help you with. I think that that definitely did help, particularly in my case. (lines 16736-16739)

Ally expressed a similar desire to have mentors show interest in her success and how that interest is built on trust:

The more you're trusting of that person you're more apt to accept the feedback that is being given and you trust that this person has your best interest so when you're falling short or there's some need improvement areas that you're not going to take it very personal, you'll take it to where, okay, they have my best interest at heart and not telling me something just because they have to because they have this label as mentor. (lines 14090-14094)

Millennials in this study also transfer their preference for SMEs and mentors to be interested in the success of the people they are supporting to their own practice. Lance structured his comments about mentorship as aspirational when he assumes a leadership role:

If I've learned one thing for when I eventually start managing people it's definitely one thing I'm going to make sure I put into place, making sure that the people who work under me, that their well-being is being addressed on a consistent basis and that they're developing as well. Obviously you want your employees to develop and I would definitely...I'm definitely going to take that with me in later jobs. I'd want my employees to make sure that they're learning as much and getting as much exposure to everything so that when they, in turn, become managers that they have those skills, too. (lines 24573-24579)

Not only did Lance want his direct reports to be successful in their work for him, he also wanted them to be successful as future managers. While an indication of how Lance would like to lead others, his thoughts exemplify the value of interest in the personal success of colleagues in the workplace.

Chapter Summary

Chapter Three offers three themes that arose from analysis of participant data to address the research question, “What are millennials’ organizational learning support preferences?” The findings are that millennials appreciate big-picture understanding, new information, and rapid application to help them learn and perform on the job; millennials prefer having the option to learn independently or in small groups to deepen their understanding of new knowledge; and millennials want resources that provide answers to questions that fill knowledge gaps.

Chapter Four

Discussion

This study yielded significant insight regarding millennials experiences with, and preferences for organizational learning supports. I interpreted participant data to answer the research question: “What are millennials’ organizational learning support preferences?” which led to the development of three key findings. The term millennial in my findings is not meant to encompass all millennials, but instead is used as a term to describe the participants in my study and their generation as narrowed within my Chapter Two limitations section.

Over 40 million millennials are in the work force (Schwabel, 2012) and the literature suggests that millennials, “behave in ways that are readily identifiable, often predictable, and frequently unique to the generation,” (Hershatter & Epstein, 2010, p. 212). Oblinger (2003) stated that the millennial generation is heavily influenced by technology in college and at work. Sandeen (2008) found that millennials have definitive preferences regarding how they learn and what organizational learning supports they use. My study findings align with the literature regarding the millennial generation. Millennials articulate their thoughts well and are able to describe how organizational learning supports can improve to better meet their needs. Hershatter and Epstein (2010) said, “managing, directing, and motivating millennials is a challenge, an opportunity, and a learnable skill,” (p. 212). Based on my study findings and their implications, scholars and practitioners can learn from millennials and improve how they support the development of this generation in the workplace.

The findings coalesce to form the Millennial Organizational Learning Support Model shown in Figure 3. Although my research goal was to determine millennials’ organization learning support preferences, the findings from my study were sufficient to begin to develop an

emerging learning support model for the millennial generation. The emerging Millennial Organizational Learning Support Model is built on the findings of my study, which support, expand, and add new knowledge to the adult education and human resources development (HRD) literature on millennials and organizational learning supports. The model begins with millennials in the work force who require new knowledge to work. For millennials new knowledge is best acquired through a three-step process that includes the big-picture context for learning, introductory information, and rapid application. Application of new introductory information is facilitated by the option of working independently or in small groups and is supported by learning guides who are mentors and subject matter experts (SMEs), as well as reference materials for obtaining answers to questions. In practice the model is flexible and can be entered at big-picture, new information receipt, or application steps. When the model is not used in a linear fashion, millennials use SMEs, mentors, reference materials, or small group learning participants to help fill the requirements of the steps that were missed.

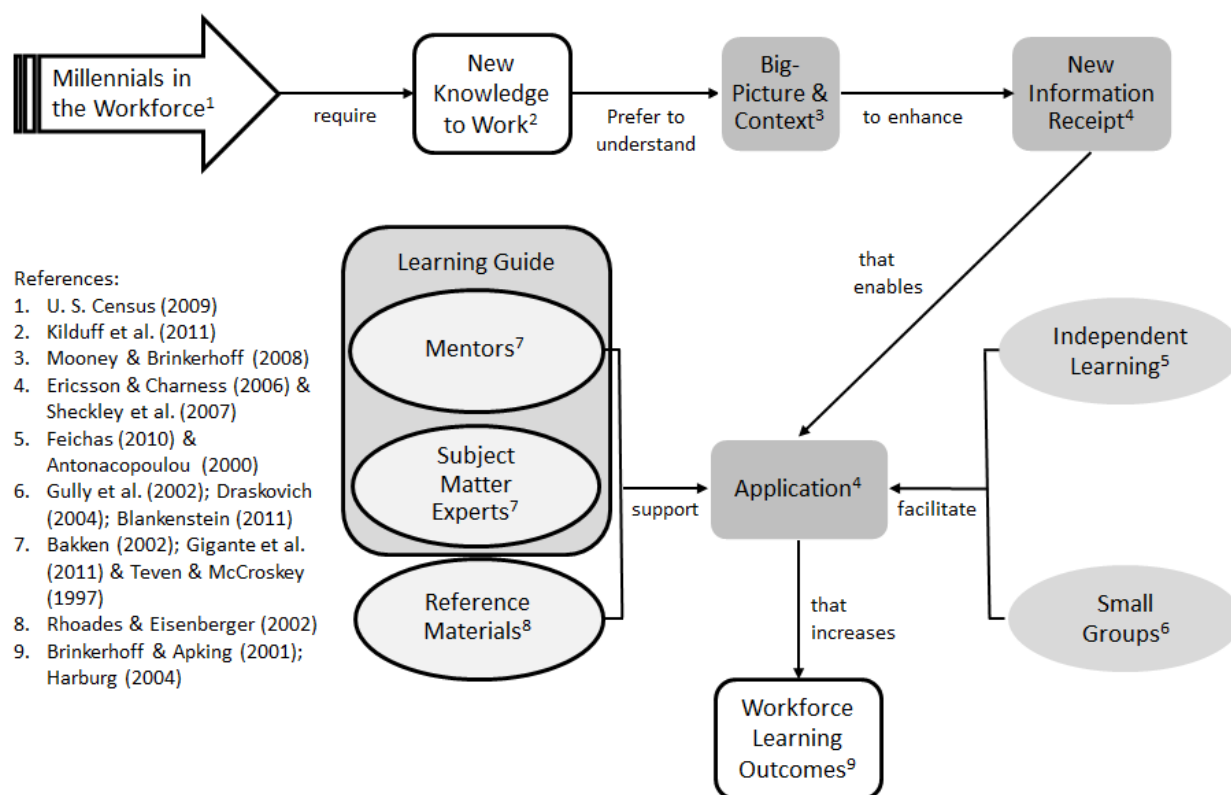


Figure 3. Millennial Organizational Learning Support Model

The Millennial Organizational Learning Support Model is for use by scholars and learning practitioners to understand the organizational learning support preferences of millennials in the workforce. Scholars can use the model to expand their organizational learning support thinking and research for the millennial generation. Learning practitioners can leverage the model in the design phase of learning experiences for millennials by picking amongst model elements or applying the model in its entirety as the basis for including organizational learning supports in learning designs.

In the balance of this chapter, I present three conclusions based on the findings that emerged from participant data:

1. Millennials desire a three-step learning process
2. Millennials prefer having the option of learning independently or in small groups
3. Millennials prefer an array of purposeful performance support

Each conclusion is described as supporting, extending, or adding new knowledge to the literature (Rocco & Hatcher, 2011), and includes practice implications for scholarship, as well as learning practitioners and leaders. I close the chapter with recommendations for future research and some final thoughts.

Millennials desire a three-step learning process

Based on the findings of my study, millennials understand learning as a process that is necessary for them to be successful at work. Millennials are regularly assigned work they have never done before and see learning as supportive in meeting new work expectations. When millennials think about learning, they describe three interrelated components that include: big-picture, receiving new information, and application of new information. These three component parts can then be brought together to form a model of millennials' preferred learning process.

Big-picture

Big-picture is a clear articulation of the learning and application objectives associated with a learning experience and the outcomes for the learner and the organization, and is in many ways similar to the ideas of Brinkerhoff and Mooney (2008). Brinkerhoff and Mooney's (2008) research demonstrates the increase in transfer-of-training when four key big-picture questions are answered for learners:

1. What am I going to learn?

2. How will I apply what I'm going to learn?
3. How will I benefit from what I'm going to learn?
4. How will the organization that I work within benefit from what I'm going to learn?

I found that millennials preferred having the answers to those questions before participating in training or receiving new business information. Brinkerhoff and Mooney (2008) portrayed the answers to the four questions as providing a line of sight for learners that supports deeper engagement in the overall training effort. Brinkerhoff and Mooney (2008) continued,

If we—as designers, facilitators, consultants, and leaders of training—cannot clearly and specifically articulate the line of sight, how can we expect trainees or line managers to make the connection between the training, the application back on the job, and the results? (p. 41)

The importance of line of sight elevates when practitioners want learners to apply what they are learning and leaders desire to hold learners accountable for the application. The participants in my study asked in their own ways, for line of sight.

Interest in big-picture also aligns with Speicher, Kehrhahn, Bell, and Casa's (2011) research regarding novice learners and the perception of applicability. Speicher et al. (2011) found that novice learners who were unsure about how they would apply new information often focused on superficial aspects of what they were learning instead of grasping similarities with existing practice. Adding cues (prompting or provision of hints) regarding application during the learning process increased transfer of training for novice learners (Speicher et al., 2011). Early in their careers, millennials can be considered novice workplace learners and when they ask for big-picture, they are asking for cues regarding relevance. Cues, in the form of answers to Brinkerhoff and Mooney's (2008) four questions, allow millennials to understand the applicability of what

they are learning such that they invest time accordingly. My study not only supports the Brinkerhoff and Mooney (2008) and Speicher et al. (2011) scholarship, but also serves to expand the literature by adding qualitative research results from millennials not previously studied to demonstrate that this generation desires big-picture line of sight.

Although there are notable similarities between my study and the work of Brinkerhoff and Mooney, my research does not support the Brinkerhoff and Montesino (1995) submission that post-training discussions with learners regarding how they will apply new knowledge is preferred. In fact, there was no mention of formal post-training interventions at all from the participants. The millennials in my study were focused on what they wanted to learn and why, and were quite interested in applying new knowledge to work without additional discussion. This is important in expanding our understanding of millennials and learning, because longer learning processes are not preferred by this generation and may result in millennial learner disengagement from the learning process prior to meeting established learning objectives (Hunter-Jones, 2012). As a result, according to the big-picture definition, learner and organizational outcomes from learning may not be achieved.

New information receipt

For millennials, new information receipt is the process and result of being provided with reference materials or resources needed to acquire new knowledge or skill. In Chapter Three I presented a millennial organizational learning support preference that encompassed receiving just the right amount of new information such that application could begin. For millennials, just enough new information means no extraneous or historical material that does not directly support application. Receiving new information for millennials is definitely qualified and quantified based on the ability to begin application. Just the right amount of new information is an

important concept for scholars because there is benefit in understanding the impact on learning for millennials to have the right amount of new information. Millennials believe that having just the right amount of information minimizes overall training time and helps them to learn and accomplish new work and as such, meet their professional goals.

The HRD literature states that adult learners demonstrate information seeking processes and behaviors (Krikelas, 1983). Krikelas (1983) states that there are four information seeking steps: (1) perceiving an information need, (2) the search for the information, (3) locating the information, and (4) applying the information. My research findings support Krikelas' information seeking process because millennials routinely execute the information seeking process. Millennials though have more definition than Krikelas (1983) regarding the third step, they want to not only locate information or have it provided, but they want to receive just the right amount of information such that application can begin. Having just the right amount of new information is an important distinction for scholarship because the provision of too little information and application is likely unsuccessful; too much information and the millennial learner may disengage from the learning process. For millennials information no longer carries the Krikelas' (1983) high-level definition, it is now qualified and quantified by what is required for application to begin.

Similar to Krikelas' (1983) research on acquiring information, Weiler (2005) investigated information seeking solutions for millennials and found they wanted a dream machine: "When asked to describe a 'dream information machine,' the [millennial] groups consistently imagined a machine that was a "mind reader," that was "intuitive," and could determine their information needs without them having to verbalize them," (p. 50). In dream machine context, information needs for millennials are qualified and quantified by how much information is needed to begin

application. That is part of the underlying proposition of a dream machine. Millennials are tired of receiving too much information and want a machine to provide them with just enough. My research supports Weiler's (2005) research that millennials desire efficient acquisition of information but again adds the qualification and quantification component of the information provided to support learning for this generation.

It is important to consider how to qualify and quantify what information is required to begin application. For more complex tasks, millennials are comfortable with iterating through an information receipt and application process. This causes the need to consider how to parse information provision and application to create iterative learning cycles millennials can execute. The need to parse information and create iterative learning cycles is additive to HRD and adult education literature.

Application

Millennials prefer to apply new information as quickly as possible to support their learning. This preference supports the literature in that both Sheckley (2005) and Ericsson and Charness (2006) studied the impact of deliberate practice, including the application of new knowledge, in real work situations and returned very positive results. Sheckley (2005) found that an, "experienced based, multifaceted [learning] process works best," (p. 15).

My findings directly support Sheckley's (2005) study of teachers at a mid-sized suburban school regarding the importance of deliberately applying new information. Sheckley (2005) stated, "The more multifaceted, multidimensional, and experienced-based the process used to enhance learning, the more likely it will be successful," (p. 4). My study demonstrates that Millennials gravitate to these types of application experiences because they enjoy them, they are challenging, and they help meet learning goals. Even more indicative of their interest in

challenging practice is when millennials' learning is self-directed. When learning on their own, the types of practice they engage in typically has many variables and is complex. Not only do millennials prefer robust application efforts for themselves, they also prescribe them when teaching others. The examples I heard for teaching others included a wide variety of multi-dimensional deliberate practice. The concept of deliberate practice is also found in Ericsson, Krampe, and Tesch-Römer (1993) who found that, "Individuals should attempt to maximize the amount of time they spend on deliberate practice to reach expert performance," (p. 368).

As my study indicates, there is a need to add a time element to deliberate practice for millennials to align with this generation's preference for organizational learning supports. Although millennials agree with the importance of new information application, they have a much quicker timeline in mind for new initiating practice than the literature suggests. This is important because previous research (Sheckley, 2005; Ericsson & Charness, 2006) does not ascribe a time component to application and deliberate practice. The deliberate practice literature (Sheckley, 2005; Ericsson & Charness, 2006) speaks to the importance of application but does not say how quickly application should occur in learning designs. The same efficiency that is expected for new information receipt is preferred by millennials for initiating application.

Three-step learning process

Millennials described three parts or what I term steps of a learning process that helps them learn and train others (see Figure 4). This process can serve as a foundation for millennial generation development and learning in the workplace. The three steps, which I have explored in this first conclusion are: (1) providing learners with big-picture context, (2) new information receipt, and (3) rapid application of new information.

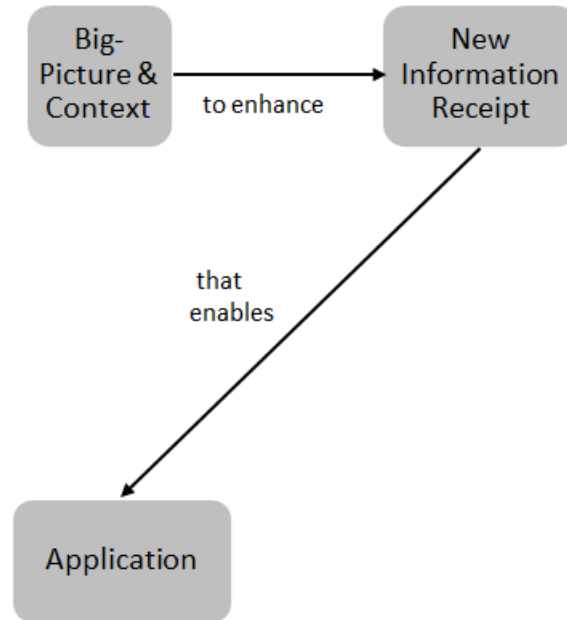


Figure 4. Millennial Three-Step Learning Process

Although the work of Brinkerhoff and Mooney (2008), Krikelas (1983), Weiler (2005), Sheckley (2005), and Ericsson and Charness (2006) support the new process I propose, these only provide discrete pieces of a whole, and fall short of putting forth a comprehensive idea of the learning process specifically adapted for millennials.

Within the HRD literature there is a similar model. Woodall and Hovis (2010) present an eight-phase design methodology used for learning program designs, yet they do not ascribe it to any particular generation. Of particular relevance to my proposed model are three of Woodall and Hovis' (2010) steps: *prepare me*, *tell me*, and *let me*. The *prepare me*, or readiness phase, conveys learning objectives, anticipated outcomes, and benefits of the program. The *tell me*, or presentation phase, includes the provision of facts, concepts, procedures and principles, or what millennials define as information. The *let me*, or practice phase is for applying the information received in the *tell me* phase. The five remaining phases of the Woodall and Hovis (2010)

process include: show me, check me, support me, coach me, and connect me but I think millennials would deem these extraneous. My participants specifically discussed their preference for a three-step learning process which was best articulated by Glen when he desired wanting the big-picture, just enough new information, and rapid application so that he and his team could have done a better job on a leadership development project. Beyond the three-steps, millennials just aren't interested, and including additional steps will likely result in learner disengagement, weak transfer-of-training, and less than desired related work performance for this generation.

Overall, the three parts proposed in my model come together to form a purposeful and generation-specific learning process, which I contend has significant value. Millennials can reap the positive returns when an employer incorporates a robust process that aligns with their specific preferences for organizational learning supports. Millennials benefit because the learning effort is efficient and meets their expectations for learning new skills that allows them to accomplish new work assignments and support organizational success. Moreover, organizations benefit from applying this learning process because millennials have determined and expressed that, when they understand the big-picture for learning, and have just enough new information such that application can begin, they are more engaged in learning and learn more quickly. Thus, organizations have workers who are engaged in learning and work, and are supporting the achievement of business goals and organizational strategy, which according to the Corporate Leadership Council (2004), results in upwards of 40 percent of a worker's performance improvements.

Implications for practice

For practitioners in the training, learning, and development fields, adoption of the three-step learning process for millennials demonstrates a practice informed by research. Since

learning practitioners typically convey learning objectives at the outset of learning experiences, practitioners should extend this by adding the big-picture components of application, and learner and organizational impact to learning experience introductions. Practitioners would then be able to integrate learning introductions that not only allow for, but encourage the presentation of small knowledge chunks rather than the historical provision of large amounts of information to millennials. Orienting and introducing new skills, processes, or knowledge by way of smaller, intentional pieces supports the goal of providing ‘just enough’ new information.

With an understanding of millennial learning preferences, practitioners should leverage smaller knowledge chunks (Weiler, 2004) and provide opportunities for rapid application (Sheckley, 2005). Practitioners should prescribe the timing and delivery of new information provision and rapid application to positively influence training transfer (Weiler, 2004; Sheckley 2005).

My study data neither supported or refuted millennials’ preference for a three-step learning process that continued until learning objectives were met. That said, others including Casey and Goldman (2010) and Kolb (1984) have found adults are likely to continue learning until they are satisfied with the outcomes. As such, practitioners have the option to develop a training design that supports iterative new information/rapid application learning cycles (Casey & Goldman, 2010) to support complex learning requirements. Practically, this may result in the breaking down into multiple iterations previous designs that introduced significant amounts of new information followed by lengthy application efforts. For many practitioners, considering and adopting the new process may be challenging as it may not align with currently held mental models for training design resulting in possible rejection of the new process (Sheckley, 2005). To mitigate potential lack of adoption concerns, practitioners should explore the use of the three-

step learning model by creating and testing designs in pilot settings. Pilots should incorporate control groups that allow transfer of training analysis between the new three-step learning process and historical approaches.

For organizational leaders, three key implications of using this model arise that will likely improve the performance of millennials at work. For work that is assigned, leaders should explain the big-picture of the work. This will help millennials understand how their work relates to other work and how they contribute to the organization's success. With a shift to the three-step learning process, organizational leaders should support and adopt it in their development efforts. If leaders are open to change, they have significant power over the introduction of new training approaches and can help accelerate improvement in learning. Lastly, leaders should consider thinking and communicating in smaller knowledge chunks. This is critical given that leaders were oft-criticized by my participants for being verbose in business and strategy presentations.

Millennials prefer having the option of learning independently or in small groups

The findings from my study evoke the dual premise that millennials like to learn on their own and like to learn with others. They prefer having the option of learning either independently or in small groups based on which choice the millennial thinks affords the most value for the learning situation. It is common for millennials to want to learn independently when the related work task will be performed independently. Similarly, if the millennial will engage with others to accomplish work then they typically want to learn with others about how to perform. There is no preference for either learning independently or with others, but having the option for either approach is important (see Figure 5.) for successful application of new learning.

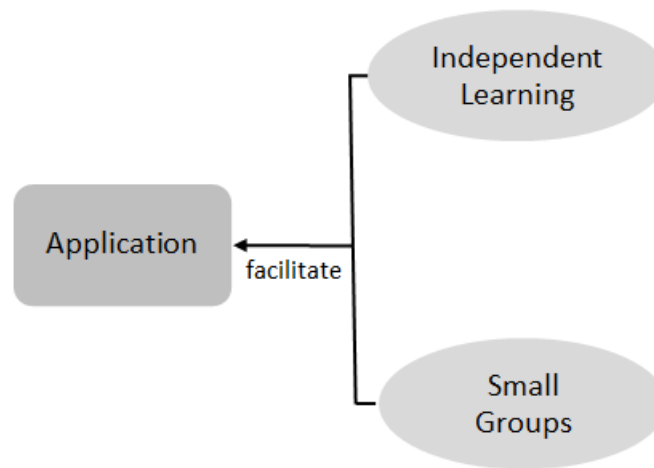


Figure 5. Millennial Preferred Learning Options

My research findings support the HRD literature regarding the value of independent and small group learning and extends the research with millennials by introducing the need to use independent or small group learning based on learner needs and perceptions of learning application. Millennials have experienced independent learning and small group learning and know which option is better for them to meet learning and performance goals based on how the work task they are learning is performed.

Additionally, when millennials are given the option to choose small group or independent learning, they take greater accountability for their learning because they are choosing what they perceive to be the best method for learning. When millennials learn at work, using methods they select and know work well for the learning and performance tasks at hand, there is a strong likelihood that learning and performance outcomes will improve. When individual work performance improves, as measured by independent effort or team output, so does the success of the individual and the organization. As Fred Harburg, senior vice president of leadership and development at Fidelity Investments (2004) articulated, “we are not in the business of providing

classes, learning tools or even learning itself. We are in the business of facilitating improved business performance,” (p. 21).

Independent learning

My study found that millennials are successful in learning and performing when they opt for learning independently to support independent work. This learning method for millennials supports Antonacopoulou’s 2000 research that found a direct positive correlation between self-development and self-directed learning and the learner and the organization, “self-development and self-direction in learning are promoted as mutually beneficial for both the individual and the organization,” (p. 504). Similarly, my research supports Feichas’ (2010) finding that new music instrument students preferred to learn how to play their instrument independently prior to joining a musical group. Feichas (2010) found challenges when, “the teaching methods at the music school tend to squeeze all the students into the same mold,” (p. 57), because the students had different experiences which were not aligned with the rigid music school teaching methods. Feichas (2010) concluded that there was increased learning success when,

It [independent learning] gives students autonomy rather than a passive attitude and encourages them to make choices and take responsibility for that. In other words, it invites students to be active in their own learning process. It creates space for raising students’ awareness since they are asked to question their needs and engage in a reflective form of self-assessment. It pushes students to look for solutions when facing challenges. It contributes to valuing and balancing their skills and knowledge respecting their different levels. (p. 57)

In alignment with Feichas’ (2010) work, millennials’ independent work usually combines with others to produce a business outcome, and if this generation is expected to perform

independently the preference is often to learn independently. It is important to understand millennials' comfort with learning independently. Millennials are comfortable taking accountability for their learning, choosing organizational learning supports that help them learn, and ensuring they have enough knowledge to execute their work. For example, millennials select and use the aforementioned Millennial Three-Step Learning Process to achieve success when learning on their own. When millennials are provided with an independent learning option and they select it, the likelihood of increased transfer-of-training and improved performance is high (Antonacopoulou, 2000; Feichas 2010).

Contrary to Antonacopoulou (2000), Feichas (2010), and my research, Smith (2000; 2003) studied preferences for independent and small group learning by millennial apprentices in the workplace, who were being trained in engineering, electrical, building, and hairdressing trades, and found they wanted more structure and group learning. Smith's (2000) work is not supported by my research which indicates millennials are quite comfortable learning on their own. Smith (2000) found that,

Apprentices most prefer structured training with well-organized programs where the expectations of them are clear. Preference for learning alone or independently was not high, with stronger preference being shown for learning in a social context together with instructors and other learners. (p. 497)

The lack of support from my research related to training apprentices is important to note because there may be a difference in the value of independent learning based on the type of training or characteristics of the trainee, for example college educated workers like my sample or non-college educated apprentices.

Learning in small groups

Millennials' responses in my study support the HRD literature regarding the preference of learning in small groups. Gully et al. (2002), Draskovic (2004), and Blankenstein (2011) studied small group learning and found quite positive outcomes. As mentioned previously, Gully et al. saw 100% learning outcome improvement when individuals learned in small groups instead of independently. Draskovic et al. (2004) found that small group learning improved performance outcomes: "the investigated small group learning paradigm seems to stimulate specific kinds of interactions in the group which lead to knowledge elaborations, and bring about knowledge acquisition," (p. 471). Blankenstein et al. (2009) found the value of adding small group discussion to learning tasks, "taking part in a relevant group discussion had a direct positive impact on recall, (p. 198).

Understanding that millennials thrive in learning efforts when they can choose to participate in small learning groups based on their own learning needs and job expectations is essential. They are appreciative of the easy dialogue that takes place and the availability of multiple perspectives related to problems of practice. Millennials often desire to learn in small groups when they are expected to perform as a small group and they think their performance outcomes increase when they can learn in small groups to perform together. Like when afforded the opportunity to learn independently, if millennials have the option to participate in small group learning, related learning and performance outcomes will likely increase (Salas, DiazGranados, Klein, Burke, Stagl, Goodwin, & Halpin, 2008). Although there is an overwhelming amount of adult education literature regarding the value of learning in small groups, and according to Cafarella (1993) it has captured the interest of adult educators, that method may not always be the best choice. The preference for millennials is the ability to choose

between independent and small group learning depending on which approach the millennial perceives optimizes their learning.

Implications for practice

Based on my research findings, learning practitioners and leaders should provide independent and small group learning options for millennials use in supporting their learning and work. Practitioners and leaders should determine whether the work that requires learning support is performed independently or in small groups and cater independent or small group learning options accordingly.

When practitioners and leaders provide millennials with the ability to choose either independent or small group learning millennials become more accountable for their learning, and have the opportunity to become and stay more engaged with learning programs. Providing learners with options from which they can choose creates effective learning (Spiro, Henderson, & Clifford, 2012). My findings provide the opportunity for practitioners and leaders to make design decisions based on millennials' preferences for independent and small group learning options.

Millennials prefer an array of purposeful performance support

Gottfredson and Mosher (2011) defined performance support as “the practices and tools the organization provides its people individually and collectively for them to perform their work successfully and efficiently” (p. 3). Performance support practices and tools can be either static reference materials or live support in the form of SMEs and mentors (see Figure 6).

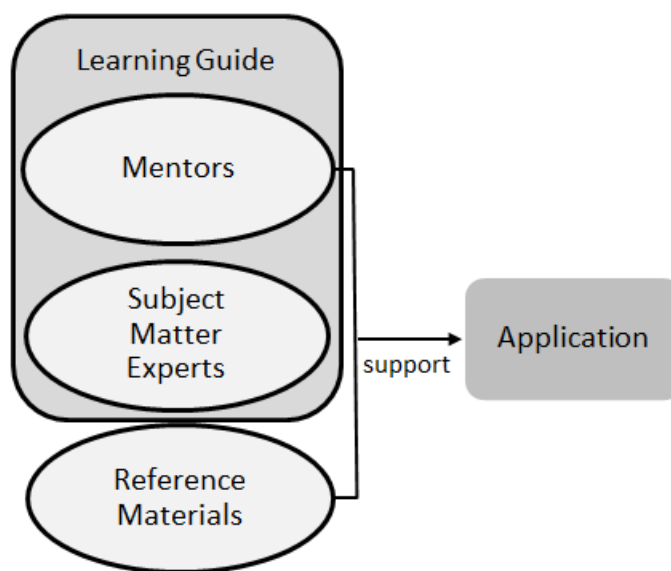


Figure 6. Millennial Performance Support Preferences

Regardless of the form of support, performance support ultimately serves as a source for answering millennials' questions and for creating or supporting new learning. My research supports the adult education and HRD literature (Rhoades & Eisenberger, 2002; Hochwarter et al., 2006) that confirms the value of performance support. Rhoades and Eisenberger (2002) and Hochwarter et al. (2006) found that when adult learners think performance support, including feedback and learning technologies, will be available, and it is, learning is enhanced. Rhoades and Eisenberger (2002) found there was strong linkage between the availability of performance support and extra-role performance. This is important because I found that millennials are interested in having the option to learn independently, which is an extra-role activity, thus when performance support is available for use when learning independently, learning and performance outcomes are likely to increase (Rhoades & Eisenberger, 2002; Antonacopoulou, 2000).

Millennials prefer performance support that is accurate and easily accessible

The perception that performance support is available to millennials is certainly helpful (Rhoades & Eisenberger, 2002), but as my findings suggest, millennials' high expectations for not just performance support, but support that is timely and of high quality is worthy of new consideration. The sense that reference materials, SMEs, and mentors should be accessible almost any time, adds new knowledge and specificity to the current definition of performance support (Brinkerhoff & Mooney, 2008; Gottfredson & Mosher, 2011). I found no evidence in the HRD literature that qualified performance support in terms of quality and timeliness of availability, and as such it is difficult to address the scope, scale, and quality of performance support necessary to support millennial workers' learning success. This is problematic for those studying this generation in particular, and workplace learning in general, because if performance support that meets millennials' expectations is not available learning will be less effective and result in lower levels of performance improvement (Brinkerhoff & Apking, 2001). This lack of research is also troubling for the learner's themselves, because without appropriate understanding of learner needs, millennials can face too little or inaccurate performance support that result in having their questions go unanswered or answered incorrectly. Or conversely, they could struggle with too much performance support which may inhibit ease of support access and could cause potential disengagement from the learning effort. With too little, inaccurate, or too much performance support, the result is inefficient learning, that can lead to a failure to successfully prepare workers for new roles and work (Gottfredson & Mosher, 2011).

Millennials prefer SMEs and mentors who demonstrate interest in their success

Millennials in this study identified SMEs and mentors as a performance support, but, the preferred characteristics of those individuals do not align with current definitions of SME and

mentor. Pace and Sheehan (2002) referred to a SME as, “An individual who, by virtue of position, education, training, or experience, is expected to have greater-than-normal expertise or insight relative to a particular technical or operational discipline, system, or process.” (p. 3). For millennials, the definition of SME is less robust and does not require greater-than-normal expertise or insight. Millennials define a SME as an individual who has the knowledge, competence, and availability to answer questions that support millennials’ learning. Germain (2011) described mentors as people with advanced knowledge committed to providing support for a junior employee’s upward mobility and long-term career. For millennials the definition of mentor does not require commitment to supporting their upward mobility and career. Millennials require mentors to only be interested in them from learning, work, and career perspectives. For lack of more descriptive terms in their vocabulary, it appears that my participants used the identifiers subject matter expert and mentor when describing the people that answered questions, but they were not referring to the more common HRD definitions offered by Pace and Sheehan (2002) or Germain (2011). A more precise role name may be what I term, learning guide. Based on millennial insight from my study, a learning guide is an individual with the knowledge, competence, and availability to answer questions or provide resources that support learning for millennials, and who demonstrates sincere interest in millennials’ success.

Millennials believe having individuals answer their questions is valuable (Gigante et al., 2011). My findings extend this idea by revealing that having access to these individuals is also a requirement of millennials. This calls for a shift in thinking from considering learning guides as helpful but not necessary, to a necessity for millennials’ learning success.

Millennials unequivocally assume that learning guides are available to bring knowledge, and competence to support learning. This assumptive premise not only supports adult education

literature, because the literature shows a positive correlation between SME support and learning results (Bakken, 2002; Gigante et al., 2011), but expands the literature by introducing learning guides as an imperative for millennials' learning success. Because the millennials in my study came to expect learning guides as an organizational support, research on learning guides could be refocused from exploring the value of learning guides to examining how best to provide learning guide support to millennials. Of similar import to millennials other than learning guide knowledge, competence, and availability is a learning guide who demonstrates a sincere interest in their success. Demonstrating sincere interest in millennials' success includes taking the time to meet with millennials, proactively following up on application outcomes, and expanding discussions initiated by the learning guide on topics such as millennials' workplace and career successes, challenges, and interests. Each of the components of demonstrating interest requires the learning guide to invest time in the millennial and nurture some type of professional relationship.

My study found that millennials expect learning guides to be available and willing to engage in a working relationship with Boomer and X Generation learning guides. Because my research does not convey that these generations (who most often serve as learning guides to millennials) desire a similar personal connection, the potential for conflicting expectations and preferences with millennials seems likely. It will require an understanding of what is expected in these relationships and how best to deliver on the opportunity to sincerely connect with millennials. We know that when adult learners think performance support will be available, and it is, learning is enhanced (Rhoades & Eisenberger, 2002; Hochwarter et al., 2006); thus having learning guides demonstrate sincere interest in millennials' success becomes another

performance support component that adds to the valuable perception and reality that the organization is supporting the learning needs of millennials.

There is a prevalence of professional relationships in the workplace and these are essential in terms of what gets done and who does it (Silver, 2008). Silver (2008) found that because professional relationships that support work are widespread, the value of relationships could be enhanced if the individuals in relationship were clear about the expectations and contributions anticipated from the relationship. My study supports and extends Silver's work by presenting millennials' expectations of, and preference for, knowledge, competence, availability, and demonstration of sincere interest in their success from learning guide relationships.

The preference for a sincere learning guide also resonates in the earlier work of Teven and McCroskey (1997). They explored pre-workforce millennials in an academic environment, and found a positive relationship between college students' perception of teacher caring and the students' perception of how much they learned in the teacher's course. Teven and McCroskey's 1997 study occurred with young millennials - who are now in the workforce. It is quite likely that the Teven and McCroskey's (1997) findings are now manifested in the millennial workforce I studied. As such, from the millennials' perspective the benefits of having individuals who demonstrate sincere interest in millennials' success has followed them from college into the workplace.

Finally, Osborn et al. (1999) in their study of workers from Generation X (born between 1965 and 1975) augmented the workforce relationship construct when they found that demonstrating sincere interest in Generation X mentees was a critical factor in the success of mentor relationships. Reaching Generation X workers one at a time, through individual mentoring relationships, generated better results than organizational communications and

directives (Osborn et al., 1999). This is interesting because my research with millennials had a similar finding despite the different generation sample. Given this overlap, the millennial generation will likely benefit from the same personal involvement and interaction that Osborn et al. (1999) found with Generation X.

Implications for practice

Practitioners have a number of performance supports that can be made available for supporting millennial learning. Knowledge management systems, Wikis, SharePoints, and organization intranet sites should be designed and constructed to support learning by providing searchable reference material databases. These technology support solutions should be built based on both usability insights from millennials and information insight and contributions from SMEs. The materials within the reference access solutions should be organized by key word searches of documents, recordings, presentations, online learning events, videos; in short, any format that can reside in a digital media repository. Reference material access solutions should expand to include threaded discussion, chat, and email connectivity with learning guides, all for the purpose of efficiently attending to millennials' questions and learning needs.

The role of the learning guide becomes critical for practitioners and organizations to consider. Given that millennials absolutely expect learning guides to be readily accessible requires that those who serve in those roles are available. Of more importance is the gauntlet that practitioners must take up regarding how to have learning guides demonstrate sincere interest in millennials' success. As mentioned earlier in this section, and based on my interviews, the baby boomers and Generation X individuals who often serve as learning guides for millennials may not have experience demonstrating sincere interest in professional learning relationships. As a result, learning practitioners must find ways to prepare learning guides to demonstrate sincere

interest in millennials and communicate why it is important for millennial and organizational success.

For organizational leaders, there is an investment to be made to understand what performance support is and how millennials use it. According to Gottfredson and Mosher (2011), it is unlikely that organizational leaders understand the importance of performance support in the learning process; and specifically the role that performance support plays in supporting millennial generation learning. Since many opportunities for learning occur on-the-job (Dochy, Gijbels, Segers & Van den Bossche, 2011), organizational leaders must consider providing performance support for on-the-job development activities not delivered by learning practitioners. This requires leaders to think through new work assignments for millennials and ensure the appropriate reference materials and learning guides are provided to support new learning and work.

In addition for organizational leaders my research uncovers the need to enhance the accountabilities of learning guides by demonstrating sincere interest in millennials' success. As mentioned previously, this new accountability may be quite challenging for learning guides because the request is new and requires change and additional investment of time and effort when supporting millennials. Leaders should support the increase in learning guide responsibilities by being role models for demonstrating interest in millennials' success and ensuring that those who perform in similar roles meet the new expectations.

In conclusion, my findings supported the development of the Millennial Organizational Learning Support Model (see Figure 3) that begins with millennials in the work force who require new knowledge and skills to work. For millennials new knowledge is best acquired through a three-step process that includes the big-picture context for learning, introductory

information, and rapid application. Application of new introductory information is facilitated by the option of working independently or in small groups and is supported by learning guides and reference materials. These findings lead to three conclusions which are: millennials desire a three-step learning process, millennials prefer having the option of learning independently or in small groups, and millennials prefer an array of purposeful performance support.

Future Research Recommendations

Given the paucity of empirical research regarding the millennial generation's use of organizational learning supports, future study can determine if the themes identified herein are wholly representative of those that should be used to enhance learning for this generation. The high-potential employees participating in a leadership development program, who were used for my research project, might be too limiting of a sample to support wide generalization of the findings across the millennial generation. Additional research that leverages varying millennial demographics could be quite useful in creating a wider view of the appropriate organizational learning supports for the millennial generation.

That said, based on my findings and conclusions, I would first recommend quantitative research be conducted using my findings as a hypothesis generator. Quantitative design might be useful in determining the breadth of application to a larger millennial population. A quantitative research approach could also be useful in determining possible expansion of the application of my study findings into other generations or environments like non-profit, not-for-profit, volunteer settings, or other business organizations.

Second there are several recommendations for additional and new research based on my Millennial Three-Step Learning Process that consists of: (1) providing learners with big-picture context, (2) just enough new information receipt, and (3) rapid application of new information.

Qualitative research could help to understand the factors involved with adopting the three-step learning process. Focus areas of this research could include, capturing existing practitioner mental models of learning processes, identifying the challenges associated with adopting the new model, and determining how to enhance training design paradigms to reflect the new model.

Third, qualitative and quantitative research methods could be applied to determine how much new information meets the ‘just enough’ requirement. The ‘just enough’ requirement will need to be understood and quantifiable on a case-by-case basis by learning practitioners to successfully implement the new Millennial Three-Step Learning Process. Outcomes of using the new process in terms of transfer-of-training and time-to-proficiency should be researched quantitatively. The impact on commitment to learning and engagement in training using the three-step model could be researched using qualitative methods. From a theoretical perspective, the new process is ideal for millennials and may or may not be valuable for other workforce generations, as such an additional opportunity for scholars is to consider the implications related to expanding the three-step learning process beyond the millennial generation.

Fourth, there is much to learn about how learning guides can demonstrate sincere interest in millennials’ success. Qualitative research exploring the idea of relationship, beyond receiving adequate responses to questions and guidance, could reveal deeper understanding of the expectations that millennials have for the people that help them learn. In addition, examination of what learning guides expect from relationships they have that support learning is also appropriate to enhance mutually beneficial learning relationships. The potential exists that better definition and delivery of millennial-learning guide relationships could enhance learning outcomes beyond what is known today.

Finally, let me state that throughout my time with the participants, there was often an undercurrent of wanting to be efficient with learning as if time held quite significant value for millennials. Probes often revealed the importance of time related to personal time as well as maximizing productivity while working. There was insufficient data to develop a finding from these thoughts, yet there was enough consistency to propose additional research to examine the relationship between efficient use of time and learning.

In my study's original conceptual framework there is a focus on technology to support millennial learning (see Millennials Use and Value Technology to Learn and Work). Empirical evidence in the literature was clear that technology supported millennial learning and resulting performance. Later in the study's conceptual framework, many "experts" called for enhanced use of learning technology for millennials because that generation is so reliant on technology to work and socialize (see Chapter One: Millennial Learning Support Preferences Remain Unexplored). My participant data is not saturated with calls for learning technology support, but rather an occasional response to probes to use the right technology for the right purpose and not for the sake of the technology itself. There is such a wide gap between what was expected from millennials regarding technology and what they said, that further research to broaden understanding would be valuable.

Final Thoughts

Four years ago as a developing scholar-practitioner I traveled to a field office of the insurance company for which I worked to hold a focus group with recent millennial graduates of a 16-week training program I was responsible for delivering. To a person, the graduates said they disengaged from the training program and from learning at 10 weeks. They attended the remaining six weeks but just checked the proverbial box and put in their time. In terms of self-

directed learning, each program attendee made a decision to disengage from the formal training program at 10 weeks. The field office focus group helped me realize that we needed to change our approach to training the millennial generation at work, or transfer-of-training and resulting work performance expectations would be missed.

Four years later, I feel confident that adult education and HRD scholars can use the new insight my study generated to advance learning theory and concepts, as well as initiate new research, for the millennial generation. This includes the exploration of a three-step learning process, interactive and non-interactive learning opportunities, and approaches taken to optimize the provision of performance support. Learning practitioners can leverage my research findings to pilot new training designs, and enhance and build new organizational learning supports that help accelerate millennial learning and performance improvement.

Appendices

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Appendix A

Trainee's Invitation to Participate in this Study

Dear Trainee,

My name is Kevin Thompson and I am a Ph.D. candidate at the University of Connecticut. As part of my doctorate research, I am conducting a study on how millennials (age 18-34) perceive and value organizational learning supports like feedback, small group work, and performance support. Participants will receive a note of thanks for contributing their time.

HTC is the sponsor of the research project as it is interested in how learning solutions can be improved for millennial generation employees. HTC learning leaders will have access to preliminary and final research reports that I will write over the 3-6 months I will perform research with HTC employees. In the reports, pseudonyms will replace real names and best efforts will be employed to maintain participant confidentiality.

I would like to invite you to participate in this study if you are currently a millennial (up to age 34) and are willing to participate in two (1-1.5 hour) interviews and answer some brief follow-up questions (no more than 15 minutes) to verify research findings.

Here is an overview of the activities and time involved:

- ☐ Participate in two (1-1.5 hour) interviews over the next 60-90 days.
 - Answer questions related to your exposure to and use of organizational learning supports
 - Discuss the value you see in various organizational learning supports to support your learning
- ☐ Answer brief follow-up questions by phone to verify research findings.

There are no known risks to your involvement in this study, other than the inconvenience and time associated with the two interviews, and your participation or non-participation has no bearing on your involvement or status with HTC. I will use my best effort to treat the information I collect and your identity with confidentiality, however confidentiality cannot be guaranteed. All information regarding this study will be stored at a non-public location in a locked filing cabinet.

If you are interested in participating in this study or would like more information before you decide to participate, please email me at: kstmillennial@gmail.com or phone me at (860) 993-2144.

In your email response, please indicate whether:

- **Your age range is 18-25 or 26-34**
- **You are female or male**
- **Your highest level of education: High school, College, Post-graduate**

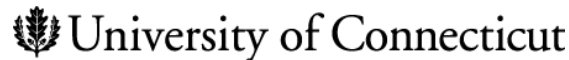
Once I have received your response, I will review it along with others, and select the first 15 that meet the required demographic criteria that includes 5-8 trainees age 18-25 and 5-8 age 26-34, and no more than 60% male or female participants. If you are chosen to participate I will send you a Consent Form that outlines the details of this study. Your participation in this study will begin after you have had a chance to review and sign the Consent form. Participants will receive a note of thanks for contributing their time to this important research project.

Thank you for your time and consideration – Kevin Thompson

Appendix B

Interview Participant Consent Form

Consent Form for Participation in a Research Study



Principal Investigator: Robyn Grenier, PhD.

Student Researcher: Kevin S. Thompson

Study Title: Organizational Learning Supports and the Millennial Learner

Introduction

You are invited to participate in a research study to explore how millennials perceive and value organizational learning supports like feedback, small group work, and performance support. You are being asked to participate because you are millennial, with short-term learning goals in a financial service organization. The researcher is conducting this study as part of the requirements of his doctoral dissertation.

Why is this study being done?

The purpose of this research study is to learn about how millennials think about and value organizational learning supports. The findings will expand the literature on professional learning.

What are the study procedures? What will I be asked to do?

If you agree to take part in this study, you will be asked to engage in three activities. You will participate in two interviews within the next 90 days. Occasionally over the 180 days that follow the interviews, you will be asked to verify the findings that arise from the research process by responding to brief questions.

1. As a participant in this study you will participate in two 60-90 minute interviews to gather your insights on organizational learning supports and their value to your learning.
2. As a participant in this study you will be asked to verify research findings by responding to brief questions.

What are the risks or inconveniences of the study?

We believe there are no known risks associated with this research study; however, a possible inconvenience may be the time it takes to complete the study.

What are the benefits of the study?

You may not directly benefit from participating in this study; however, we hope that your participation may influence the role of organizational learning supports as an effective element to professional development.

Will I receive payment for participation? Are there costs to participate?

You will not receive payment for participating in this study and you will incur no costs. Should you participate and remain a participant through to study completion, you will receive a \$15 gift card to Borders Books as a token of appreciation.

How will my personal information be protected?

The following procedures will be used to protect the confidentiality of your data.

- The researchers will keep all study records locked in a secure location.
- Only the researchers will have access to the tapes and transcripts.
- Audiotapes will be destroyed after three years.
- In all forms of data and in reporting study results, your name will be replaced with a pseudonym, and any other identifying information will be replaced with generic descriptors.
- All electronic files (e.g., database, spreadsheet, emails, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users.
- Only the members of the research staff will have access to the passwords.
- Data that will be shared with others will contain the pseudonyms assigned to your data to help protect your identity.
- At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.
 - The findings of this study may be shared with state and local agencies that design professional development opportunities in order to help guide professional development design. However, your name will not be identified.
- Confidentiality cannot be guaranteed should observations by the researcher at your work place require reporting child abuse or neglect to the proper authorities.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can I stop being in the study and what are my rights?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

You will be notified of all significant new findings during the course of the study that may affect your willingness to continue.

Who do I contact if I have questions about the study?

Take as long as you like before you make a decision. We will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-

related problem, you may contact the principal investigator, Dr. Robin Grenier at 860-486-9201 or the student researcher, Kevin Thompson at (860) 559-5341. If you have any questions concerning your rights as a research subject, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

Documentation of Consent:

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible hazards and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

Participant Signature:

Print Name:

Date:

Signature of Person
Obtaining Consent

Print Name:

Date:

Appendix C

Interview Protocol One The Millennial Employee and Organizational Learning Supports

Part 1. Introduction and Demographic Information

Before we begin, I would like to thank you for taking time out of your busy schedule to participate in this study. I have received your signed Consent Form. Do you have any questions about this study?

(Review procedures and requirements of study including: purpose, visits, member checking, data collection and security, and contacting me at any time).

During the next hour or so, I will ask you some questions about your experiences with, and thoughts about, your learning in this organization. This interview will be tape-recorded as indicated in the Consent Form so that I may review my questions and your responses to them at a later time.

I will keep all of your responses confidential. Only I will know your name. Your answers will be combined with those from other people I interview to get an overall picture of how millennials use and value organizational learning supports.

If you are uncomfortable with any aspect of the interview, please feel free to say so. We can stop the tape recorder or the interview at any time you wish. No explanations required.

Do you have any questions at this point? (Pause for questions. Clarify as needed.)

OK? Ready to begin?

Now that the tape-recorder is on, please state your name, the date, and that you consent to have your response tape-recorded.

Part 2: Background Information.

2.1 To begin, tell me a bit about your prior work experience? How did you find your way to your current position? (probe for number of positions)

Part 3: Training and Learning

3.1 Please describe a time when you successfully learned something new for work and how you got what you needed to be successful. (Probe for how they learned; what they learned; formal and informal training and learning experiences; are they still learning; probe beyond task level; pick points in time; another time?)

3.2 How could an organization support your learning? What would help you use, remember, or apply that learning? (Probe to deeply understand each articulated organizational learning support)

3.3 Have organizations you've worked for created obstacles or missed opportunities to support your learning? (Probe to deeply understand each articulated obstacle or missed opportunity)

Part 4. Optional Questions:

4.1 Have you helped someone else of your generation learn something new? How? (If no response, probe for beyond generation, hobbies, sports, new technology, parents, friends). How did you support them during that learning process?

4.2 Please describe another time when you were successful in learning something new at work and what you think you needed to be successful. (Probe for how they learned; what they learned; formal and informal training and learning experiences; are they still learning; probe beyond task level; pick points in time; another time)

Over the next 45 days, please think about what supports this organization is providing to help you learn. We will talk about them at our next meeting.

Again, I want to explain that this interview is confidential. If you have any misgivings about your interview in the next day or so, give me a call.

Thank you again for your time. Your responses have been very helpful.

Appendix D

Interview Protocol Two The Millennial Employee and Organizational Learning Supports

1. Tell me about something you learned at work since we last talked and explain how you learned it?

- What materials, tools, resources, people, etc., helped you to learn?
- What was most valuable and least valuable in helping you to learn?

2. Describe a time when you had to solve a problem at work?

- How did you do it?

3. If you were designing a perfect way to learn a new skill at work, what would your design look like?

Appendix E

Code List Table

Code	
Apply	Setting
Teams	Interaction
Courses	Facilitation
Independent Research	Design
Subject Matter Expert	Mentor
Resource Materials	Fit In
Big Picture	Buddy
Programs	On the job
Technology	Retention
Marketing Communication	Satisfaction
Permission	Compensation
Try	Show Me
Concepts	Expectations
Questions/Feedback	Goal setting
Independence	Tenure peer insight
Boss	Self-assessments
Stakeholders	LMS
Why	Groups
Delivery	Resistance
PowerPoint	Cross Functional
Time	Follow Up
Reminders	Contact Hesitation
Generations Working Together	Help Out
Holding Back	Comfort
Sametime	Audience
In Person	New Hire
Guidance	Career
Relationship	Teaching
Interest Level	Trainable Moments
Competition	Experience
Lectures	Reputation
Context	Training Cost
	Like To Do

Appendix F

Theme Code Cross Reference Table

Theme	Codes
1A: Big Picture	Big Picture, Stakeholders/Why, Interest Level, Context
1B: New Information	Resource Materials, Concepts, Design
1C: Apply	Apply, Try, Show Me
2A: Independent Learning	Independence
2B: Small Groups	Teams, Setting, Groups
2C5: Teaching Others	Teaching
3A: Reference Materials	Resource Materials
3B: SMEs & Mentors	Subject Matter Expert, Questions/Feedback, Boss, Holding Back, Guidance, Mentor-Coach
3C: SME & Mentor Interest	Subject Matter Expert, Questions/Feedback, Boss, Holding Back, Guidance, Relationship, Mentor-Coach, Interest In Me

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