

AN ABSTRACT OF THE THESIS OF

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Abstract approved:

This study investigated the relationship between age and employee training methodology. The study explored both employee training preferences and employee willingness to train as well as differentiated between age and tenure. Participants were 67 employees from two anonymous manufacturing companies in a Midwestern town and 48 employees from various occupational fields. Participants were given the newly-created Employee Training Scale (ETS), a measure incorporating employee training preferences, employee willingness, and demographic variables. I found that older employees actually preferred to incorporate technology into training more than younger employees did. In general, older employees and those with more job tenure preferred more of the training methodologies. However, younger, less tenured employees were more willing to participate in more of the training methodologies studied.

Keywords: training preferences, training methods, age differences

RELATIONSHIP BETWEEN AGE AND EMPLOYEE  
TRAINING METHODOLOGY

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## CHAPTER 1

### LITERATURE REVIEW

The workforce is an ever-changing place in which many individuals join as others leave. A common pattern one sees in the workforce is individuals join when they are young and inexperienced as older, experienced individuals are usually the ones to leave or retire. Many spend most of their lifetime in the workforce providing for themselves and loved ones.

As a person stays in the workforce, he or she goes through the natural process of aging. Aging refers to changes that occur in biological, psychological, and social functioning over time and, therefore, affects individuals on personal, organizational, and societal levels (Lange et al., 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). While aging is the process of going through various changes as stated previously, the concept of age is a multifaceted concept that cannot be described in just one definition or conceptualization. Sterns and Doverspike (1989) conceptualized age of workers in multiple ways. Below are two of these conceptualizations:

Chronological age refers to one's calendar age. In this approach the distinction between older and younger workers is based on calendar age. Organizational age refers to the aging of individuals in jobs and organizations. The aging of individuals in jobs and organizations is more commonly discussed in the literature about seniority and job or organizational tenure. The effects of tenure may often confound the effects of aging and vice versa. Nonetheless, organizational age may also refer to career stage, skill obsolescence and age norms within the company. (p. 301)

Aging individuals in the workforce may see changes within themselves related to various

aspects of their jobs such as motivation to work, job satisfaction, job performance, accomplishing tasks, and, specifically, getting trained or gaining new knowledge about tasks.

Training is a necessary process in many organizations. Training refers to the activities directed toward the acquisition of knowledge, skills, and attitudes for which there is an immediate or near-term application (Cascio & Aguinis, 2011). Most organizations train their employees so they may gain knowledge about the organization, the policies and rules, the job, and the specific tasks they will be required to do. Among these reasons and many more, it is obvious that training increases human capital in an organization. However, not all organizations have a training program set up. Training can be conducted in many ways (e.g., computer-based, lecture, on-the-job, coaching/mentoring, etc.). The training method used may depend on various factors such as the task an individual is being trained on, how many people are being trained at one time, and the specific individuals being trained. Individuals differ based on many characteristics. These differences may have an effect on how one prefers to be trained or how one learns best.

All individuals go through the process of aging. In the current workforce, a rather significant portion of the workforce is made up of a generational group called “the baby boomers.” This group of people is a generation made up of individuals born from 1946 to 1964. These employees are now on the brink of retirement, and younger generations are taking their place. The purpose of the current study is to examine the relationship between aging and employee training methods. The current literature is lacking in evidence to see if there is a relationship between an individual’s age and preference for specific training methods. As younger individuals enter the workforce, organizations

may need to reconsider their training methods and what is most effective or preferential for these people. This may lead to organizations completely restructuring their training programs, or they may not have to make any changes at all, but it is beneficial for organizations to know what works best for their employees. This information is vital for organizations to have this competitive advantage. The workforce has many opportunities for jobs for younger generations, so if younger individuals do not like how an organization is running, they may decide to take a different job at another organization, and the first organization mentioned could potentially fail due to the lack of recruiting new employees. Even though there is a lack of research relating age and training methodologies, there has been research conducted on both age of employees as well as training in an organization.

### **Aging in the Workforce**

There is an enormous amount of literature in regards to aging employees in the workplace. The literature covers everything from studying older employees and job performance to employees using technology in the workplace (Hayslip & Panek, 1993; Rhodes, 1983; Czaja & Sharit, 1993a, 1993b). A common theme seen here is that the literature focuses on older employees rather than their younger counterparts coming into the workforce. Literature also supports more negative beliefs directed towards employees as they become older. According to Elias, Smith, and Barney (2012), these beliefs that are directed towards 'older' employees are applied to employees just 40 years of age. However, in general, most research shows that employees change in some aspects but remain relatively stable in other aspects as they age. For example, one's physical capacity generally decreases as one ages, but his or her cognitive ability remains relatively stable over time (Schaie, 1990). Although, it is possible this may change

depending on the individual and his or her circumstances. Someone who continues to challenge himself or herself intellectually and maintains a workout routine may not see much decrease in either the physical or mental capacity unlike someone who may have health issues and cannot workout or does not try to stimulate himself or herself intellectually.

Even though the above research shows cognitive ability remains relatively stable, there is evidence that fluid intelligence, reaction time, and working memory show a negative relationship with age when performance improvements related to experience are taken into account (Warr, 1994). Older employees may also struggle more with processes such as dividing attention and processing complex information as compared to younger employees. However, most jobs do not involve maximal levels of performance, so many older employees can perform satisfactorily (Hayslip & Panek, 1993). In regards to training, this may mean that younger employees can be trained quicker and on topics that are more diverse.

There is conflicting evidence as to whether or not there is a relationship between age and job performance. Rhodes (1983) found no consistent relationship between age and work performance. Her review of the literature found evidence for a decline in performance, stability in performance, and an increase in performance. On the other hand, Waldman and Avolio (1986) found that the literature did not support a decline in performance, but the age-performance relationship varied with the type of performance measure (e.g., objective or subjective).

Other research suggests that organizations make assumptions that younger employees have higher energy, motivation, innovation, physical attractiveness, and health while older employees are viewed as less motivated, imaginative, interested in work,

adaptable, and trainable. In 1993, Warr and Pennington determined that employees 40 years of age and older typically are thought of as being less willing to accept new technologies, less willing to adapt to changes at work, less receptive to training, and less able to comprehend new ideas. Tillsley (1990) stated that older employees are frequently thought of as being in possession of outdated skills and lacking in motivation. However, other data show that, in fact, older employees are often more hard-working, committed to organizations, satisfied with jobs, and have lower absenteeism than their younger counterparts (Stone & Tetrick, 2013). Kooij, De Lange, Jansen, Kanfer, and Dikkers (2011) also found that as employees age, they do not seem to be less motivated, but their motives shift. Growth work motives decrease as one ages while security and intrinsic work motives increase as one ages. Another way to view this is that maintenance motives are valued more in older employees while development motives are valued less. Bertolino, Truxillo, and Fraccaroli (2011) supported this as well in their study where younger employees were found to have a more proactive personality when it came to training behavioral intentions than older employees. This suggests older employees are still proactive and motivated but by factors other than training such as security.

Due to this data and data that shows there are not enough younger employees to fill all of the positions of the older, retiring employees, Stone and Tetrick (2013) suggest that organizations should be trying to retain older workers instead of bringing in younger employees. One exception to this data occurred in an experiment where older employees demonstrated some of the negative assumptions previously mentioned that were made about them, but only because they were not given access to training unlike the younger employees (Grima, 2011). Armstrong-Stassen and Ursel (2009) found that a supportive work climate and improvements in training and development programs for older workers

may help organizations retain these workers. Older employees may also postpone retirement if they are offered flexible work arrangements such as working part-time or shorter workweeks (Morrisette, Schellenberg, & Silver, 2004; Bal, De Jong, Jansen, & Bakker, 2012). However, employees can only postpone retirement so long. Eventually, younger employees will need to be hired and trained to fill the enormous amount of positions the current 'baby boomers' hold.

In regards to training in the workplace specifically, Warr and Fay (2001) found older employees to be less willing than younger employees to participate in continuing education when initiated by the employees themselves. Van Vianen, Dalhoeven, and de Pater (2011) investigated if this held true when the organization requested or initiated an opportunity to learn. The results stayed consistent with the finding that older employees were simply less willing to invest time into learning and training. These results may relate back to the notion that older employees are not as proactive or motivated when it comes to training as their younger counterparts.

Training can be done from anywhere between a matter of minutes to a matter of months depending on the training topic, the training method(s) used, and how many people are being trained at one time among various other characteristics. When thinking about the training methods used, some training methods such as on-the-job training may be completed more quickly than other methods such as simulations. On-the-job training can take less time when one can learn in the same environment as his or her job and in a more hands on fashion. Simulations may have multiple levels of learning and may not be closely representative of the actual working environment, so employees almost have to relearn their job when they get in the actual environment. However, these methods may again differ based on the other characteristics of the training (i.e., training topic, how

many people are trained). Older employees may prefer certain types of training methods simply based on how much time they take to complete.

There are many possible reasons as to why older employees are reluctant to gain additional knowledge in the workplace. One reason relates back to the previous topic of the training method used and how long it may take to complete. Older employees may not want to be trained if it will take a significant amount of time, especially if they already have some previous knowledge of the topic. Also, if the training is mandatory and they feel it is simply a “waste of time,” then their reluctance may increase.

Another potential reason for why older employees are reluctant could relate to the changes seen with technology. Projections indicate that more than 35 million workers will be affected by technological change (Bracker & Pearson, 1986). Many organizations are incorporating technology into their everyday procedures including training. Younger employees had the privilege of growing up with drastic advances in technology as the current older employees did not. These older employees suffer from a learning gap with technology in general. Thus, it is more difficult for them to learn how to use the technology itself and be able to use the technology to complete tasks for the organization. The notion that older employees are likely to have less technological experience than younger employees is supported by the finding that when compared to younger employees, a significantly smaller proportion of employees 45 years of age and older utilized computer technology (Bué & Gollac, 1988 as cited in Marquié, Thon, & Baracat, 1994). Similar results were obtained by Lorence and Park (2006), who reported that in 2002, 58.1% of individuals over 50 years of age used computers on an occasional basis compared to 86.2% of individuals under the age of 50.

In regards to computers specifically, Gist, Rosen, and Schwoerer (1988) found older employees to perform significantly worse than younger employees in general. Consistent findings also show that older employees not only take longer to complete a task and make more errors than younger employees but they also find the tasks to be more difficult and stress inducing (Czaja & Sharit, 1993a, 1993b). With training in mind, older employees will probably be less likely to prefer training methods that involve any type of advanced technology (i.e., using computers, the Internet) even if their job requires some use of it. The technological gap may actually play a large role in preferential differences between ages regarding training methodologies even though technology has become very engrained in the current society. In general, older employees are much more reluctant than younger employees to use technology. However, as individuals who are born into the time where technological advances exist age, the technology gap may disappear and those who are reluctant to use technology will probably decrease significantly as well. Although this may take a couple of decades before this time is reached, it is still vital for organizations to understand how to maintain employee training through these changes.

Older employees are not the only ones reluctant in regards to training. Employers can be reluctant to train employees based on their age. Historically, older employees have been less likely to receive on-the-job training as compared to their younger counterparts (Sparrow & Davies, 1988; Eyster, Johnson & Toder, 2008). One reason this has occurred is that the costs of training older employees were too high. Older employees tend to be paid more for their job tenure, so to take them away from their work for on-the-job training discouraged employers from training them. Employers also expected older employees to leave the organization sooner than younger employees.



Spending the money to train them seemed to be a waste when the profit of their training would be short-lived (Rix, 1996; Tzafrir, 2005). Employers may also demonstrate the phenomenon known as 'ageism' (Butler, 1969). Ageism is a set of discriminatory attitudes and behaviors based on age and on attribution of a number of negative characteristics and stereotypes to older people. Due to these attitudes and behaviors, less investment is given to older employees again resulting in older employees having less access to training. However, age itself becomes an issue in organizations because there is no agreed upon age at which employees are considered too old to be invested in (Lazazzara, Karpinska, & Henkens, 2013). They found the age that marked the decline of training investment to be 50 years old with a sharp drop after 60. Human resources were more likely to train highly skilled older employees and older employees with low absenteeism rates (Lazazzara, et al., 2013). Despite what this previous research found, training is essential for organizations.

### **Training in the Workforce**

Training is an essential part of all jobs. It is used to invest in human capital, which leads to improvements throughout the organization at both the individual and collective levels. Some argue that training is the most efficient method to achieve the development of employees (Raelin, 1997). It allows organizations to run smoothly at all times even when employees quit and new ones take their positions. Training can be performed for many employees from brand new employees to those who have been with an organization for decades. It is used to teach new individuals how the organization runs and help them understand what they will do to help the organization run more efficiently. Training is also used to keep employees updated on new procedures or techniques as well as to teach employees how to run new equipment. Training can be

performed as often as an organization needs for as long as needed. Unfortunately, not all organizations have an effective training program set up. To begin understanding the importance of training in an organization, it will be helpful to understand some of the advantages and disadvantages of having an effective training program.

**Advantages of training.** By creating an effective training program, organizations can reap many benefits or advantages. One of the most important advantages training gives to an organization is that training can have a positive impact on performance. In fact, a lack of training can be the chief cause for poor performance (Clarke, 2003). Training may also lead to reduced employee turnover. New hires to an organization cannot be expected to come in and know how the organization works or how their job will fit into the organization. A new employee who tried to start his or her job without any training could cost the organization time and money if he or she makes many mistakes that others would have to “clean up” or that could interfere with others’ jobs. Training allows new employees the knowledge of how everything runs in an organization, so they do not have to worry as much about not knowing what to do or making mistakes because of this lack of knowledge. Not only does training increase employee knowledge of the organizational procedures, it can increase efficiencies in these procedures as well. With this knowledge, employees show higher self-efficacy, motivation, morality, and empowerment (Aguinis & Kraiger, 2009). This can lead to organizational performance being more effective and profitable. Other benefits to an organization may include employee satisfaction, customer satisfaction, owner/shareholder satisfaction, and workforce productivity (Aguinis & Kraiger, 2009).

Training not only is an advantage through employee performance, which in turn can benefit the organization, it can also provide high economic returns. If a customer

sees better training as a source of value-added to the organization, the customer may be prepared to pay more for an organization's services. For example, if a restaurant is known for having efficient service from training, a customer may be willing to give a bigger tip when they eat there versus a different restaurant that has slower services. Training does not just add to income temporarily, but the revenue obtained is rather sustainable over time (del Valle & Castillo, 2009). Returning to the restaurant example, as more and more people visit the restaurant with the efficient service, they will be more likely to come back again or tell others to try that restaurant. This restaurant not only could get more customers to come, but customer loyalty may increase as well, assuming all else is equal or better (e.g., food quality) than other restaurants with slower service. This restaurant has a clear advantage over other restaurants with poorer service. Training allows organizations to develop their human capital, which is an important means to gain a competitive advantage (Noe & Tews, 2012). The time it takes to train employees in an organization can have much longer lasting positive effects for the organization. With these advantages in mind, it is just as important to understand the disadvantages of training.

**Disadvantages of training.** Just as training may have advantages for an organization, it also holds a few disadvantages. There are three possible major disadvantages for organizations when training. First, training may be very costly (Tzafrir, 2005). In 2004, the average annual cost to train one employee increased to \$955 after staying steady at \$820 for the previous two years (Society for Human Resource Management, 2006). Cost of training depends on many variables including how long the training takes and how many people are involved in training an employee, and if there are multiple employees being trained or just one at a time. The longer the training takes, the

more likely the cost of training will be. To train an employee, there must be another employee, manager, etc. there to do the training. It costs the organization money when there are employee(s) training new employees rather than spending time doing their own jobs, simply because it can interfere with the efficiency or productivity of the trainer. Cost may also increase as the number of employees training increases. This relates back to the interference of efficiency or productivity for the employees who are training. If the number of employees training increases, there will be fewer employees actually doing their jobs and more interruptions in productivity. However, if there is only one person in charge of training new employees, there may be fewer interruptions in productivity, but the new employee may not receive as much information if the trainer has a limited knowledge of what to train new employees. In regards to specific training methods, Martin, Kolomitro, and Lam (2014) found simulations to be quite costly compared to the lower cost methods such as role play, case study, internship, job shadowing, and mentorship/apprenticeship. Methods such as games, lecture, programmed instruction, role-modeling, stimulus-based, and team have a moderate cost in comparison.

New employees are not the only employees that can be trained. Older employees can continue to learn new skills for as long as they are with the organization. However, as previously stated, organizations may be reluctant to train older employees since older employees are expected to leave the organization sooner than younger employees (Rix, 1996; Tzafrir, 2005). Training an older employee and then seeing that employee leave the organization soon afterwards can definitely discourage employers from training older employees since the money spent doing so did not help the organization in the long run. When considering cost of training employees, employers need to think about the effect training may have on the organization in the future. When considering the advantage that

training may have a positive effect on performance, employers may view training more as an investment rather than a cost.

The next major disadvantage for training in an organization is training can be time-consuming. As mentioned previously, one or more employees can train a new employee. This may or may not have an effect on how long it takes to train the employee. With one trainer, a new employee may get less information in which case the time may not take very long. In some cases, one trainer is sufficient and knows a lot of valuable information he or she can share. With more trainers, the new employee may get more information, so the time will increase for training. Employers must consider that training mainly occurs to share information with employees. However, information always changes and employees may need to be trained when they initially are hired and throughout their employment at the organization. Another factor in how time-consuming training can be is the training procedures that take place. One organization may take only a couple of days to train an employee while another organization may take a couple of weeks for training despite the number of trainers involved.

The method used to train employees can serve as the last disadvantage if it is not chosen carefully. This factor can also result in serious problems for an organization. Training can be performed in many ways. Employers may use online training, hands on training, job shadowing, and lectures to name a few. It is critical to choose the most effective method for training employees for them to stay engaged. Choosing the best training method can depend on many factors such as the training topic or individual preferences for learning. For example, online training may seem too depersonalized to some individuals, while others may not mind (Griffin, 2011). On the other hand, an employer may have an incumbent present a lecture. In this case, it is crucial that the

incumbent knows what topic he or she is training over or else employees may receive inaccurate information. If employees become disconnected because the training is too depersonalized or receive the wrong information, bigger problems may arise for the organization. These problems may include productivity loss, increase in mistakes made, and increase in cost to fix mistakes. It is also possible that the trainees may show less (or no) commitment to training based on the method of training used. Not being able to secure reciprocal commitment from the trainees can be a clear cost for an organization assuming the trainee does not benefit from the training due to his or her lack of commitment (Tzafir, 2005). Organizations need to be aware how their employees are being trained and if that method is the optimal one. It is essential to calculate the benefits and costs it takes to have an efficient training program, in order to design an optimal level of training for employees.

As shown above, there are many advantages and disadvantages to creating and carrying out a training program. It is possible that training may be costly and time-consuming, but the development of human capital toward an organization's success is worth it. However, one of the most important factors to think about when creating a training program is the training method(s) used. This decision is critical to the success of the training program. Many factors such as the cost and time to complete each training method as well as the potential amount of human capital gained by using various training methods needs to be considered when deciding which training method(s) is optimal for an organization's employees.

## **Different Training Methods**

Martin, Kolomiro, and Lam (2014) reviewed training methods literature and found there to be 13 types of training methods reported. These methods include case study, games-based training, internship, job rotation, job shadowing, lecture, mentoring and apprenticeship, programmed instruction, role-modeling, role play, simulation, stimulus-based training, and team-training with the majority of the methods not being interactive with employees. Fortunately, technological advancements have expanded these methods and the delivery distances for employees trained far away. As described previously, technology can be used in ways other than expanding the delivery distance of training to help make training more efficient, but there are many employees still reluctant to use this technology. This is why some researchers are studying technology acceptance. Key variables in various technology acceptance models include perceptions, attitudes toward use, and intention to use a new technology. Within this literature, training has not been widely studied, because training is posited to be fully mediated by perceptions and attitudes toward features of the technology itself (Davis, 1989; Venkatesh, Morris, Davis, & Davis, 2003). Agarwal and Prasad (1999) support this statement in their study examining adopters and non-adopters of a new PC operating system where they found the relationship between whether employees participated in training and their intentions to use the operating software was fully mediated by perceptions and attitudes toward the software.

Marler, Liang, and Dulebohn (2006) also found that the extent and quality of technology training was directly and positively related to intentions to practice using the new technology and the relationship between the extent of training and intention to use technology training was fully mediated by beliefs about employee resources. These

resources may include perceptions as to whether there will be enough time to practice learning the software before mandatory use, supervisor support in the learning process, and whether there is documentation and expert help. The employee's work environment must also support or reinforce what was learned in the training session to transfer what was learned. Using some of these results and an organization's resources may allow for older employees, reluctant to use technology, to become more comfortable with having technology incorporated in the training program itself and in their job as a whole. However, if an organization does not have adequate resources, a technology-advanced training program may not be very effective and other training methods should be used. To understand the relationship between training and age better, the minimal literature between the two is described below.

### **Training and Age**

While the majority of research focuses on either aging employees in the workplace or training in the workplace, there is some research on the combination of the two. Thinking back to the notion that generally younger employees are inexperienced as compared to older employees, differently aged employees may need to be trained on different topics. For example, younger, newer employees will need to learn more basic skills and rules of their profession while older, experienced employees would need to learn more unique, advanced skills that help increase their productivity. Thus, McNamara, Parry, Lee, and Pitt-Catsouphes (2012) suggest organizations need to create completely different training programs for these different skill sets altogether. Training on different levels and different topics could mean that completely different training methodologies need to be used for optimal training. Armstrong-Stassen and Templer (2005) agree that training methodologies need to be adapted for older employees such



that employers focus on more hands-on learning and less lecturing-based training methods. Callahan, Kiker, and Cross (2003) believe older employees may benefit more if multiple training methods are used instead of just one. They examined three training methods (i.e., lecturing, modeling, and active participation) with older employees and found, despite some previous contradicting literature, that all three methods showed significant results in learning. Sparrow and Davies (1988) found that despite the training method, training does improve performance no matter what the age of the employee.

Lee, McNamara, Pitt-Catsouphes, and Lee (2014) believe older workers simply place less emphasis on receiving training. Super (1990) developed different stages in which an individual grows or develops in regards to their work. There are five stages: growth, in which the person develops preliminary abilities and interests (up to age 18); exploration, in which the person begins to make choices about occupational preferences (ages 15–35); establishment, in which the person attempts to achieve success in their chosen career (ages 30–45); maintenance, in which the person seeks to fulfill their potential or maintain their current level within their career (ages 40–64); and disengagement, during which the person reduces or ends their work role (65 or older). Workers in the maintenance stage and, to a lesser extent, the establishment stage might value training less than those in the growth, exploration or establishment stages.

However, Lee et al. (2014) believe due to Erikson's (1950) formulation of generativity (i.e., the processes through which people guide and help the next generation) focused on the middle-age, that those employees would place a higher value on providing opportunities to teach or train as opposed to being trained. Surprisingly, Lee et al. (2014) found that the positive effect of opportunities to teach or train others on job satisfaction was actually weaker among older employees compared to younger employees. As

employees aged, they continually moved into disengagement altogether from the organization. Unfortunately, these studies focus much more on older employees and do not report on younger employees.

### **Training and Job Tenure**

As mentioned previously, training may differ by how young or old an individual is and by how experienced one is. This leads to the idea that an employer may not just want to focus on the age of the employees to determine training methods used, but they need to determine how experienced employees are as well. Thus, an employee's tenure may help decide which training method is better based on if the employee needs to be trained on more basic, rudimentary skills in the profession or if they need to be trained on advanced, unique skills to improve their productivity.

Sparrow and Davies (1988) focused mainly on the effects of age on technical performance but found that while there was a significant main effect of age and a significant interaction effect between age and training on performance, age only accounted for a small proportion of the variance. They also found significant main effects for tenure, training level, and job complexity on speed of performance as well (Sparrow & Davies, 1988). From these results, one may wonder how much of a part tenure may play on performance as opposed to age alone or how these variables may interact in other settings. Tenure may play a larger part in performance if the employees had options for training methods which they did not in this study. In another study, tenure was found to play a role in turnover and intentions to turnover unlike personal and organizational variables (Mitchel, 1981). Thus, tenure may be an underlying factor that is often overlooked in many organizational processes.

In relation to training specifically, Schmidt (2009) looked at various employee demographics compared to job training satisfaction and found there to be no significant differences in job training satisfaction when different age groups were incorporated. However, Schmidt (2009) did find there to be a difference with job training satisfaction when examined with job type, job status, and job tenure. He explained that new employees start in a 'honeymoon period' where they are happy with everything simply because they are starting a new job. These new employees can be of any age and still go through the 'honeymoon period.' In relation to training, employees in this phase completed much more training in the first year compared to those who had been in the organization longer. The new employees were still more satisfied with the training. On the other hand, veteran employees see a decrease in job training satisfaction as the focus of training continues to stay with new employees. As mentioned, there was a significant difference with job training satisfaction and job tenure (Schmidt, 2009). To differentiate between age and tenure, the present study will look at this variable as well to make sure if differences for preferences of training methodologies are found, they are due to age and not tenure. While this study focused more on employees of all ages, up until this point, research has not filled the gap of studying younger employees in regards to training.

In summary, training can be very beneficial in an organization. Much of the research currently focuses on either aging employees in the workplace, training in the workplace, or older employees and training. There is a need for research to shift the focus to younger employees and see if they train as effectively using certain training methods or if organizations need to reconsider how they train these younger employees. This brings us to the current study, which will be a starting point to see if younger employees have differing preferences of training methodologies.

## **The Present Study**

Considering the current time period and the external factors (i.e., baby boomers retiring, larger groups of young professionals taking the places of those retiring, the history of the advancement of technology for the younger applicants as opposed to older employees), which have created great change, organizations need to take this time to reevaluate their efficiency, specifically in regards to training their employees. With the large potential for employee change, organizations need to stay competitive by updating training procedures to help employees learn more efficiently. Before updating their training procedures, employers need to know how those procedures should be updated. The lack of research does not help employers determine what changes, if any, need to be made due to the shift in age groups of employees. Thus, the current study predicts the following:

**Hypothesis 1.** The preferences for use of particular training methods will differ in that younger employees will prefer training methods involving technology more so than older employees will.

As previously mentioned, the technology gap may be one of many reasons employees are less willing to invest time into training. Past research shows older employees struggle significantly more than their younger counterparts when completing tasks involving technology (Czaja & Sharit, 1993a, 1993b; Gist et al., 1988). The drastic advances in technology may seem overwhelming to one who did not grow up during these advancements. Nevertheless, technology is becoming more prevalent in one's everyday life, personal or work (Bracker & Pearson, 1986). Thus, younger employees are more open to, and prefer, training methods that involve technology unlike older employees, so

there should be a pattern showing those older in age are less likely to prefer technological training methods.

Research also shows that older employees seem to be less willing compared to their younger counterparts to participate in any type of training (Van Vianen et al., 2011; Warr & Fay, 2001). Based on this research, the second prediction is as follows:

**Hypothesis 2.** Older employees will be less willing to invest their time into any type of training compared to younger employees.

Older employees may be less motivated to train or place their motivation in other areas of their work. They also may simply place less emphasis on themselves being trained compared to them training others and passing on their knowledge (Lee et al., 2014). Despite the reasoning behind employee willingness to invest time into training, research shows older employees simply are not as willing to invest their time into training as younger employees are (Van Vianen et al., 2011; Warr & Fay, 2001). This study will advance the literature by determining if an employee's age moderates his or her willingness to participate in training at all.

While most research focused on employee's age and employee willingness to train, job tenure may also affect employee willingness to train.

**Hypothesis 3.** Employees with more job tenure will be less willing to invest their time into any type of training compared to those with less job tenure.

Older employees were found to place less emphasis on training and actually be more disengaged completely from the organization compared to younger employees (Lee et al., 2014). However, those who have been in a job for many years and have much longer job tenure may show the same signs if they feel they are competent in what they do and do not need to learn anything else for their job. Tenure has also been found to work as an

underlying factor in other organizational processes such as job performance and turnover, thus the two variables will be investigated separately (Mitchel, 1981; Sparrow & Davies, 1988). Many studies do not differentiate between job tenure and age when addressing young or old employees. To differentiate between age and job tenure, those with more job tenure are expected to be less willing to invest their time into any type of training.

**Research Question 1.** Is tenure a better or worse predictor of training preferences than age?

Previous literature gives multiple suggestions as to what type of training methodology should be used for older employees. Armstrong-Stassen and Templer (2005) suggest that training methodologies need to be adapted for older employees. However, Callahan, Kiker, and Cross (2003) suggest multiple training methods should be used for older employees. Due to this literature, organizations may base their training methodologies on employee age. However, other research suggests different training programs should be created for different skill sets (McNamara et al., 2012). This last study implies that tenure may be the factor an organization should base their training methodologies on. It is possible that an older employee joins an organization and is new to the type of work the organization performs. Thus, this employee will need to be trained on basic, rudimentary skills possibly compared to another employee who is the same age but has been with the organization for years and needs trained on more advanced skill sets. Based on this, tenure may be a better predictor than age. Due to the contradicting research, the present study would like to determine which of the two, age or tenure, is a better predictor of training preferences.

## CHAPTER 2

### METHOD

Past studies have investigated different aspects of age in the workplace as well as training in the workplace, but there is still a large gap in combining both age and training in the workplace as well as differentiating between age and job tenure. The current study was needed to reduce this gap in the literature. The purpose of the current study was to determine if there is a relationship between aging and employees' preferences for training methodology. In conducting this study, the goal was to apply the results to organizations to see if they need to restructure their training programs to fit younger employee preferences now that a large section of the workforce is retiring.

#### **Participants**

A newly created survey by the author called the *Employee Training Scale* (ETS) was distributed to employees working in two anonymous manufacturing companies in a Midwestern town. From these two companies, 67 total responses were collected via SurveyMonkey.com. The survey was also posted on the social media hub, Facebook, using SurveyMonkey.com. I collected 48 responses from random individuals who completed the survey via SurveyMonkey.com from the Facebook link. Surveys measured employee training preferences (see Appendix A) and employee willingness (see Appendix B). Demographics (see Appendix C) also were collected. These include: full-time employment, fluency in English, position type, education level, age, tenure, ethnicity, and gender. The only required criteria for participants to complete this study were that they must be employed with a full-time job and speak and read English fluently.

Of the 115 total participants, six participants did not complete the entire survey and thus, were left out of the results due to missing information. Due to the missing data, some of the following percentages do not add up to equal 100%. From the 109 remaining data sets, 53% of respondents were female and 41.7% were male. Eighty-seven percent of participants identified as Caucasian or white while 0.9% were African American or black, 4.3% were Hispanic or Latino, 1.7% were Native American or American Indian, and 0.9% identified as “Other” with no specification. Participants also ranged in education from having some high school education, but no diploma, to having a doctorate. The largest percentage of the participants fell in the category of having a Bachelor’s degree with 30.4%, 25.2% had some college credit, but no degree, and 20.9% had a Master’s degree. Ages ranged from 22-85 with 39.1% being younger than 41 and 52.2% being 41 or older. Participants’ job tenure ranged from less than 1 year to 46 years; 33.9% of participants held tenure of less than 5 years while 55.7% held tenure of 5 years or more. Lastly, position type for participants fell in the following four categories: top management, middle management, entry-level management, and non-management. The following are the percentages of participants in each category, respectively: 10.4%, 35.7%, 16.5%, and 28.7%.

## **Measures**

**Employee training scale (ETS).** As mentioned, participants were given a one-time, 28 question, self-report survey called the *Employee Training Scale* to complete. Currently, there is no measure in previous literature that studies employee training preferences or employee willingness to train, so this new scale was created by me. Thus, the survey is comprised of two subscales measuring 1) employee training preferences and 2) employee willingness. Each of the two subscales are comprised of 14 questions; the



first 13 questions are based on the work of Martin et al. (2014) while the last question of each subscale was created by the author to further study technology and training. The survey was distributed to the employees in the two anonymous manufacturing companies via a link using SurveyMonkey.com and was also posted on the social media hub, Facebook, using SurveyMonkey.com. A survey was used due to the feasibility and convenience of this method. Time restrictions prevented the use of an experimental method. No names were collected in the ETS to ensure anonymity and confidentiality. As stated previously, the ETS targeted areas such as employee training preferences (see Appendix A) and employee willingness (see Appendix B).

Employee training preferences were measured with 14 items. As mentioned previously, 13 items were created based on previous literature (Martin et al., 2014). These 13 items incorporate the 13 different training methods found by Martin et al. (2014). Definitions of the 13 training methods were given as well (Martin et al., 2014). The last item focused more on technology and training as will be described later. Each item was measured on a 5-point scale ranging from strongly do not prefer (1) to strongly prefer (5). A sample item was, “Rate your preference for being trained using a lecture-based method.” The last item, created by the author, used the same scale as the previous 13 items but focused on differences in preferences of training methods incorporating technology as other technology research may suggest (Czaja & Sharit, 1993a, 1993b; Gist et al., 1988). This item reads as follows, “If choosing a training method in general, please rate your preference for one that incorporates technology as opposed to no technology.” Reliabilities for preference for the training methods ranged from 0.07 – 0.84.

Employee willingness was measured with 14 items. The first 13 items were created based on previous literature similar to the other subscale (Martin et al., 2014). Like the previous subscale, these 13 items also incorporated the 13 different training methods found by Martin et al. (2014). Again, definitions of the 13 training methods were provided (Martin et al., 2014). The last item, created by the author, focuses more on technology and training as will be described later. Each item was measured on a 5-point scale ranging from very unwilling (1) to very willing (5). A sample item was, “Rate your willingness for being trained using a lecture-based method.” As mentioned, the last item referred to technology, but asked about willingness as opposed to preference. The item is not only a reflection of the technology literature but the employee willingness to train literature as well (Czaja & Sharit, 1993a, 1993b; Gist et al., 1988; Van Vianen et al., 2011; Warr & Fay, 2001). This item was as follows, “If given a training method in general, please rate your willingness to participate in one that incorporates technology as opposed to no technology.” Reliabilities for willingness for the training methods ranged from 0.07 – 0.82.

**Demographics.** A few demographic questions were also asked of participants (see Appendix C). The following demographics were measured with eight items, one item per demographic: full-time employment, fluency in English, position type, education level, age, tenure, ethnicity, and gender. A sample item was, “Please list your age.” Due to previous research, tenure and age were both measured as separate variables to determine if either or both affect employee training preferences or willingness to train (Schmidt, 2009). The other demographic variables were incorporated for exploratory reasons.

## **Procedure and Analysis**

Before the study could begin, the appropriate information was sent to the Institutional Review Board (see Appendix D). The Institutional Review Board determined whether changes needed to be made before the study may commence. Once approval was received, the study began.

Since the *Employee Training Scale* was new and has not been used before, the first step of the study was to ensure proper reliability and validity. To do so, two steps were taken. First, subject matter experts (SME) analyzed the survey before presenting it to the sample population. The SME in this study were two university professors, each in the field of Industrial and Organizational Psychology.

**Pilot study.** Once the ETS was analyzed by the SMEs, a pilot study was also conducted beforehand. For the pilot study, the ETS was distributed in person and electronically to a group of employees at a university in a Midwestern town. I printed out surveys and consent forms (see Appendix E) and took them to the university for half of the employees to fill out and hand back to me before I left. I also sent a link of the electronic version of the survey to the other half of the employees to complete at the same time as the other participants. To determine that employee preference and willingness for certain training methodologies stayed consistent using test-retest reliability, I distributed the surveys and consent forms at two separate times to the same employees. To complete this, names of the participants were collected for the pilot study only. Data was entered into SPSS and analyzed. No changes needed to be made to the survey before moving on to the next step. Both of these procedures ensured a valid, reliable measure.

**Primary study.** Following the analysis of the survey by subject matter experts and the pilot study, data was collected. To collect data, the first step was to contact

representatives from two participating manufacturing companies in the Midwestern town. Then, I sent a link via SurveyMonkey.com to access the electronic version of the ETS and the consent form to each representative. In using SurveyMonkey.com to distribute the electronic version of the ETS to participants, I imported the ETS questions into the website SurveyMonkey.com by copying and pasting. The consent form on the electronic version was worded the same as the paper version, but participants clicked a button to continue to the survey as their way to consent instead of signing their name, to keep participants anonymous. The links were shared via the company representatives to other employees in the companies. Once the participating employees completed the consent forms and ETS, the representatives from each company contacted me via email and the link to the electronic version of the survey was closed. Thus, no one else could access the survey after that time frame. I kept the links to both companies open for two weeks for the company representatives to collect as many participants as possible. After the links were closed, I began data analysis.

Another form of collecting data was through a social media outlet. Once the survey was completed in SurveyMonkey.com, I posted the link to complete the survey through her Facebook account. Data was collected from various individuals that opened the link and completed the survey. As mentioned, I had no control over who filled out the ETS through SurveyMonkey.com from the Facebook link, but I collected 48 responses. I kept the survey open on the website for one month. Once the month passed, data was compiled with that from the manufacturing companies.

Data analysis was completed using SPSS. I manually typed in all of the existing information collected from SurveyMonkey.com. Before running any tests, I created groups for the following two variables: age and tenure. Based on data from the Bureau of

Labor Statistics (2015), the average age of employees in the United States was approximately 41 years old in 2015. This average has only changed by one year in the past 10 years, so the current average age of employees should not be far from 41 years old. Thus, age was divided into two groups. The younger group consisted of employees under the age of 41 while the older employees were considered 41 years or older. A similar process was used to divide tenure into groups. Data from the Bureau of Labor Statistics (2016) showed the average tenure for employees in the United States in 2016 to be approximately 5 years. Thus, tenure was divided into two groups: under 5 years of experience and 5 years or more of experience. These groups were created to help in some of the analysis process.

The first item I examined was reliability by determining the coefficient alphas for both preferences for all training methods and willingness for all training methods. Once this was completed, the tests performed on the data differed for each hypothesis/research question. For Hypothesis 1, an independent samples t-test was conducted with the different age groups serving as the independent variable and the last question from the preference section, which referred to preference for technology, serving as the dependent variable. For exploratory reasons, bivariate correlations were conducted to determine if different findings would be found.

To test for Hypothesis 2, separate independent samples t-tests were run with age groups again serving as the independent variable and each of the 13 training methods, excluding the question about technology, from the willingness scale serving as the dependent variables. Again, bivariate correlations were also conducted between age and all of the 13 training methods to see if the results differed based on how age was changed to a dichotomous variable or if it were left alone. Hypothesis 3 used the same tests as

Hypothesis 2 but used job tenure groups as the independent variable instead of age groups. For this hypothesis, the bivariate correlations were again conducted but now using tenure instead of age.

Lastly, the research question was tested by conducting bivariate correlations between preference for training methods and age as well as preferences for training methods and tenure to determine which correlated more with preferences for training methods. In order to do this, I determined the average of all the training method preferences for each individual participant. This average for each participant was considered each individual's overall preference towards training methods. Following these analyses, exploratory analyses were conducted using other pieces of the data (i.e. ethnicity, gender, school level, etc.).

Any surveys with errors or missing data were eliminated from the analysis. Data collected from SurveyMonkey.com was secured on the website using my account which was password protected. Once the data was imported into SPSS, the file was saved on my computer which was password protected as well.

## CHAPTER 3

### RESULTS

#### **Pilot Study**

To conduct the pilot study, the ETS was first analyzed by SMEs. Next, the ETS was distributed in person and electronically to a group of employees at a university in a Midwestern town. Half of the employees filled out the paper version of the survey and the other half filled out the electronic version. The same employees filled out the ETS at two different times, two weeks apart. Doing so allowed for test-retest reliability to be determined on each question since each question on the survey essentially measured a different construct. Again, the questions measured preference or willingness to 13 different training methods with two questions measuring preference or willingness to train with technology.

Test-retest reliability was determined for each type of training based on one's preference or willingness for the training. Correlation coefficients ranged from 0.07 – 0.84. The type of training with the highest test-retest reliability for participants' preference was role play while the lowest coefficient for preference was internship. When it came to participants' willingness for training, the highest alpha was found with games-based training and the lowest coefficient was for mentor and apprenticeship training. The small number of participants used in the pilot study may explain the extreme variations in the reliability coefficients. Table 1 summarizes the data collected from the pilot study.

#### **Primary Study**

Before any tests were conducted related to the hypotheses or research question, the correlation coefficients were determined for preferences for training methods and

willingness for training methods. Reliability for preferences for the 14 training methods was  $\alpha = 0.76$  while the coefficient alpha for willingness for the same training methods was  $\alpha = 0.81$ . Thus, reliability among the 14 questions related to training methods was adequate enough to continue.

Results from the present study were mixed. According to past literature, older employees struggle significantly more than their younger counterparts when completing tasks involving technology. Thus I first hypothesized that the preferences for use of particular training methods would differ in that younger employees would prefer training methods involving technology more so than older employees would (Czaja & Sharit, 1993a, 1993b; Gist et al., 1988). To test this hypothesis, an independent samples t-test was conducted and concluded this was not the case; the sixty older employees ages 41 and older ( $M = 4.12$ ,  $SD = 0.74$ ) averaged a statistically significant higher rating of preference for using technology in training compared to the 45 younger employees less than 41 years old ( $M = 3.69$ ,  $SD = 0.95$ );  $t(103) = -2.6$ ,  $p = 0.01$ . Bivariate correlations were conducted along with the independent samples t-test to determine if different results were found. Similarly, a positive correlation of  $r = 0.18$  was found between age and technology suggesting that older employees preferred using technology more than younger employees did. However, this finding was not at a statistically significant level as found with the independent samples t-test. Thus, Hypothesis 1 was not supported.

Hypothesis 2 stated that older employees would be less willing to invest their time into any type of training compared to younger employees. This hypothesis was based on the previous literature supporting the claim that older employees were simply less willing



Table 1

*Summary of Means and Standard Deviations of Employee Training Scale by Preference and Willingness Variables*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>r</i>
Preference				
Case study	11	4.09	0.70	0.59
G-B training	11	3.32	0.79	0.16
Internship	11	4.60	0.51	0.07
Job rotation	11	3.18	1.31	0.65*
Job shadow	11	3.69	1.25	0.82**
Lecture	11	2.82	1.16	0.28
M & A	11	4.36	0.65	0.40
Program inst.	11	1.87	0.77	0.52
Role model	11	3.32	0.79	0.49
Role play	11	3.23	1.20	0.84**
Simulation	11	3.05	1.02	0.57
S-B training	11	3.18	0.90	0.63*
Team training	11	3.55	0.87	0.64*
Technology	11	3.50	1.15	0.52

Table 1 (continued)

*Summary of Means and Standard Deviations of Employee Training Scale by Preference and Willingness Variables*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>r</i>
Willingness				
Case study	11	4.55	0.61	0.48
G-B training	11	3.68	1.02	0.82**
Internship	11	4.78	0.40	0.42
Job rotation	11	3.41	1.06	0.75**
Job shadow	11	4.23	0.94	0.28
Lecture	11	3.28	1.11	0.32
M & A	11	4.41	0.51	0.07
Program inst.	11	2.55	1.14	0.49
Role model	11	3.46	0.91	0.39
Role play	11	3.45	1.37	0.79**
Simulation	11	2.91	0.82	0.60
S-B training	11	3.41	0.81	0.48
Team training	11	3.78	0.93	0.66*
Technology	11	3.96	0.79	0.52

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

\* $p < .05$

\*\* $p < .01$

compared to younger employees to participate in any type of training (Van Vianen et al., 2011; Warr & Fay, 2001). For this hypothesis, I performed separate independent samples t-tests using the two age groups as the independent variable and each of the first 13 questions (i.e., training methods) as the dependent variables. These analyses show very little support for Hypothesis 2. For two training methods, older employees were less willing to invest their time to participate but not at a significant level. In case study training, the younger employees ( $M = 3.82, SD = 0.72$ ) were more willing than older employees ( $M = 3.67, SD = 0.95$ ) to participate in this type of training;  $t(102.99) = 0.96, p = 0.34$ . The other training method where younger employees ( $M = 2.98, SD = 1.19$ ) were more willing than older employees ( $M = 2.88, SD = 1.17$ ) to train was the role play training;  $t(102) = 0.40, p = 0.69$ . The only statistically significant finding showed younger employees ( $M = 2.84, SD = 1.13$ ) were less willing to be trained using programmed instruction compared to older employees ( $M = 3.33, SD = 0.95$ );  $t(103) = -2.41, p = 0.02$ . Otherwise, older employees were more willing to be trained using all of the other methods but again this was not at a statistically significant level.

To answer the same question yet determine if by dividing the age variable into two groups altered the results, a bivariate correlation was conducted as well. When correlating age with each of the training methods, a little different and interesting results were found. For about half of the training methods, negative correlations were found indicating that younger employees were more willing to be trained in those, which provides more support for the hypothesis. The training methods in which younger employees were more willing to participate included case study, games-based training, internship, role play, simulation, and stimulus-based training. The only statistically

significant result again showed younger employees to be less willing to be trained using programmed instruction;  $r = 0.19$ . Tables 2, 3, and 4 summarize these results.

Even though previous literature examines age and training, many studies do not differentiate between job tenure and age when addressing young or old employees. The literature has found that older employees place less emphasis on training and can be more disengaged completely from the organization compared to younger employees (Lee et al., 2014). I wanted to test if this was true for employees who have a longer job tenure and may feel competent in what they do, thus feeling no need to learn anything else for their job. This led me to hypothesize that employees with more job tenure would be less willing to invest their time into any type of training compared to those with less job tenure.

For this hypothesis, I performed separate independent samples t-tests using the two tenure groups (those under 5 years of tenure as one group and those with 5 years or more tenure in another group) as the independent variable and each of the first 13 questions (i.e., training methods) as the dependent variables. This hypothesis received little support. Employees with a job tenure of 5 years or greater actually were more willing to take part in all but three training methods. However, all but one of these findings were not at a statistically significant level. The one statistically significant difference found was with the programmed instruction training method in which employees with more job tenure ( $M = 3.33$ ,  $SD = 0.94$ ) were significantly more willing than those with less job tenure ( $M = 2.82$ ,  $SD = 1.17$ ) to participate in;  $t(101) = -2.42$ ,  $p = 0.02$ . The three training methods in which employees with less job tenure were more willing to participate in were case study, games-based training, and simulation. These three differences were also not significantly different.

Table 2

*Summary of Group Statistics of Willingness to Train Using Different Methodologies  
Based on Age in Independent Samples t-Test*

	<i>N</i>	<i>M</i>	<i>SD</i>
Willingness			
Case study			
Younger	45	3.82	0.72
Older	60	3.67	0.95
G-B training			
Younger	45	3.80	0.89
Older	60	3.83	1.02
Internship			
Younger	45	3.93	1.18
Older	60	4.03	1.03
Job rotation			
Younger	45	3.93	0.98
Older	60	4.07	0.88
Job shadow			
Younger	45	4.04	0.85
Older	60	4.12	0.85

Table 2 (continued)

*Summary of Group Statistics of Willingness to Train Using Different Methodologies  
Based on Age in Independent Samples t-Test*

	<i>N</i>	<i>M</i>	<i>SD</i>
Lecture			
Younger	45	2.96	1.13
Older	60	3.13	0.97
M & A			
Younger	45	4.18	0.61
Older	60	4.32	0.62
Program inst.			
Younger	45	2.84	1.13
Older	60	3.33	0.95
Role model			
Younger	45	3.29	0.92
Older	60	3.40	1.05
Role play			
Younger	44	2.98	1.19
Older	60	2.88	1.17
Simulation			
Younger	45	3.44	0.84
Older	60	3.48	1.00

Table 2 (continued)

*Summary of Group Statistics of Willingness to Train Using Different Methodologies  
Based on Age in Independent Samples t-Test*

	<i>N</i>	<i>M</i>	<i>SD</i>
S-B training			
Younger	45	3.13	0.92
Older	60	3.15	1.18
Team training			
Younger	45	3.69	1.16
Older	60	3.82	1.05

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

Table 3

*Summary of Willingness to Train Using Different Methodologies Based on Age in Independent Samples t-Test*

	<i>t</i>	<i>df</i>	<i>p</i>
Willingness			
Case study	0.96	102.99	0.34
G-B training	-0.17	103	0.86
Internship	-0.47	103	0.64
Job rotation	-0.61	103	0.54
Job shadow	-0.43	103	0.67
Lecture	-0.87	103	0.39
M & A	-1.14	103	0.26
Program inst.	-2.41	103	0.02*
Role model	-0.57	103	0.57
Role play	0.40	102	0.69
Simulation	-0.21	103	0.83
S-B training	-0.08	102.80	0.94
Team training	-0.59	103	0.56

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training. Case study and Stimulus-based training failed Levene's Test for Equality of Variances.

\* $p < .05$



Table 4

*Participant Willingness Based on Age Correlation*

<i>Willingness</i>	<i>Age r</i>
Case study	-0.16
G-B training	-0.08
Internship	-0.06
Job rotation	0.02
Job shadow	0.04
Lecture	0.03
M & A	0.09
Program inst.	0.19*
Role model	0.04
Role play	-0.01
Simulation	-0.08
S-B training	-0.07
Team training	0.10

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

\* $p < .05$

Again, a bivariate correlation was conducted to determine if dividing the tenure variable into two groups altered the results. When correlating tenure with each of the training methods, different and interesting results were found. The majority of the training methods resulted in negative correlations, indicating that employees with less tenure were more willing to be trained in almost all methods compared to older employees. The training methods in which employees with less tenure were more willing to participate in included case study, games-based training, internship, job rotation, lecture, role play, simulation, stimulus-based training, and team training. Employees with less tenure were significantly more willing to train using case study and games-based training. The correlations found for these two types of training were  $r = -0.26$  and  $r = -0.22$ , respectively. Older employees were not found to be significantly more willing to participate in any training as found using the independent samples t-test. Using the correlation results, more support would be given for the hypothesis even though most results were not statistically significant. Tables 5, 6, and 7 summarize these results.

The research question focused on determining if tenure or age was a better predictor of training preferences. There is not much previous literature that differentiates between age and tenure. Some literature suggests training methodologies need to be adapted for older employees or multiple training methodologies should be used for older employees (Armstrong-Stassen & Templer, 2005; Callahan, Kiker, & Cross, 2003). However, this research focuses only on age as a factor in how to train employees. Other research suggests organizations should base training methodologies on skill sets which one would acquire with experience or longer tenure (McNamara et al., 2012). Again, the main factor here was tenure. The gap in this literature led me to differentiate between

these two variables to see if they correlate differently with preferences for training methodologies.

For the research question, bivariate correlations were conducted to determine which, age or tenure, correlated stronger with preferences for training methodologies. Before the analyses were run, I determined the average overall preference for all 13 training methodologies for each participant. Findings determine that age correlated with training method preference more than tenure did. These correlations were  $r = 0.127$  and  $r = 0.029$ , respectively. There were no statistically significant results though. Thus, based on this data, one can imply that age would be a better predictor of training preferences compared to tenure even though neither correlation was very strong. To further consider this question, I looked at the correlation between age and tenure and discovered that these two variables were statistically significantly correlated at  $r = 0.65$ ,  $p < .01$ . This finding helps determine that these variables are not the same, but they generally work together in that as one ages they are more likely to have a longer tenure.

In summary, in almost every situation the hypotheses were not supported or showed very little support and reverse results were found. In Hypothesis 1, it seemed older employees preferred technology be incorporated into training more than younger employees. For Hypothesis 2, independent sample t-tests determined older employees were more willing to train using most of the training methodologies compared to younger employees. In Hypothesis 3, independent sample t-tests determined those with more job tenure also were more willing to participate in almost all 13 types of training methodologies compared to those with less job tenure, respectively. However, using correlations compared to independent samples t-tests provided more support for

Table 5

*Summary of Group Statistics of Willingness to Train Using Different Methodologies**Based on Job Tenure*

	<i>N</i>	<i>M</i>	<i>SD</i>
Willingness			
Case study			
Less Than 5 Years	39	3.92	0.77
5 Years or Greater	64	3.66	0.90
G-B training			
Less Than 5 Years	39	3.79	0.89
5 Years or Greater	64	3.78	1.03
Internship			
Less Than 5 Years	39	3.92	1.27
5 Years or Greater	64	3.98	0.95
Job rotation			
Less Than 5 Years	39	3.92	0.96
5 Years or Greater	64	4.05	0.92
Job shadow			
Less Than 5 Years	39	4.08	0.90
5 Years or Greater	64	4.11	0.80

Table 5 (continued)

*Summary of Group Statistics of Willingness to Train Using Different Methodologies**Based on Job Tenure*

	<i>N</i>	<i>M</i>	<i>SD</i>
Lecture			
Less Than 5 Years	39	2.95	1.08
5 Years or Greater	64	3.08	1.03
M & A			
Less Than 5 Years	39	4.21	0.66
5 Years or Greater	64	4.25	0.59
Program inst.			
Less Than 5 Years	39	2.82	1.17
5 Years or Greater	64	3.33	0.94
Role model			
Less Than 5 Years	39	3.23	0.99
5 Years or Greater	64	3.47	0.91
Role play			
Less Than 5 Years	38	2.87	1.07
5 Years or Greater	64	2.97	1.15
Simulation			
Less Than 5 Years	39	3.54	0.82
5 Years or Greater	64	3.42	0.99

Table 5 (continued)

*Summary of Group Statistics of Willingness to Train Using Different Methodologies  
Based on Job Tenure*

	<i>N</i>	<i>M</i>	<i>SD</i>
S-B training			
Less Than 5 Years	39	3.15	0.90
5 Years or Greater	64	3.16	1.13
Team training			
Less Than 5 Years	39	3.72	1.15
5 Years or Greater	64	3.80	1.04

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

Table 6

*Summary of Willingness to Train Using Different Methodologies Based on Tenure*

	<i>t</i>	<i>df</i>	<i>p</i>
Willingness			
Case study	1.54	101	0.13
G-B training	0.07	101	0.95
Internship	-0.26	64.12	0.80
Job rotation	-0.65	101	0.51
Job shadow	-0.19	101	0.85
Lecture	-0.61	101	0.54
M & A	-0.36	101	0.72
Program inst.	-2.42	101	0.02*
Role model	-1.25	101	0.22
Role play	-0.44	100	0.66
Simulation	0.62	101	0.54
S-B training	-0.01	93.60	0.99
Team training	-0.36	101	0.72

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training. Internship and Stimulus-based training failed Levene's Test for Equality of Variances.

\* $p < .05$

Table 7

*Participant Willingness Based on Tenure Correlation*

<i>Willingness</i>	<i>Tenure r</i>
Case study	-0.26**
G-B training	-0.22*
Internship	-0.01
Job rotation	-0.02
Job shadow	0.03
Lecture	-0.05
M & A	0.01
Program inst.	0.12
Role model	0.02
Role play	-0.03
Simulation	-0.02
S-B training	-0.01
Team training	-0.03

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

\* $p < .05$

\*\* $p < .01$



Hypotheses 2 and 3. From the correlations, younger employees and those with less job tenure were actually more willing to participate in the majority of the training methodologies compared to older, more tenured employees.

### **Exploratory Findings**

To continue to expand on the results presented, some more exploratory analyses were conducted. First, to build on the results from Hypotheses 2 and 3, bivariate correlations were conducted on preferences by age and tenure for each of the training methods including the question on integrating technology into training. With these correlations, the preference variable was determined by averaging each participant's scores on all of the training methods giving each participant an overall preference score for training method. Results showed there were more positive correlations than negative correlations with preferences for training, indicating that older employees and more tenured employees tend to say they like or prefer more of the training methods. They preferred lecture and programmed instruction significantly more than younger or less tenured employees did. For convenience, Table 8 was created to show the most favored and least favored training methods, and Table 9 was created to show correlations for both preferences and willingness for each training method by age and tenure side by side for comparison.

Another set of items that were not focused on very much were the demographic questions. To compare demographics such as school level or position type to preference and willingness for training and to other demographics such as age and tenure, bivariate correlations were conducted. Table 10 displays these correlations between most of the demographic variables. Age correlated significantly with school level, tenure, and position type (i.e. non-management, top management, etc.) indicating older employees

Table 8

*Descriptive Statistics for Participant Preferences and Willingness*

	<i>Preference (N = 110)</i>		<i>Willingness (N = 108)</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Case study	3.51	0.89	3.73	0.86
G-B training	3.43	1.05	3.81	0.97
Internship	3.93	1.01	3.96	1.08
Job rotation	3.95	0.92	4.01	0.91
Job shadow	3.97	0.94	4.08	0.84
Lecture	2.64	1.06	3.02	1.04
M & A	4.35	0.66	4.23	0.62
Program inst.	2.66	1.16	3.13	1.04
Role model	3.46	0.89	3.34	0.99
Role play	2.71	1.16	2.93	1.16
Simulation	3.45	0.85	3.45	0.95
S-B training	2.95	1.05	3.13	1.08
Team training	3.58	1.05	3.73	1.10
Technology	3.90	0.87	4.12	0.79

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

Table 9

*Participant Preferences and Willingness by Age and Tenure in Bivariate Correlation*

<i>Preferences</i>	<i>Age r</i>	<i>Tenure r</i>	<i>Willingness</i>	<i>Age r</i>	<i>Tenure r</i>
Case study	0.07	-0.13	Case study	-0.16	-0.26**
G-B training	-0.14	-0.13	G-B training	-0.08	-0.22*
Internship	0.06	-0.01	Internship	-0.06	-0.01
Job rotation	0.16	0.15	Job rotation	0.02	-0.02
Job shadow	0.14	0.26*	Job shadow	0.04	0.03
Lecture	0.33**	0.22*	Lecture	0.03	-0.05
M & A	0.07	-0.12	M & A	0.09	0.01
Program inst.	0.35**	0.31**	Program inst.	0.19*	0.12
Role model	0.19	0.08	Role model	0.04	0.02
Role play	0.15	0.17	Role play	-0.01	-0.03
Simulation	0.04	0.10	Simulation	-0.08	-0.02
S-B training	-0.13	-0.03	S-B training	-0.07	-0.01
Team training	0.09	0.07	Team training	0.10	-0.03
Technology	0.18	0.07	Technology	-0.03	-0.28**

*Note.* G-B training = Games-based training; M & A = Mentor and Apprenticeship

training; Program inst. = Programmed Instruction training; S-B training = Stimulus-based training.

\* $p < .05$

\*\* $p < .01$

Table 10

*Correlations between Demographic Variables*

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Age		-0.20*	0.65**	-0.28**	0.13	0.001
2. School level			-0.42**	0.001	0.11	0.11
3. Tenure				-0.27**	0.03	-0.10
4. Position type					-0.17	-0.16
5. Preference						0.52**
6. Willingness						

\* $p < .05$ \*\* $p < .01$

were more likely to have a lower school level, more tenure, and a higher position type. Tenure also correlated significantly with school level and position type in that those that had a longer tenure generally had a lower school level and a higher position type. Along with these findings, a significant correlation was also found between the preference and the willingness variables that were created based on the averages for all of the training methods for each participant.

To investigate any differences of preferences and willingness to train based on gender, independent samples t-tests were performed. Men were found to be more willing and prefer to train more compared to women, but this may be because the men were significantly older and more tenured than women. Otherwise the differences in preference and willingness to train between men and women were not significant. Tables 11 and 12 summarize the results from this independent samples t-test.

The last exploratory finding involved differences for preferences and willingness based on ethnicity. A one-way analysis of variance was conducted and found no significant differences. However, this may be due to the fact that there were very few minorities that participated. Tables 13 and 14 summarize these results.

Overall, the exploratory results gave more insight as to any differences between preferences and willingness to train among various demographic groups. In general, many of the demographic variables correlated as may be expected. There were not significantly different findings in preferences or willingness to train based on gender or ethnicities. Even though these findings were not at a significant level, men were more willing and preferred to train more compared to women. Since this was most likely due to the fact that the men were older and more tenured, this finding still demonstrates reverse results in what was predicted in some of the hypotheses showing that younger or

Table 11

*Summary of Group Statistics of Demographics by Gender in Independent Samples t-Test*

	<i>N</i>	<i>M</i>	<i>SD</i>
Age			
Female	60	41.07	14.03
Male	45	47.07	13.20
Tenure			
Female	50	10.60	11.52
Male	45	18.11	12.70
Preference			
Female	61	3.41	0.56
Male	48	3.54	0.65
Willingness			
Female	61	3.51	0.60
Male	48	3.63	0.67

Table 12

*Summary of Demographics by Gender in Independent Samples t-Test*

	<i>t</i>	<i>df</i>	<i>p</i>
Age	-2.22	103	0.028*
Tenure	-3.02	93	0.003**
Preference	-1.14	107	0.26
Willingness	-0.96	107	0.34

\* $p < .05$

\*\*  $p < .01$

Table 13

*Summary of Group Statistics of Overall Preferences and Willingness for Training by Ethnicity in One-Way Analysis of Variance*

	<i>N</i>	<i>M</i>	<i>SD</i>
<b>Preference</b>			
Caucasian/White	100	3.46	0.59
African American/Black	1	4.00	-
Hispanic/Latino	5	3.80	0.84
Native American/ American Indian	2	3.00	0.00
Other	1	3.00	-
Total	109	3.47	0.60
<b>Willingness</b>			
Caucasian/White	100	3.56	0.63
African American/Black	1	5.00	-
Hispanic/Latino	5	3.60	0.55
Native American/ American Indian	2	3.00	0.00
Other	1	3.00	-
Total	109	3.56	0.63



Table 14

*Summary of Overall Preferences and Willingness for Training by Ethnicity in One-Way Analysis of Variance*

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Preference					
Between Groups	1.50	4	0.37	1.03	0.39
Within Groups	37.64	104	0.36		
Total	39.14	108			
Willingness					
Between Groups	3.02	4	0.76	1.97	0.10
Within Groups	39.84	104	0.38		
Total	42.86	108			

less tenured employees were not necessarily more willing or preferred to train more so than the older and more tenured employees.

## CHAPTER 4

### DISCUSSION

The current study was conducted to build on previous literature about aging and training in the workforce. Currently, the workforce is largely made up of a group called the ‘baby boomers.’ This group is on the brink of retirement which means something will need to be done in the workplace. Some suggest training newer, younger employees to fill the positions of the older employees while others believe there will not be enough younger employees to fill this large gap so older workers should stay. Either way, the workforce is constantly changing processes and procedures and employees will be expected to adapt to these changes. Thus, employees need to stay trained on how organizations operate to increase efficiency and decrease potential mistakes among other reasons. This study specifically examined age and its effects on preferences and willingness for various training methodologies. The following discusses the results for each of the hypotheses and research question.

The first hypothesis focused on technology use in training. Many people do not like using technology. This may be due to a number of reasons, with one being the current technology gap in which older employees did not grow up with the technology advances that have occurred in the past couple of decades. This gap affected some of the older employees in that they struggle more with technology and make more mistakes using technology compared to younger employees (Czaja & Sharit, 1993a, 1993b). The gap may also have caused older employees (45 years of age and older) to utilize computer technology much less than their younger counterparts (Bué & Gollac, 1988 as cited in Marquié, Thon, & Baracat, 1994; Lorence & Park, 2006).

**Hypothesis 1.** When tested, this hypothesis was not supported. In fact, older employees preferred training methods involving technology significantly more than the younger employees did. Bivariate correlations supported this finding even though it was not statistically significant in this case. This result was quite surprising. There are a few reasons why this result may have occurred. First, this study used an online survey as an option to participate in the study. The two organizations that participated in the study preferred to use this option as opposed to the paper version. Also, no one was forced to take the survey, so the employees that volunteered to take it might have felt more comfortable using technology compared to others who chose not to participate. The other group of participants that volunteered to participate through Facebook must have had a Facebook account, thus to some degree were also comfortable with technology.

Another possible explanation for this result is simply that older individuals are not as opposed to technology as many believe. Based on previous literature and the most current statistics from the Bureau of Labor Statistics (2015) on the average age of an employee, this study divided the age groups between less than 41 years old and 41 years of age or older (Bué & Gollac, 1988 as cited in Marquié, Thon, & Baracat, 1994; Elias, Smith, & Barney, 2012; Lorence & Park, 2006; Warr & Pennington, 1993). The age at which employees are considered 'older' or have less experience with technology has not changed much in the last decade or so thus potentially creating a limitation now since individuals older than this did grow up with technology. Whether or not an 'older' individual grew up with technology, he or she may still have kept up with the advancements of technology. Technology may also have improved making many organizational processes and procedures easier or more streamlined, making it a preferred method of working. The last possible explanation that will be mentioned for this result is

that there are more younger employees that see or use technology enough in their daily lives that they prefer to get away from technology or work more hands on at their jobs. This would be interesting to test in future experiments, and will be discussed more under future research.

Previous literature also examines employee willingness for various types of training based on an individual's age. Older employees seemed to be less willing to participate in any type of training compared to younger employees (Van Vianen et al., 2011; Warr & Fay, 2001). This may have been due to the fact that older employees were less motivated to train or placed less emphasis on themselves being trained compared to them training others and passing on their knowledge (Lee et al., 2014; Tillsley, 1990).

**Hypothesis 2.** There was little support for this hypothesis. The only cases in which older employees were less willing to invest time into training occurred with the case study and role play methodologies. Otherwise, older employees were more willing to invest time into all other training methods but not at a statistically significant level except for the programmed instruction method. Older employees may have had experience with more of the training methods compared to younger employees which may have led them to feel more comfortable and, furthermore, more willing to be trained in the majority of the training methodologies. It is also possible that younger participants did not understand each type of training method despite being given the definitions to each, thus making them more hesitant to be trained using the different types of training methods. When performing bivariate correlations instead of independent samples t-tests, the statistically significant result of older employees being more willing to invest time into training via programmed instruction stayed consistent. However, more training methods were added to the list of those that older employees were less willing to invest

time into. These methods included case study, games-based training, internship, role play, simulation, and stimulus-based training. Using correlations gave more support to the hypothesis compared to using independent samples t-tests. With these results, older employees may actually be less willing to invest time into most of the training methods as previous research suggested (Van Vianen et al., 2011; Warr & Fay, 2001).

Much of the previous literature placed more of an emphasis on age rather than tenure while some studies did not even differentiate between the two. The little bit of research focusing on tenure and various job characteristics showed that tenure was an underlying factor in other organizational processes such as job performance and turnover, thus this study differentiated between age and tenure to examine each variable separately (Mitchel, 1981; Sparrow & Davies, 1988).

**Hypothesis 3.** This hypothesis also received little support. Those with more job tenure were more willing to take part in all but three training methods: case study, games-based training, and simulation. However, none of these findings were statistically significant. The only significant difference found for this hypothesis was that employees with more job tenure were significantly more willing to be trained using the programmed instruction training method. Similar to the previous hypothesis, these results may be because employees with a longer tenure may have been exposed to more types of training in which they are more comfortable with various types of training. Another possible explanation is that employees with less tenure are also less experienced and thus more hesitant to try different types of training methods. The lack of significant results may indicate that tenure may not be related to training as compared to previous studies that have studied tenure with other organizational processes (Mitchel, 1981; Sparrow & Davies, 1988). Similar to findings for the previous hypothesis, findings using

correlations between tenure and willingness to take part in the 13 training methods were different from the findings using independent samples t-tests. By conducting correlations, results showed employees with less tenure were actually more willing to take part in all but four training methods: job shadow, mentor and apprenticeship training, programmed instruction, and role model. This result could be related to the notion that older employees generally have a longer tenure and these same employees also are more disengaged from their organizations and more focused on training of newer, younger employees (Lee et al., 2014; Tillsley, 1990). Results also determined that employees with less job tenure are significantly more willing to participate in case study and games-based training. Those with more job tenure were not found to be significantly more willing to participate in programmed instruction as found using the independent samples t-test. These correlational results provide much more support for the hypothesis.

**Research question.** The results provide little support to the notion that age is a better predictor of training method preferences compared to tenure as a predictor. However, those findings were not statistically significant, suggesting those relationships are not very different. Findings also show that age and tenure correlated well with one another even though they did not correlate perfectly. Generally, as one ages, they also have a longer tenure. These findings may help one understand why previous research did not necessarily differentiate between age and tenure (Armstrong-Stassen & Templer, 2005; Callahan, Kiker, & Cross, 2003).

### **Exploratory Findings**

Building on the rest of the results, the exploratory findings began by discovering that older employees and more tenured employees tended to say they preferred more of the training methods, especially lecture and programmed instruction. However, as

previously mentioned with Hypotheses 2 and 3, correlations gave more support for the predictions that older employees and more tenured employees would be less willing to take part in each type of training (Van Vianen et al., 2011; Warr & Fay, 2001). Based on these correlations, it may be implied that older, more tenured employees have experienced the various types of training and prefer some over others but are not as willing to take part in some of the training methodologies compared to younger, less tenured employees who may have not experienced many of the training methodologies. Thus they do not have as strong of preferences, but they are willing to try more of them. From these findings, nothing can be definitely determined, but implications can be made as to why these results were found. Again, these results varied depending on the type of analysis used, so it was important to conduct different analyses to compare how they altered the results.

From the results in Table 9, we can see that for the most part people preferred to participate in training methods such as job shadow, lecture, programmed instruction, and role model. Participants least preferred to participate in simulation, case study, and mentor and apprenticeship. When it comes to willingness, participants were most willing to participate in programmed instruction, case study, games-based training, and team training. They were least willing to participate in job rotation, lecture, and role play.

When focusing on other demographic variables and how they correlated, most results were expected. Older employees seemed to have more tenure and a higher position type; however, they also had a lower school level. The latter finding might be due to the change in education and the emphasis on getting more advanced degrees in recent years (Shelley, 1992). More organizations require higher levels of education for many of their jobs compared to what was required to get a job 40+ years ago. For some



of the older employees from the Baby Boomer generation, they were found to simply finish high school or begin college before starting on their career path. However, between that and the number of years of experience they have built, this may explain how they have worked their way to higher positions in their company. Similarly to the age variable correlations, longer tenure was found to correlate with higher position type and lower school levels. Since this study focused mainly on manufacturing organizations, it would be interesting to see if different career or job fields found similar results. These organizations may require less education for the majority of their jobs compared to other fields.

Gender and ethnicity are demographics that are always interesting to explore. Findings in this study suggest that men were more willing and preferred to train more compared to women. However, men were significantly older and more tenured than women, which may partially explain this result. Another explanation could be related to the “glass ceiling” or the phenomenon in which women and minorities have more difficulty advancing their careers. Due to the glass ceiling, it is possible that women or minorities are not as motivated to participate in trainings if the trainings will not help them advance their careers in some way (Connell, 2006). With the result that more tenured employees are more likely to hold a higher position, it may be that the male participants’ longevity and position in the company has increased their investment into the company in which they are more willing and prefer to train to maintain or improve their position and maybe salary. It would be interesting to see if salary correlated with the demographic variables collected in this study even though it would be difficult to collect that information (Hogue, DuBois, & Fox-Cardamone, 2010).

When exploring ethnicity and preferences or willingness to train, there were no significant differences found. This most likely was due to the fact that there were very few minorities participating in the study. One reason this may have been was because one requirement for participating was that participants had to be fluent in English. In the specific organizations studied, those minorities may not have been fluent enough in English to read or understand the survey. It is also possible that those organizations do not have many minorities working there. Either way, future research should reexamine ethnicity with larger groups to see if there is an effect or not.

### **Limitations**

The current study was conducted with its set of limitations. To begin, there were a few limitations with the survey itself. First, as previously mentioned, the majority of the survey including the 13 training methods and their definitions were used from a previous study (Martin et al., 2014). Even though I reviewed the definitions for all of the training methods, these definitions may not have been understandable by participants. It is possible that participants answered the questions of the survey without understanding each training method or simply did not read the definition of each training method and answered based on their perception of what each training method entailed. Participants may have not understood the difference between preference for certain training methods as opposed to actual willingness to participate in certain training methods as well. To some, the explanation of these may have not been clear resulting in the participants answering the same for both sections of the survey.

Another limitation of this survey was that not all of the questions or constructs passed Levene's Test for Equality of Variances resulting in me using the data that assumed unequal variances for a few of the results as mentioned within the results

section. Failing this test means that scores in one condition vary much more than scores from another condition. In this study, when examining one's willingness to use the various training methods based on one's age, the case study and stimulus-based training methods did not pass Levene's Test for Equality of Variances. When again testing for willingness to use the different training methods but based on one's tenure, internship and stimulus-based training methods did not pass the test.

Another limitation found during the study was the use of grouping the age and tenure variables into two groups each thus changing them to dichotomous variables. Doing so meant independent samples t-tests must be conducted on the data. However, after considering conducting this type of analysis might alter the results, correlational analyses were run for Hypotheses 2 and 3. Results determined both older employees and those with more job tenure were generally less willing to take part in most of the training methodologies. Thus, much more support could be given to these hypotheses compared to the previous findings.

The last limitation for the survey itself is one in which using a survey creates the chance for participants to give false information or only attract a certain group of participants to volunteer to answer the questions. There was no incentive in completing the survey, so individuals may have decided not to participate due to this. This leads to another possible limitation being that the sample collected for this study was not representative of the whole population. Again, this may be because there was no incentive for individuals to participate, but it also could be because those who did not participate did not work well or want to complete the survey electronically. The latter reason here relates to the two companies used for the study because a company representative chose which version, the electronic or paper, would work best for their

employees to complete the survey. No individual employees were able to choose which version of the survey they wanted to complete. Doing so may have attracted more individuals to participate in the study (Marcus, Bosnjak, Lindner, Pilischenko, & Schutz, 2007). This particular survey was also created by the author for this study. This was the first time this survey was used in a study. Not all of the results came out as expected such as some of the low reliabilities found during both the pilot and primary studies. Based on these limitations, improvements can be made for future research.

### **Future Research**

The current study developed a stepping stone to begin future research in this field. Future studies can go in many directions, but only a few will be listed here. Collecting additional data from different professions or groups can add to support for or against similar hypotheses as those from this study. Since the majority of the data collected from this study came from individuals working in manufacturing settings, other fields or professions may find different results (Bartlett, 2001; Mullins, 1992). It is also possible, since this study did not have a large variation in a few demographics such as ethnicity, using a more diverse group of participants could result in different findings as well. It would be interesting to see if different groups of participants receive similar results or not because the information found could determine if organizations need to restructure or change their training processes. More data can also help determine if the technology gap is a critical problem for different age groups and if so, what organizations can do to help close that gap as technology becomes more prevalent in the workplace (Charness, Czaja, & Sharit, 2007).

If future researchers have the ability to put an actual experiment together instead of passing out a survey, the results could be interesting. An experiment to identify how

employees do on specific tasks after being trained with a particular training method, including methods using technology, may help narrow down the best ways to train employees on different tasks expected of them. In experiments like this, employees could be measured on the number of mistakes made when completing each task as well as levels of engagement when being trained with different training methods. Getting feedback from employees once the experiment is finished can also help identify how well the employees perceived the training and whether or not they feel they could accomplish a task successfully based on how they were trained. This type of experiment could go in many directions and many variables could be identified that are not as easily measured with a basic survey. Unfortunately, completing an experiment like this would take a lot more time and money (Tzafrir, 2005).

Another suggestion to improve upon the current study is to make sure the participants understand the definitions of all the constructs being measured. With participants who have varying educational backgrounds, it is possible for some to be confused or simply not understand what some of the terminology meant (Graesser, Cai, Louwrese, & Daniel, 2006). Potential ways this could be accomplished may include giving examples of each type of training, role playing an example of each type of training, or providing extra information on each type of training depending on individual needs. Due to time restrictions, this study did not follow up on whether this was an actual issue for many participants or not.

It would also be valuable for individual organizations to complete a similar study within the organization to identify ways in which the organization's employees learn best. This would be more difficult for organizations with a greater turnover rate, but doing so may decrease mistakes made and costs associated with that and increase

learning, productivity, and efficiency from a training standpoint (Clarke, 2003; Sparrow & Davies, 1988). Training will always be a necessity in organizations. Creating training systems and identifying the best way for employees to complete training can be a critical factor in an employee's success at the organization, thus it is imperative that organizations take time to develop employees' skills and maintain a successful functioning organization.

The current study added to the existing literature in a number of ways. First, this study found that the assumption that older people do not like or prefer to use technology is not always the case. Older employees actually preferred to incorporate technology into training more than younger employees did. Second, in general, older employees and those with more job tenure preferred more of the training methodologies while younger, less tenured employees were more willing to participate in more of the training methodologies studied. This study also found that age was a slightly better predictor of training preferences compared to tenure even though this finding was not significant. Age and tenure strongly correlated which may be why most previous research does not differentiate between the two. The last few pieces to take away from this study include that older, more tenured individuals are more likely to have a higher management position in the organization but have less education or a lower school level. Also, men were more willing and preferred to train more compared to women. While most of these results were not at a significant level, they still provide data that can be built from in future research.

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## Appendix A

### Employee Training Preferences

### Employee Training Scale

Please read the instructions carefully. Below you will find two similar looking scales. The first scale will measure your preference for different types of training methods. The second scale will measure your willingness to participate in those types of training methods (whether you prefer them or not). For example, you may be willing to participate in a training method such as hands-on training but you may not prefer to use that method compared to the other methods. Descriptions for each training method are provided.

Rate your PREFERENCE from strongly do not prefer, do not prefer, neutral or neither do not prefer nor prefer, prefer, strongly prefer for being trained using the following methods:

Method:	Strongly do not prefer	Do not prefer	Neutral or neither do not prefer nor prefer	Prefer	Strongly prefer
<b>Case study-</b> Provides the participants an opportunity to develop skills by presenting a problem, without a solution, for them to solve, or with a solution, as an exemplar of how to solve it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Games-based training-</b> Trainees compete in decision-making tasks which allows them to explore a variety of strategic alternatives and experience the consequences which affect the other players, but without risk to the individuals or the organization.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Internship-</b> Involves supervised, practical training while on the job where the trainee is permitted to work in the position for which they are training, but with some restrictions and with substantially less pay or no pay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<p><b>Job rotation-</b> Involves training for a different job by working in that job for a limited duration, while still maintaining the original job.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Job shadowing-</b> Involves a trainee closely observing someone perform a specific job in the natural job environment for the purpose of witnessing first-hand the details of the job.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Lecture-</b> Involves the dissemination of training material by a trainer to a group of trainees, by means of verbal instruction.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Mentoring and apprenticeship-</b> Involves a one-on-one partnership between a new employee with a senior employee. Mentorship aims to provide support and guidance to less experienced employees whereas apprenticeship is for the development of job skills.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Programmed instruction-</b> Involves the delivery of training through instruction that is delivered by a program via some electronic device without the presence of an instructor; the electronic device can be a computer, DVD player, CD player, etc.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Role-modeling-</b> Involves the live presentation of skill(s) by a trainer to an audience of trainees.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<p><b>Role play-</b> Requires trainees to assume a character and act out the role in a make-believe scenario or series of scenarios; learning comes by way of reflection on the play.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Simulation-</b> Involves using a simulator where skills are developed through repeated practice with a multisensory experience of imitated conditions. A form of simulation training is Virtual Reality Training which entails total sensory immersion.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Stimulus-based training-</b> Using some type of stimulus (i.e., music, works of art, narratives, etc.) to motivate the learner to learn. The training induces a state of being (e.g., relaxation or awareness) in the participants to achieve learning.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Team training-</b> Intended exclusively for groups of individuals that behave interactively, to either improve mutual knowledge within a team or to train the team on a team-specific skill.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On the same scale from strongly do not prefer, do not prefer, neutral or neither do not prefer nor prefer, prefer, strongly prefer, please indicate your answer to the following:

	<b>Strongly do not prefer</b>	<b>Do not prefer</b>	<b>Neutral or neither do not prefer nor prefer</b>	<b>Prefer</b>	<b>Strongly prefer</b>
If choosing a training method in general, please rate your preference for one that incorporates <b>technology</b> as opposed to no technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix B

### Employee Willingness

Rate your WILLINGNESS from very unwilling, unwilling, neutral or neither unwilling nor willing, willing, very willing for being trained using the following methods:

<b>Method:</b>	<b>Very unwilling</b>	<b>Unwilling</b>	<b>Neutral or neither unwilling nor willing</b>	<b>Willing</b>	<b>Very willing</b>
<b>Case study-</b> Provides the participants an opportunity to develop skills by presenting a problem, without a solution, for them to solve, or with a solution, as an exemplar of how to solve it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Games-based training-</b> Trainees compete in decision-making tasks which allows them to explore a variety of strategic alternatives and experience the consequences which affect the other players, but with without risk to the individuals or the organization.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Internship-</b> Involves supervised, practical training while on the job where the trainee is permitted to work in the position for which they are training, but with some restrictions and with substantially less pay or no pay.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Job rotation-</b> Involves training for a different job by working in that job for a limited duration, while still maintaining the original job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<p><b>Job shadowing-</b> Involves a trainee closely observing someone perform a specific job in the natural job environment for the purpose of witnessing first-hand the details of the job.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Lecture-</b> Involves the dissemination of training material by a trainer to a group of trainees, by means of verbal instruction.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Mentoring and apprenticeship-</b> Involves a one-on-one partnership between a new employee with a senior employee. Mentorship aims to provide support and guidance to less experienced employees whereas apprenticeship is for the development of job skills.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Programmed instruction-</b> Involves the delivery of training through instruction that is delivered by a program via some electronic device without the presence of an instructor; the electronic device can be a computer, DVD player, CD player, etc.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Role-modeling-</b> Involves the live presentation of skill(s) by a trainer to an audience of trainees.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



<p><b>Role play-</b> Requires trainees to assume a character and act out the role in a make-believe scenario or series of scenarios; learning comes by way of reflection on the play.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Simulation-</b> Involves using a simulator where skills are developed through repeated practice with a multisensory experience of imitated conditions. A form of simulation training is Virtual Reality Training which entails total sensory immersion.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Stimulus-based training-</b> Using some type of stimulus (i.e., music, works of art, narratives, etc.) to motivate the learner to learn. The training induces a state of being (e.g., relaxation or awareness) in the participants to achieve learning.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>Team training-</b> Intended exclusively for groups of individuals that behave interactively, to either improve mutual knowledge within a team or to train the team on a team-specific skill.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On the same scale from very unwilling, unwilling, neutral or neither unwilling nor willing, willing, very willing, please indicate your answer to the following:

	<b>Very unwilling</b>	<b>Unwilling</b>	<b>Neutral or neither unwilling nor willing</b>	<b>Willing</b>	<b>Very willing</b>
If given a training method in general, please rate your willingness to participate in one that incorporates <b>technology</b> as opposed to no technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix C

### Demographic Variables

### Demographic Questions

*Please answer the following demographic questions.*

Are you able to speak and read English fluently?                      Yes                      No

Please circle your gender.                      Female                      Male

Please circle your ethnicity.                      Caucasian or White  
    African American or Black  
    Asian American or Pacific Islander  
    Hispanic or Latino  
    Native American or American Indian  
    Other (Please list: \_\_\_\_\_)

Please circle the highest degree or level of school you have completed.

No schooling completed  
 Some high school, no diploma  
 High school graduate, diploma, or GED  
 Some college credit, no degree  
 Trade/technical/vocational training  
 Associate's degree  
 Bachelor's degree  
 Master's degree  
 Professional degree  
 Doctorate degree  
 Other (Please specify: \_\_\_\_\_)

Please list your age.                      \_\_\_\_\_

Are you currently employed in a full-time position?                      Yes                      No

How long have you worked in your current position?  
 \_\_\_\_\_ years                      \_\_\_\_\_ months

Please circle the position type that best fits your position.

Top Management  
 Middle Management  
 Entry-level Management  
 Non-Management

Appendix D

Institutional Review Board Approval Letter

## Institutional Review Board Approval Letter

**EMPORIA STATE  
UNIVERSITY**  
 ■ GRADUATE SCHOOL AND  
DISTANCE EDUCATION

Research and Grants Center  
 Campus Box 4003  
 1 Kellogg Circle  
 Emporia, Kansas 66801-5415  
 620-341-5351  
 620-341-5909 fax  
[www.emporia.edu/research](http://www.emporia.edu/research)

July 27, 2016

Carrie Booth  
 Psychology  
 1201 Sharps Creek Road  
 Cottonwood Falls, KS 66845

Dear Ms. Booth:

Your application for approval to use human subjects has been reviewed. I am pleased to inform you that your application was approved and you may begin your research as outlined in your application materials. Please reference the protocol number below when corresponding about this research study.

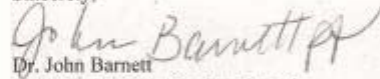
Title:	Relationship Between Age and Employee Training Methodology
Protocol ID Number:	16094
Type of Review:	Expedited
Time Period:	July 15, 2016 to July 15, 2017

If it is necessary to conduct research with subjects past this expiration date, it will be necessary to submit a request for a time extension. If the time period is longer than one year, you must submit an annual update. If there are any modifications to the original approved protocol, such as changes in survey instruments, changes in procedures, or changes to possible risks to subjects, you must submit a request for approval for modifications. The above requests should be submitted on the form Request for Time Extension, Annual Update, or Modification to Research Protocol. This form is available at [www.emporia.edu/research/irb.html](http://www.emporia.edu/research/irb.html).

Requests for extensions should be submitted at least 30 days before the expiration date. Annual updates should be submitted within 30 days after each 12-month period. Modifications should be submitted as soon as it becomes evident that changes have occurred or will need to be made.

On behalf of the Institutional Review Board, I wish you success with your research project. If I can help you in any way, do not hesitate to contact me.

Sincerely,



Dr. John Barnett  
 Chair, Institutional Review Board

pf

cc: Brian Schrader

Appendix E  
Participant Consent Form

## Employee Training Scale Participant Consent Form

Thank you for participating in my survey. Your feedback is important. Please read and complete this consent form before continuing to the survey.

If you have any questions ask the experimenter and she will answer the question(s).

You are invited to participate in a study investigating the relationship between age and preferences for training methodology. To participate, you will complete a short 28-question survey as well as eight demographic questions.

Information obtained in this study will be identified only by code number. Each survey will have a number on the top of it. No names will be associated with your survey answers. This ensures anonymity and confidentiality.

Your participation in this study is completely voluntary. Should you wish to terminate your participation, you are welcome to do so at any point in the study. There is no risk or discomfort involved in completing the study.

If you have any questions or comments about this study, feel free to ask the experimenter or contact her by email at [cbooth3@g.emporia.edu](mailto:cbooth3@g.emporia.edu)

Thank you for your participation.

I, \_\_\_\_\_, have read the above information and have decided to participate.  
(please print name)

I understand that my participation is voluntary and that I may withdraw at any time without prejudice after signing this form should I choose to discontinue participation in this study.

\_\_\_\_\_  
(signature of participant)

\_\_\_\_\_  
(date)

THIS PROJECT HAS BEEN REVIEWED BY THE EMPORIA STATE UNIVERSITY  
INSTITUTIONAL REVIEW BOARD FOR TREATMENT OF HUMAN SUBJECTS.



I, Carrie Booth, hereby submit this thesis to Emporia State University as partial fulfillment of the requirements for an advanced degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author.

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Signature of Author

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Date

Relationship Between Age and Employee Training Methodology  
Title of Thesis

---

Signature of Graduate Office Staff Member

---

Date Received