

**BEST PRACTICE TRAINING TECHNIQUES FOR
GENERATION Z FIREFIGHTERS**

Research Presented in Partial Fulfillment
of the Requirements for the
Executive Fire Officer Program

by

Eric A. Lang

Deputy Fire Chief

South Area Fire & Emergency Response (SAFER) District, WI

National Emergency Training Center

August 2024

Abstract

There is a gap between the traditional teaching methods in the fire service and the preferred learning methods of Generation Z. Through a general qualitative research design, his study aimed to identify Generation Z's preferred learning practices by answering four research questions: What motivates Generation Z to join the fire service? What are Generations Z's preferred learning methods for fire ground operations? How can fire departments utilize social media and new technologies to aid initial and ongoing training? What processes and techniques might be utilized during the fire academy and probationary period to enhance and meet employee expectations? 15 Generation Z participants from six Wisconsin fire departments were asked structure questions. Limitations to the research included the number of research participants and their limited experience using social media platforms and new technologies for fire department training. Analysis of the data found 18 identified themes. These themes resulted in several recommendations for the fire service. These recommendations include: when planning a training program, understanding what motivates new firefighters to increase their engagement, training programs for Generation Z should be hands-on training that is scenario-based with small instructor-to-student ratios, and ensuring a mentor is assigned to every firefighter candidate.

Acknowledgments

First and foremost I want to thank my wife, Tami. This journey started five or six years ago with a discussion about my desire to apply and participate in this coursework and what it would take to complete it. With my wife's full support, I was able to achieve one of my lifelong career goals, and without your support, I never could have accomplished this. I want to thank the many members of the SAFER District, SAFER District fire commissioners, SAFER District board of directors, and SAFER District Chief Finke. You all played a role in my ability to complete this challenging coursework. Between agreeing to be interview subjects for this paper and other pre-coursework, allowing time for me to work on projects during working hours, and allowing me the time to attend classes, without your support, I would not have been able to meet the deadlines and complete all the coursework over the last two years. Finally, I'd like to thank my peers whom I've met and developed friendships with, and who also supported me through the last two years as we completed these tasks together.

My affiliation with the South Area Fire & Emergency Response (SAFER) District is provided as biographical information. No official sponsorship or endorsement of this Capstone Research Paper by the SAFER District was provided or should be inferred.

The views expressed in this Capstone Research Paper are the views of the author and participants alone and do not represent the official views of the U.S. Government or any fire department. Certain commercial entities, equipment, or materials may be identified in order to describe a concept or experimental procedure adequately. The use of company names or devices does not imply recommendation or endorsement by SAFER District or any other fire department mentioned, nor is it intended to imply that the entities, materials, or equipment are the best available for the purpose.

Contents

CHAPTER 1. INTRODUCTION	6
Background.....	6
Significance of the Study.....	7
Problem Statement.....	9
Purpose Statement.....	10
Research Question(s) or Hypothesis.....	10
Summary.....	11
CHAPTER 2: LITERATURE REVIEW	12
Introduction.....	12
Existing Literature	12
Synthesis of the Existing Literature	19
Summary	21
CHAPTER 3: METHODOLOGY	23
Research Design.....	23
Population and Sample Size.....	25
Instrument	26
Research Process.....	30
Ethical Considerations	33
Summary	35
CHAPTER 4: STUDY RESULTS.....	36
Introduction – Demographics of the Participants	36
Research Results	38

Summary	68
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS.....	70
Summary of the Results	70
Conclusions Based Upon Your Results	71
Limitations	76
Implications and Recommendations to the Field.....	77
Recommendations for Future Research	78
Conclusion	79
REFERENCES	81
APPENDICES	85
Appendix A - Interview Consent Form	85
Appendix B - Observation Protocol	87
Appendix C - Interview Questions	88

CHAPTER 1. INTRODUCTION

Background

From 1995 to 2012, a generational cohort was born whose capacity for learning was shaped by their total immersion in digital technology (Gilbert et al., 2022). Generation Z is now entering the workforce, and that digital influence is shaping their ability to learn and adapt to dynamic working environments. As trainers, we must embrace their learning preferences to unlock their potential and guide them as the next generation of firefighters.

The South Area Fire and Emergency Response (SAFER) District employs 25 full-time and approximately 35 part-time employees as a combination fire department. Our team conducts fire suppression response, fire inspections, technical rescue, emergency medical services, and inter-facility transfers for the communities of Rib Mountain, Wisconsin, Weston, Wisconsin, and surrounding contracted municipalities. New candidates undergo a rigorous prescreening process before they commence the training academy. The academy curriculum includes 40 hours of traditional classes with hands-on training and 40 hours of on-shift ride-along work with the crews, responding to 911 service calls, and participating in additional training. At the end of the six weeks, candidates undergo scenario-based hands-on testing and written exams. Successful candidates are awarded certificates and become probationary employees for 12 to 18 months, during which they undergo additional hands-on training, testing, and written exams. This process has successfully onboarded candidates since the SAFER District's inception in 2014 when central Wisconsin fire departments Rib Mountain and Weston consolidated.

In 2022, SAFER District welcomed its first part-time employee from Generation Z. This individual successfully completed the training academy and probation, but not without encountering significant challenges. As we continue to see an influx of candidates under 24 years

old, we have observed a recurring pattern of new employees requiring additional support to navigate the probationary period. These challenges, unique to Generation Z, include difficulties with driving, operating apparatus, understanding primary job responsibilities, respecting and following seniority and leadership, and adjusting to their role as employees versus students while fulfilling paramedic requirements. This trend is particularly concerning as we have not encountered the same issues with candidates from Generation Y and Generation X. Given the limited pool of acceptable applicants, it is crucial that we scrutinize our academy and probationary training processes to identify and address any deficiencies contributing to this trend.

Significance of the Study

The white paper “21st Century: Fire and Emergency Services” indicates several expected future challenges, two of which are a lack of training in new approaches and techniques and an inability to adopt new technologies (Center for Public Safety Excellence, 2020). These two challenges identify suggested areas of improvement that can be applied when creating new programs to train Generation Z. As our training programs evolve, our delivery methods will also need to grow.

Peer-reviewed research specifically examining training Generation Z firefighters must be more extensive due to Gen Z’s inclination to learn through technology and social media tools. Social media outlets such as YouTube, TikTok, Snapchat, and Instagram are Generation Z’s primary sources of information gathering (Vogels et al., 2022; Nicolas, 2019; Montiel et al., 2019; Vizcaya-Moreno & Pérez-Cañaveras, 2020; Gilbert et al., 2022). This propensity to technology and social media learning has created a gap in fire department training efforts, especially with Generation X trainers and mentors who may not have the same understanding of

the technology Generation Z utilizes. Miller (2020) stated, “Google is their card catalog and has made the availability of information almost instantaneous. Traditionalists counter with, ‘There is no app for firefighting!’ and ‘It still boils down to sweat and blood.’ ... we must either adapt or face extinction, much like the ‘dinosaurs’ we are often associated with”. Adapting our training practices for the generation coming into the fire service starts with understanding. We need to understand how they learn, what they need to know, and how to ensure that the information we offer stays with them throughout their careers.

Adding to the technology training gap is Generation Z's lack of real-world life experience and job experience (Schroth, 2019). This can be a significant issue for fire departments that rely on that experience to offset some of the costs of running a fire department. Station duties comprise a portion of the work performed by firefighters. Everything from cooking, cleaning, keeping inventory, small engine maintenance, and heavy truck maintenance is performed in-house by firefighters. There is more to the fire service than the technical skills required of firefighters and EMTs. This is one area where the available literature could do a better job of articulating what candidates need. The fire service differs from other professions due to the hours and days crews spend together. Because of their lack of experience, it may be necessary to teach Generation Z life skills in addition to firefighting, rescue, and EMS skills.

First impressions mean everything, and our best chance to instill knowledge, skills, abilities, and, most importantly, values into new candidates is through the training academy. The tools and values we instill into Generation Z candidates will allow them to succeed in a firefighting and EMS career, laying the foundation for their futures. If we cannot connect with them, they may leave for another fire department or quit the fire service, looking for a different line of work. Commitment to training these candidates should begin with understanding how

they learn and what they want out of this career to fulfill their goals and safeguard the future of the fire service.

This research study utilized a qualitative research method with a generic design. Percy et al. (2015) suggests that the generic approach to qualitative research be considered when the researcher is interested in people's opinions about a topic or event. Through qualitative inquiry, this research paper examined how Generation Z's expectations were or were not met during the fire department training academy and probationary period. By interviewing firefighters from the SAFER District and other departments, their expectations were identified, how the expectations were met, and where Gen Z thought they did not get adequate training. Those expectations and experiences were compiled using a generic design to draw conclusions for this research.

Problem Statement

The problem is that a gap exists between traditional teaching methods and Generation Z's preferred learning methods in the fire service. Current training programs utilize processes learned from years of training that district educators, primarily members of the Generation X cohort, experienced themselves.

Generation Z utilizes and expects technology more than other generations, creating a divergence in training techniques that have been viable for years with older members of the Millennial, or Generation Y, cohort. Gen Z's willingness to learn is high, but so is their expectation that the classroom and training ground utilize more than standard lectures offer and incorporate technological aids (Montiel et al., 2020).

The National Fire Protection Agency (NFPA) lists job performance requirements (JPRs) for initial training in NFPA 1001, *Standard for Fire Fighter Professional Qualifications*. Traditional training methods teach these JPRs through PowerPoint-aided lectures and hands-on

skills. Although Generation Z responds well to these teaching techniques, their instructors and employers must understand how they learn to be as effective as possible (Nicholas, 2019). Fire training across the country consists of lectures and hands-on skills, with physical fitness standards in some programs (City of Phoenix, 2024; George, 2021; Illinois Fire Institute, n.d.).

The common thread amongst fire academies is that there is little to no use of social media tools, descriptions of the utilization of technologies, or consideration for and training to the strengths of Generation Z included in the curriculum. This issue exists, and it is worth studying because a better understanding of it has the potential to contribute to future research and impact the profession as a whole.

Purpose Statement

This qualitative inquiry aimed to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service. The proposed research questions will be answered through a qualitative study, and themes will be summarized, resulting in conclusions that will answer the problem statement.

Research Question(s) or Hypothesis

Question 1: What motivates Generation Z to join the fire service?

Question 2: What are Generation Zs preferred learning methods for fire ground operations?

Question 3: How can fire departments utilize social media and new technologies to aid initial and ongoing training?

Question 4: What processes and techniques might be utilized during the fire academy and probationary period to enhance training and meet employee expectations?

Summary

Chapter 1 of this research paper describes the South Area Fire & Emergency Response (SAFER) District and the issues it has experienced over recent years in training and onboarding Generation Z candidates. This discussion was presented to illustrate the research problem while offering an overview of the associated research. Furthermore, the research problem, purpose, and questions have been stated. Moving forward, Chapter 2 will provide a thorough review of the existing literature relevant to the preferred learning practices of Generation Z and onboarding Generation Z into the workplace; Chapter 3 will investigate the methodology used to conduct the research; Chapter 4 will record and summarize the results of the research; and finally Chapter 5 will draw conclusions from the research, answer the research questions, and make recommendations for future Generation Z training programs that may be applied to the SAFER District and departments throughout the fire service.

CHAPTER 2: LITERATURE REVIEW

Introduction

The learning habits of different generational cohorts have been researched in various industries worldwide. Applying known research to Generation Z, who are just hitting the job market, has yet to be applied to some industries, the fire service being one. The studies examined in this literature review have yet to be applied to the fire service and the unique training required of firefighters, rescue technicians, and EMTs. The primary sector of focus for many of the studies was from universities and their students, with others coming from the business, health, technology, psychology, economics, human resources, and marketing sectors. One study dealing with firefighters' situational awareness and virtual reality came from the fire industry and will be discussed in the last section of the literature review.

This review examined the literature on the characteristics and learning preferences of Generation X and Generation Z, as well as Generation Z's motivations. Then, onboarding research was reviewed to identify gaps that may be realized based on these different learning preferences, characteristics, and motivations. Finally, social media and other emerging technologies that could be applied to fire service training as a potential bridge to any gaps realized in our current onboarding processes were researched.

Existing Literature

Generation X

When trying to bridge the gap between traditional teaching methods and new learning methods preferred by Generation Z recruits, we must first understand how Generation X learns and feels about teaching in the digital by considering their characteristics, learning style, and feelings of Generation Z. Growing up, Gen X was independent and had to rely on themselves

while witnessing social and political change during a time of great technological advancement (Vaida, 2024). Gen X's perceptions of Gen Z firefighter recruits and the efforts they put forth in the classroom are usually shaped by the instructor's personal experiences and biases. When considering Generation X teachers at universities, research suggests that one essential experience that shapes them is that in their school days, information was garnered from libraries and the books they held before the digital age. Furthermore, the only other avenue that Gen X had to learn scholarly material was listening to lectures and asking their instructor questions. This experience is very different from that of a digital native, who has always had any information they have ever wanted at their fingertips. This has led to Generation X's perception of Generation Z as unfavorable, as it is related to their experiences and affects Generation X's instruction of Generation Z (Cickovska, 2020).

Generation X is also known for flexibility and continual learning, but not for their computer skills. A potential resulting problem when considering teaching Generation Z is the underutilization of online resources by Generation X to enhance learning and provide directions. Gen X communicates with email and face-to-face interaction while teaching and interacting with students. Meanwhile, Generation Z prefers using apps like Snapchat for communication and participating in online platforms for meetings, such as Zoom (Vaida, 2024). Furthermore, as practical learners, Generation X wants hands-on training with clear objectives that fulfill their career goals (Ventura & Yango, 2023). These research results speak directly to the comfort zones of Generation X teachers in the fire service. They are most comfortable talking to a group with a PowerPoint to aid the lecture while using their experience to explain points and take questions to teach the lessons and hit the objectives for the training.

Generation Z

Young adults from Generation Z grew up with a vastly different childhood from Generation X. Separated by 30 years or more, they were born in the mid to late 1990s through about 2010. They grew up with constant social and technological change and vast information at their fingertips (Cickovska, 2020). These experiences created a generation that prefers problem-solving, real-world applications - such as studying case studies or working for real clients, teamwork, and internet use while staying connected nearly 100% of the time on their mobile devices (Nicholas, 2019). They utilize social media for immediate learning, relying on mobile applications like YouTube. Due to this instant gratification when looking for answers, Generation Z typically prefers exact directions, potentially at the cost of creativity and critical thinking. These findings predicted the struggle they sometimes endure in the fire service, as creativity and critical thinking may be essential skills when faced with emergencies for which they are not precisely trained.

To gain Generation Z's trust and ensure a training program will fit, the fire service will need to assess their motivations to develop recruitment and onboarding policies that play to those motivations. Gen Z is motivated by finding meaningful work that offers competitive compensation and career advancement while being the right fit with the right company and co-workers (Benitez-Marquez et al., 2022). Considering these motivations and values when establishing training programs, the fire service may have more significant potential for positive and predictable results. Training officers need to feed into Generation Z motivations by offering opportunities to see and learn new skills, utilize mobile applications and technology to make access to required materials more accessible, and offer constant feedback on their accomplishments and failures (Dwivedual, 2020).

Onboarding

Several characteristics of Generation Z that have been identified need to be considered when onboarding processes are created and deployed for them. Their lack of experience, increased anxiety and depression, lack of communication skills, and propensity for diversity, equity, and inclusion policies (DEI) are factors that should be addressed during the onboarding process (Schroth, 2019). To create a better process, the fire service must provide a realistic job preview and express employment relationship realities (Schroth, 2019). Furthermore, the onboarding processes should include checklists to outline expectations, question and answer sessions with leadership, and the use of communication or social media technologies to create better lines of communication and affirm recruits' positions and the company's reliance on them and allow for one-on-one feedback (Schroth, 2019). Utilizing these methods should ensure that Generation Z is trained properly while showing commitment to them as more than employees, addressing their concerns.

Human resource management (HRM) professionals should be utilized to implement these onboarding programs properly. Often, chief officers are on their own to research and deploy onboarding practices that will achieve the best outcomes. Implementation of HRM departments needs to be improved in smaller fire departments, like SAFER District, which is comprised of multiple municipalities and lacks the necessary budget for an internal HRM department. HRM professionals are trained to recruit talent, create an onboarding process that trains those recruits, and then foster a working atmosphere that allows the recruits to ensure the company's mission, values, and vision (Benitez-Marquez et al., 2022). Fire districts that do not have an HRM department may be unable to afford a large administrative staff to complete the tasks usually assigned to HRM. This further dilutes the attention and talent of the Fire Chief and

administrative staff. Onboarding practices for Generation Z require the full attention of the individuals responsible for creating them to break from traditional approaches utilized for onboarding.

Generation Z expects more from the workplace than past generations. These new employees have high expectations of their supervisors while demanding flexibility and work-life balance (Lazar et al., 2023). First contact with those supervisors is typically during their recruit training academy and onboarding processes. Some common desirable supervisor characteristics include creativity, honesty, communication skills, and broad general knowledge (Korombel & Ławińska, 2023). Training officers with these traits may better understand and convey the needs of Generation Z, resulting in increased chances of them not only completing but excelling through the onboarding process.

New Training Approaches for the Fire Service

New training approaches have been utilized in different industries. Some research has been conducted into different training methods for the fire service utilizing various technologies. Reverse mentorship programs and technology-based training, including virtual reality and the use of social media applications, have all been studied as new approaches to training. These are possible future applications that the fire service can rely on to train the next generation.

Reverse Mentorship

Reverse mentorship is having students or young employees mentor experienced or executive-level employees. Furthermore, this process can have great impacts on work culture by attracting young employees through values, implementing the utilization of social media, targeting younger audiences, and developing succession planning (Raymond et al., 2021).

Raymond et al. (2021) concluded, “The student-employee reverse mentoring experience was perceived as a key factor in preparing students for a successful career, as evidenced by their employer survey results assessing defined core competencies of the students” (para. 19). Reverse mentorship in the fire service could lead to better use of available technologies by chief officers to complete their work while allowing Generation Z to train and have an impact on real issues happening in their fire department.

Reverse mentorship also impacts the motivations of different generations, creating a collaborative work environment that impacts the skills of established workers while developing long-term mentoring skills for younger workers (Kaše et al., 2019). The fire service is steeped in tradition but, at times, hesitant to embrace change and new ideas. Reverse mentorship may be the path to the future, engaging and motivating the youngest generation while impacting positive change on a department's digital footprint and enhancing stability through succession planning.

Technology – Virtual Reality

The recreational gaming market utilizes virtual reality (VR), which could impact the fire service through training practices for difficult-to-simulate real-world applications. The fire service uses driving simulators and virtual reality firefighting simulators for training. However, costs often make these technologies prohibitive for fire departments, pushing their availability solely to the technical colleges. In the fall of 2021, the South Area Fire & Emergency Response (SAFER) District participated in a product demonstration with FLAIM Systems fully immersive VR learning system, which can be viewed on their website: <https://flaimsystems.com>. This system utilizes a VR headset, self-contained breathing apparatus (SCBA), heated vest, and nozzle with a hose on a reactive real. Within the VR environment, firefighters can participate in various emergency scenarios, and their actions create different environmental consequences.

Nevertheless, purchasing this product was not feasible due to initial product costs and yearly licensing fees for the latest VR environments.

VR in the fire service is not limited to specific situation mitigation training. Participants in a VR firefighter situational awareness study were tested before and after participating in a VR simulation to examine a firefighter's cue recognition as it related to their situational awareness and a firefighter's exposure risk to a backdraft as it related to their situational awareness (Bayouth & Karen, 2019). This study found that the VR environment enhanced a firefighter's cue recognition related to their situational awareness. However, it did not improve the firefighter's ability to predict a backdraft situation. Furthermore, the study suggested that VR can be a tool for firefighters to train on and increase their awareness of potential high-risk incidents (Bayouth & Keren, 2019). VR has also been used to conduct fire safety training in high-rise structures, tracking students' reaction time, operation correctness, and operation smoothness within the given scenarios (Chen & Chien, 2022). The conclusions found that behaviors can change for the better through VR with real-life training events. These research studies, like others, show the range of VR used to study firefighter reactions to many situations.

Technology – Social Media and Digital Applications

One of Generation Z's defining childhood activities was having a digital device in their hands since they could hold it and understand how to use it. They are fluid social media and mobile application users, mainly using their cellular phones and spending as many as eight hours daily online for various activities, including checking their email and browsing their preferred social media platforms (Montiel et al., 2019). Several different applications that can be utilized for training and operations in the fire service include RSS sites, podcasting, Facebook, blogs, and microblogs (Murphy, 2013). Additional social media sites include Instagram and TikTok,

amongst others. Social media for firefighter training is being utilized today. For example, SAFER District uses a private training group on Facebook for information to be posted daily on different training topics gathered online from various training groups and national publication pages. Facebook and other applications specific to training recruits and probationary members are not being utilized. New research needs to be conducted to examine the specific applications of social media for fire training programs.

When used, fire departments must ensure that the content created on mobile applications and social media is relevant to the job and updated. Also, with the pace of the changing digital landscape, finding relevant apps may be a hurdle that fire departments face (Montiel et al., 2019). If utilized, a broader demographic can gain knowledge from social media and digital application utilization. Generation X, who may not be as versed with social media, can learn from Generation Z through reverse mentoring about social media and learn comprehensive use of mobile devices that are becoming essential for professional duties (Montiel et al., 2019). Through the smartphone, all industries have gained an educational tool that is used universally. However, as stated, mobile devices and other technologies are tools, and one-on-one interactions with teachers and mentors cannot be forgotten. Personal interactions with teachers and mentors are sometimes the only way to address emotions, gain perspective, and inspire change (Montiel et al., 2019).

Synthesis of the Existing Literature

There is a gap between the training and learning of necessary fire service skills related to Generation X training officers and Generation Z recruits in the fire service. This gap is easily identified when examining the different studies of each generation's experiences, preferences, and values. While being known for flexibility and continual learning, Generation X lacks

computer skills (Ventura & Yango, 2023). While Generation Z is known for its constant use of social media and other mobile applications, growing up with information at their fingertips, and being connected to the internet almost 100% of the time. (Montiel et al., 2019; Cickovska, 2020; Nicholas, 2019). To close this gap, Generation X needs to embrace new methods of teaching that may not have been considered until Generation Z entered the workforce.

The goal for onboarding practices should be to implement instruction focused on Generation Z's characteristics and expectations to motivate them to join the fire service. Characteristics that need to be accounted for include lack of experience, anxiety and depression, communication skills, and DEI (Schroth, 2019). Utilizing HRM professionals to develop programs directed at the needs of Generation Z may be the best way to accomplish this goal (Benitez-Marquez et al., 2022). However, some fire departments face budgetary confinements that make HRM unattainable.

The use of emerging technologies available for fire service training offers a way for departments to train in situations that are not easy to duplicate and tie into the motivations of Generation Z's want for engagement (Dwivedula, 2020). Studies have shown the effectiveness of virtual reality simulators, and now the fire service needs to connect funding sources to deploy them in departments (Bayouth & Keren, 2019; Chen & Chien, 2022). Social media and other digital applications also offer new training possibilities that may motivate Generation Z to the fire service. Favorite applications of Gen Z, such as Facebook, Instagram, Twitter, YouTube, and TikTok, can be used for training and training reinforcement (Montiel et al., 2019). Utilization of emerging technologies may bridge the gap between Generation X and Generation Z, bringing in new workers and modernizing the fire department.

The fire service must consider new and innovative training techniques with new technologies. The fire service uses mentorships, but reverse mentorships could be a driving force in successfully training Generation Z (Raymond, 2021). Not only does reverse mentoring motivate Gen Z, but it also allows them to become teachers, giving back to the department and educating Generation X about social media and technologies that are foreign to them (Montiel et al., 2019).

The literature shows that Generation Z is different from other generational cohorts, and those differences must be considered when training and onboarding them into the workforce. What was lacking in the literature review was studies relating to the specific and unique needs of the fire service. The fire service is unique from the areas studied due to the various problems firefighters encounter and their requirement to make split-second and potentially life-altering decisions. This work requires intensive training and cannot always be all-encompassing. The fire service needs to train recruits not only in basic and advanced skills but also in critical thinking to ensure that recruits are creative and able to think of solutions that may not have been taught to them.

Summary

Learning is an individualistic endeavor. What works for one person may not work for the next. As teachers, we can only strive to offer the lessons and objectives in the best way we know how so that the material can be learned and later applied. Ultimately, it is up to the individual to be motivated and apply themselves to learn the material.

With a dwindling workforce, fire departments must research and understand new and innovative ways to connect today's youth to the service industry. Through this research study, I better understand Generation Z's motivations and the biases I am working with as a member of

Generation X teaching those recruits. This literature review has shown me the work that the fire service needs to conduct to examine our specific needs. With generational research applied to the fire service, traditional training programs will be able to evolve to embrace Generation Z and future generations.

CHAPTER 3: METHODOLOGY

This study aimed to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service. To understand how they wanted to be trained, a population of Generation Z who had completed initial training in the fire service was interviewed to determine their preferred learning methods. This inquiry led to conclusions about best-practice training techniques for this firefighter generational cohort.

Research Design

The study's research was conducted by talking with individuals from the Generation Z cohort about their experiences and opinions of their initial training academy. From those conversations, conclusions were based on themes that became apparent during the interviews. As there were no statistical data to be analyzed, a qualitative research approach was adopted.

Through those conversations, this research aimed to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service. This was done by answering four research questions.

- Q1: What motivates Generation Z to join the fire service?
- Q2: What are Generation Zs preferred learning methods for fire ground operations?
- Q3: How can fire departments utilize social media and new technologies to aid initial and ongoing training?
- Q4: What processes and techniques might be utilized during the fire academy and probationary period to enhance training and meet employee expectations?

This methodology discusses the step-by-step processes and questions utilized to elicit in-depth and thought-provoked answers to fulfill the research's purpose. It also discusses identified ethical concerns with the research and strategies to mitigate those concerns.

Creswell and Creswell (2018) state that there are three research methods: quantitative, qualitative, and mixed methods. The quantitative approach involves conducting experiments for data sets and statistically analyzing the data to draw conclusions. The qualitative approach involves observing and talking to people and drawing conclusions based on themes generated through those conversations. Finally, the mixed method approach combines quantitative and qualitative research.

Qualitative research designs include generic, ethnography, case studies, grounded theory, and Phenomenology (Percy et al., 2015). Each approach has specific characteristics, such as long-term cultural observations, single-case inquiry, theory development, and how individuals feel about an experience. However, a generic inquiry is appropriate when the researcher is interested in the individuals' opinions about the subject. “Generic qualitative inquiry investigates people’s reports of their subjective opinions, attitudes, beliefs, or reflections on their experiences of things in the outer world” (Percy et al., 2015, para. 11). Furthermore, it has been shown that generic qualitative study has been an effective qualitative design by the studies “Graduating Black Males: A Generic Qualitative Study” and “Mental Health Through The Art of Gardening” (Bell, 2014; Bahamonde, 2019). The generic design was the correct approach for this study as the aim of the inquiry was to investigate the attitudes of firefighters about an event they all experienced and report conclusions based on the themes developed through one-on-one interviews with a defined demographic.

Population and Sample Size

This study specifically targeted Generation Z and their learning preferences. Firefighters born between 1996 and 2010 who have completed an entire onboarding training academy fit this demographic and are the primary target for participants. The youngest members of the workforce from Generation Z may be about 18 years old, being born around 2005. The result is that candidates should have been born from 1996 to 2006.

The second target of the study was the participants' opinions about their initial onboarding training. Each department's onboarding training program or fire academy was evaluated to ensure the correct pool of participants was selected. Four questions were asked of the designated officer of each potential fire department to verify that they conducted a fire academy with their recruits.

- Do you conduct a training academy for your recruits?
- How long (days or weeks) is your training academy?
- What topics are taught during your training academy?
- How many recruits are typically in your training academy?

Answers that removed a department from consideration for participant recruitment included not running a training academy, having a short academy lasting only a few days, and having fewer than three recruits per usual class. This process validated that the departments in question conduct an organized onboarding training academy program. After department eligibility was determined, the officer granted permission to interview several candidates from their most recent academy class who were members of Generation Z. To diversify the candidate pool, this study reached out to several fire departments, including SAFER District, for research participants. A

minimum of fifteen participants were sought from three to five fire departments, depending on the saturation of the data gained from the interviewees (Creswell & Creswell, 2018).

Once the departments and candidates were identified, purposeful selection was used to create a candidate list. Purposeful selection suggests creating a population list to enhance the researcher's probability of thoroughly analyzing the research problem while allowing the researcher the highest likelihood of answering the research questions (Creswell & Creswell, 2018). For population selection, a diverse population was desired. The resulting goal was for there to be a population of 50% male to 50% female, with as much cultural diversity as was available across the potential candidates. Specific ages were not a factor in this population, as all participants must land within the Generation Z demographic. The study also looked for recent graduates from a fire academy for recall purposes, so participants who graduated from a fire academy within the last two years were ideal. Purposeful selection allowed for the best potential success for this research because all the candidates met the criteria that allowed them to answer the research questions from a place of authority on the subject being researched.

Instrument

The instrument for this research used one-on-one interview questions with selected candidates. The instrument was derived to answer the stated research questions:

- Q1: What motivates Generation Z to join the fire service?
- Q2: What are Generation Z's preferred learning methods for fire ground operations?
- Q3: How can fire departments utilize social media and new technologies to aid initial and ongoing training?
- Q4: What processes and techniques might be utilized during the fire academy to meet new firefighter expectations?

The interview questions were then field-tested by individuals with terminal degrees and experience related to the study topic. Potential field testers were contacted by email explaining the research and field testing needed. They were given a choice to complete a mock interview or have the interview questions sent to them for review and to ask follow-up questions. Two field testers were used for the instrument; one via email review with suggestions and the other through a Zoom meeting after a review of the first three chapters of this study. The first individual is a Chief officer with the Plantation Fire Department in Plantation, Florida, and has a Doctorate of Management (DM) in organizational leadership from the University of Phoenix. The second individual is the Superintendent of the D.C. Everest School District in Weston, Wisconsin, and has a Doctor of Education (EdD) in educational leadership from Edgewood College in Madison, Wisconsin. Both field testers offered their suggestions, and revisions were made to the instrument based on their feedback.

The interview questions initially asked for demographic information of the participants to determine a baseline for the population to ensure they attended a training academy and were members of Generation Z. Once their eligibility for the research was established, the initial questions asked about their motivations for entering the fire service. This was done by directly asking them about motivations and events in their lives and initial training that impacted them. The following questions delved into their learning preferences. Questions were asked about what they liked and disliked during their training academy and any changes they would suggest to establish preferred training learning preferences. The following questions were asked about social media and technology used during their training, with follow-up questions about platforms they choose to use and how they use them. The final questions asked about technologies and

strategies that may enhance the training experience. Several suggestions were given to the candidates to think about and comment on.

The instrument included the following questions:

1. Please state your name, age, department affiliation, how long you have been with the department, and when you completed the training academy.
 - a. Observation: Gender and ethnicity are to be documented for diversity reporting.
2. What motivated you to join the fire service?
 - a. Describe any specific life circumstances that influenced your decision.
3. Describe any class topic or specific training that impacted you while attending the technical college during initial fire/EMS training. How was that taught?
 - a. Did the instructor do anything that stood out from the other instructors you have had?
4. What is one thing that stood out to you most during your fire academy experience?
 - a. Why did that particular experience stand out to you?
5. What training event(s) did you like best during your fire academy? How were those trainings taught?
 - a. Why did you like that particular lesson?
6. What training event(s) did you like least during your fire academy?
 - a. How were those trainings taught?
 - b. Why did you not like that particular lesson?
7. Describe teaching strategies used in the academy that you felt were more effective and those that were less effective (e.g., lectures, hands-on activities, tests, self-study).
 - a. Why do you feel this way?

8. What social media tools were utilized during your training academy to enhance your learning?
 - a. How were they used?
 - b. If none were used, what platforms could have been used, and how could they have impacted the learning process?
9. Are you familiar with social media platforms that created a positive training experience for any of your friends or family in a different profession that you would like to see utilized in the fire service?
10. Are there ways you think virtual reality, simulators, or another technology could have helped you understand concepts better during your fire academy?
 - a. If they were used, how were they effective training aids?
11. Describe alternative strategies (e.g., mentorship, reverse mentorship, game theory, blackboard/LMS platforms) you have experienced in any learning setting that you think would work well in the fire service.
 - a. How would they help or hinder learning in the fire service?
12. Is there anything you would like to add to the interview?

The instrument questions were created to ensure the research questions were thoroughly answered. The researcher could have asked the research questions more directly. Still, the questions were designed to allow the interviewee an opportunity to state their likes and dislikes and, in so doing, articulate their preferences for learning the presented material and skills needed for firefighting and EMS job functions. The field testing validated the reliability of the questions to answer the research questions and draw conclusions to address the overall research problem.

Research Process

The research process included one-on-one interviews with the identified population. These interviews took place utilizing the Zoom meeting platform, making the interview location irrelevant. The interviewee dictated the time that the interviews took place to ensure they were available for the time frame of the interview. The Zoom platform also allowed the recording and transcription of interviews for later data analysis.

Department “gatekeeper” officers were identified and solicited to grant permission to contact potential participants (Creswell & Creswell, 2018, p. 185). Once permission was granted, participants were contacted by email requesting that they participate in an interview for the study. The email introduced me, my credentials, my status as an EFO student, the purpose and overview of the study, the time needed for the interview, and the use and explanation of the Zoom platform and the reason for its use: face-to-face interaction, convenience, audio-visual recording, transcription, web browser based. Also included in the email was a timeline for the consent letter to be signed and returned with the participant’s preferred interview date and time. The consent letter in Appendix A and a copy of the interview questions were also attached to the email. The consent letter included an explanation of the confidentiality of the study, confidentiality protocol, and record-keeping timeline. The confidentiality protocol included a password-protected cloud-based file titled “EFO Research” and, within that file, individual files labeled by date; each file had all the associated documents from the date that each interview took place, with the data files being kept for the required amount of time and deleted once the time passes. The interview was scheduled once the consent letter was signed and sent back.

Due to the conclusions of this study potentially being applied to the SAFER District, I conducted these interviews first to gain an initial impression of the coding and themes that might

be used and analyzed later. Using these codes and themes, the data collected from interviewees from subsequent fire departments was categorized, and notes were taken when these identified themes came up during the interview.

The following observation and interview protocols were employed to ensure that each interview took place in a similar manner.

Observation Protocol

During the interview, a sheet of paper titled Observation Protocol, found in Appendix B, was kept for notes. At the top of the paper, the date, time, interviewee name and department, and interviewer name were recorded. The paper contained three columns: two for observations and one for notes. Observation column one included documentation of any outward observations about the interview process. This column documented background distractions, whether the zoom background screen blurred, a virtual background was used, whether the video was on or a blank screen was used, the time of day the interview took place, where I was located, my outside distractions, and anything else that was observed or that may have influenced the interview. Observation column 2 included documentation of any emotional or physical response the interviewee had to the questions being asked. Column 3 included any relevant documentation notes taken for each question response by the candidate.

Interview Protocol

To ensure that the research could be duplicated, the interview protocol was utilized for every participant, and interview questions were not deviated from by the researcher. Any time more information was needed, probing questions were used to elicit a more in-depth response to the questions. These probing questions were in the form of, “Can you elaborate on that?” or “Can

you tell me more about that?” This protocol could be duplicated by utilizing another online meeting platform or conducting in-person interviews.

Zoom sessions were created and controlled by the researcher. Due to the cost of Zoom for sessions over an allotted time and the limited recording and transcription without a paid subscription, the researcher paid all associated costs of the interview platform. Once the date and time arrived and both parties were signed into the Zoom session, the participant was granted permission to record the Zoom interview session for transcription and analysis. Once the participant granted authorization, the record button was applied in the software.

After the Zoom session recording started, I introduced myself, my credentials, and my status as an EFO student. I then stated the purpose and an overview of the study. I then explained that I would ask ten questions, with some follow-up questions as necessary. After the introduction, I asked the participants if they were ready to begin the interview. Upon gaining consent, I asked the interview questions outlined in the instrument section, starting with the opening question to verify the interviewee’s credentials and following with the remaining questions.

Once the interview was concluded, the participant was thanked for their time and answers to the questions. I informed the participant that I would email them a transcription copy of the interview within the next day and restated the confidentiality of the study. The participant was asked if they had any questions and if they had no further questions, the recording was stopped, and the Zoom session was ended. Those who asked about the study's results were offered an email copy of the abstract from the paper or a copy of the paper itself, whichever they preferred.

After the interviews were completed, the data was coded, and themes were developed. The researcher completed this as the data from the observation protocol and interview transcripts

were compiled. Coding can be completed in a number of ways, from the utilization of software programs to coding by hand. For this research, coding was completed using the QDA Miner free computer software. Using a bottom-up approach, the data was transcribed, entered into the software, read over thoroughly to identify general topics broached through the conversations, coded by framing word associations from the like topics found in the data, established themes from the source coding, and the themes were analyzed and reported on (Creswell & Creswell, 2018).

During data analysis, it was understood that the data gathered may have been limited due to the participant's age and experience. This was due to the participant's potential lack of experience or knowledge of alternative learning and teaching strategies or experience with advanced technology for education purposes. All of the data collected was included in this study, including any limitations that might have been realized.

Ethical Considerations

Using the researcher's home fire department created potential bias, as the Deputy Chief interviewed members of the SAFER District who had recently completed their training academy and were still on probation. As these members were still on probation, there was potential for the participants to answer questions that they thought the Deputy Chief would want to hear and not be honest with those answers. Every effort was made to ensure that those interviews were conducted utilizing Zoom so that interviews took place on a neutral site. During the Zoom interview, no uniforms were worn, and no ranks were used. Additionally, the interview questions were asked as written and did not deviate from talking about shared experiences, potentially skewing the interview questions further. During the introduction, I was clear to the

SAFER participants and all participants that I was looking for candid answers to improve training programs.

Outside of the SAFER candidates, utilizing Zoom with all participants ensured that they could choose where they were located when conducting the interview and that the interview setting, online, was a neutral space. While discussing the purpose of the interview, the intent to improve training for fire academy candidates with potential spillover of techniques into everyday training was emphasized. This showed that all participants had a common interest in the study. To ensure transparency, interview transcripts were sent to participants, and an offer to email them the abstract or the research paper was made once completed. Finally, during the interviews, the interview protocol was kept precisely to prevent the researcher from making statements that would influence the participant.

One key component of the entire research project was the steps taken to ensure the confidentiality of the participants. The informed consent given to all participants outlined the steps taken to maintain confidentiality. No names or specific identifying characteristics were used while reporting the results. Each participant was assigned a number, which was utilized for reporting. All documentation, including the signed consent form, interview transcript, notes sheet, and other paperwork, was placed in a Google Docs file. A file labeled “EFO Research” was created and password-protected. In that file, a file was created for each participant. The files were labeled with the random numbers assigned to the participant, and the documents for each participant were in those files. The main file was kept under password protection for the required time, after which the file and all its contents were deleted. This procedure was outlined in the informed consent form given to each participant, and their confidentiality was maintained. Through the use of this confidentiality plan, there should be no negative impact on the

participants. If any negative impact would befall a participant, strategies would immediately be worked on with their training officer to mitigate those circumstances.

My personal bias is toward the training program at SAFER. I need to ensure that my conclusions are based on the actual results from the study rather than on what I want the results to be. This research, as stated, is a discovery of the best possible training techniques for Generation Z. I have personal beliefs to that end, but the research will speak for itself. By reporting the results as presented, I will add integrity to the study and confidence from any peers who read it that the results and conclusions are fact-based and will improve training programs.

Summary

A generic qualitative research design was selected to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service. This was done by interviewing 15 Generation Z firefighters from different fire departments who recently completed a training academy. The questions utilized for this process were created by the researchers and vetted through a field testing process. Each participant was asked the same questions in a Zoom session using observation and interview protocols. This was done to diminish the potential for any bias in the study. The questions created for the study addressed each research question, attempting to discover answers to the research problem.

The methodology described in this chapter will be applied and published in Chapter 4, with results gained from participant interviews. Chapter 5 will contain conclusions aimed at answering the research problem and questions while fulfilling the purpose of the study.

CHAPTER 4: STUDY RESULTS

Introduction

15 participants from six Wisconsin fire departments were interviewed. All the participants were members of Generation Z, participated in organized training academies within the past two years, and were employees of a career or combination fire department. Five of the participants were female, while 10 of the participants were male, resulting in a 33% female to 67% male ratio, with 100% of the participants being of caucasian ethnicity. This allowed for diversity within the sample size that was provided to the researcher. Figure 1 shows the gender comparison and age ranges of the candidates, while Figure 2 shows the number of participants from each department. Interviews were recorded via Zoom and transcribed via the Aiko phone application. All data was then input into the QDA Miner Lite software program for coding and theme assignment.

Figure 1

Participant Gender and Age Comparison Graph

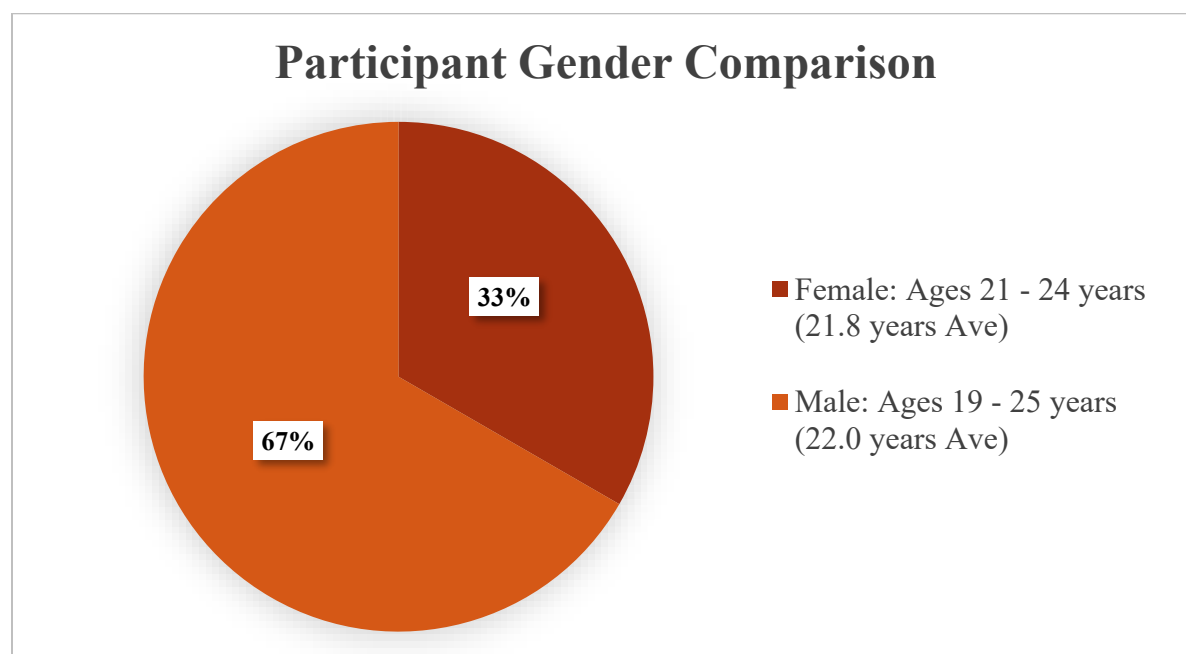
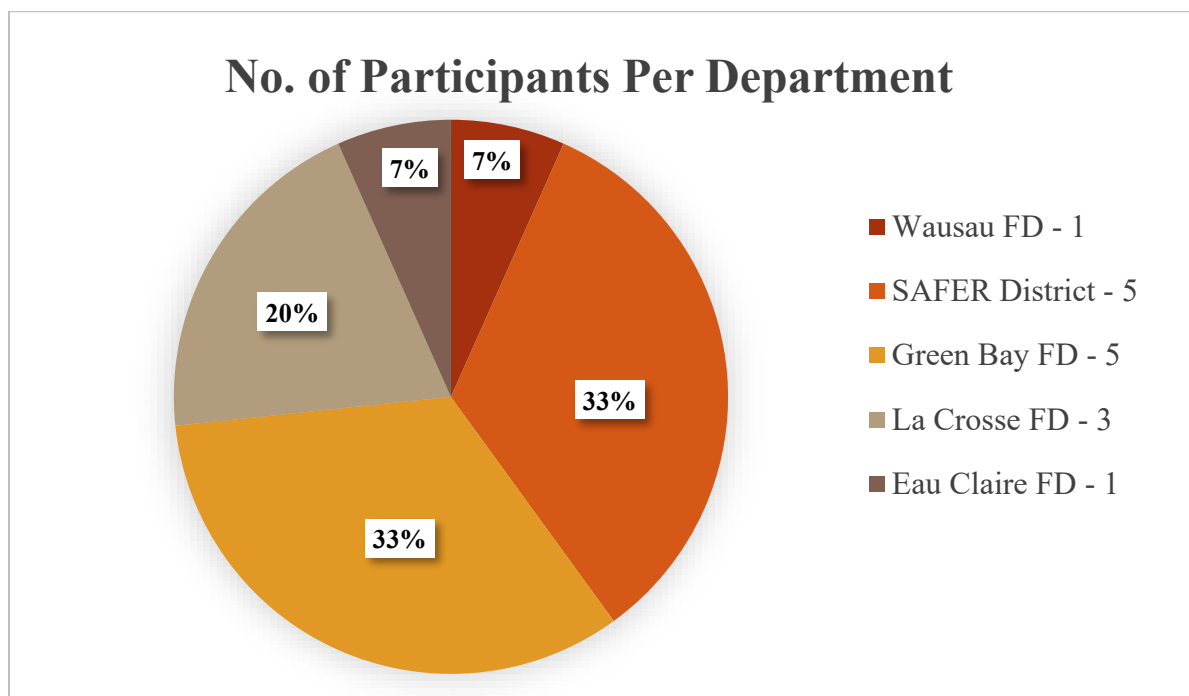


Figure 2

Number of Participants per Department Graph



The goal of this research study was to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service. This was achieved by developing four research questions:

- What motivates Generation Z to join the fire service?
- What are Generation Z's preferred learning methods for fire ground operations?
- How can fire departments utilize social media and new technologies to aid initial and ongoing training?
- What processes and techniques might be utilized during the fire academy to meet new firefighter expectations?

Research Results

Upon completion of the interviews, eighteen themes were identified that answered the four research questions. Table 2 provides the themes, counts of times the themes were coded, percent of the time the themes were coded, the number of cases the theme appeared in, and the percent of cases the theme appeared in as they correlated with the research questions.

Furthermore, the results have been reported in no particular order, as themes were identified in the order they appeared while conducting the interviews. The interview protocol was followed, and the results were documented throughout the next sections. The observation protocol was also followed, but nothing significant was documented throughout the interview process that affected the interviews. This resulted in no reporting of the observations from the research process.

Table 1

<i>Identified Themes</i>				
Theme	# Count Theme Appears (Total)	% Theme Appears (Total)	# of Cases Theme Appears In	% of Cases Theme Appears In
Research Question 1				
Family (Theme)	7	3.2%	6	40.0%
Help people (Theme)	8	3.6%	6	40.0%
Peers/Mentors (Theme)	3	1.4%	3	20.0%
Job Expectation (Theme)	8	3.6%	8	53.3%
Physicality (Theme)	5	2.3%	4	26.7%
Research Question 2				
One-on-One (Theme)	12	5.0%	7	46.7%
Hands-on (Theme)	52	23.6%	15	100.0%
Lecture (Theme)	23	10.5%	12	80.0%
Scenario Based training (Theme)	11	5.0%	7	46.7%
Show and tell (Theme)	3	1.4%	2	13.3%
Tests (Theme)	12	5.5%	8	53.3%
Self Study (Theme)	3	1.4%	2	13.3%
Research Question 3				
LMS Platforms (Theme)	8	3.6%	4	26.7%
Simulators (Theme)	7	3.2%	7	46.7%
Virtual Reality (Theme)	12	5.5%	12	80.0%
Social Media Platforms (Theme)	23	10.5%	13	86.7%
Research Question 4				
Mentorship (Theme)	12	5.5%	10	66.7%
Training Expectations (Theme)	12	5.5%	7	46.7%

Research Question 1: What Motivates Generation Z to Join the Fire Service?

The first research question aimed to understand what drives Generation Z to choose a career in the fire service. Five themes were identified during the interviews, with the prevailing themes being helping people and job expectations, which included topics such as camaraderie, the fast-pacedness of the work, and the desire to help people. Other themes that surfaced included life experiences, the physicality of the work, and peers/mentors who suggested firefighting as a career choice.

Theme One: Family

Six of the 15 interview participants reported that family was a motivating factor in their decision to join the fire service, and this theme appeared seven times. Participant #1 said they joined the fire service because:

I had family members already in the service, growing up, on a volunteer department; however, when I joined in high school, I joined as an EMT. I really was pulled towards being the solution to many people's problems, being the aide, being the help, feeling like my role was necessary ... [then] my mom had an accident when I was in [paramedic] school that really changed how I view trauma as well and the fire service and how we all kind of worked together ... So that was one of the other things that being a part of that really solidified that this is the job I need to be in.

Participant #6 echoed their family connection to the fire service, stating:

My family was probably my biggest motivator. Both my parents worked in emergency services for a number of years, and I had an interest in firefighting since kindergarten.

That interest took full effect when I became a high schooler.

Family remained a central theme for Participant #7, who added:

The big thing is my dad is also a firefighter for the city, so obviously, I've been around the fire department pretty much my whole life, so that was a big thing of just being around it. I got to be around the guys. I got to learn about the fire service pre-college and pre-high school and stuff like that.

Participant #9 stated, "My family motivated me, and I was looking for a career change."

Finally, when speaking of their family influence, Participant #10 shared:

Well, it is kind of a family tradition for me. My old man was also on the fire department, but when I was a kid growing up, visiting him at the fire station, seeing the day-to-day life, seeing all those guys operate, I just couldn't imagine myself doing a job that I wouldn't enjoy more than that, kind of seemed like the best job for me.

Theme Two: Helping People

A desire to help people was one of the leading motivations for Generation Z to join the fire service in the interviewed sample. This theme appeared eight times through six, or 40%, of the participant interviews. When speaking about helping people, most participants kept their comments short and to the point. Participant #10 stated, "I also just enjoyed helping other people out and spending my time with that," while Participant #15 added, "Getting to help your community and providing such a special service to people is awesome." Keeping their comments short and to the point, Participant #3 offered, "I had always wanted to be involved with public safety ... I just really like to be able to help out and make a difference to the community ... I just kind of wanted to be able to help people. I guess."

The desire to help people may be considered a calling that starts early in life. Participant #4 stated, "I have always wanted to help people, even when I was little. All my 'when I grow up'

careers were healthcare jobs.” The motivation to help by working in the medical field was a theme that continued with Participant #5, who shared:

I love helping people; I've always wanted to do something in the medical field, [with] EMS and fire, really like a line they work together a lot, and [with] fire, now that I've done the training and everything, I'm starting to absolutely love it!

Participant #11 added:

Well, I've always truly wanted to be a firefighter since I was a kid. Throughout high school, I found more interests and explored different things, but I came back to [firefighting] because it is a job that has a purpose. I have faith in God, and I feel like I am doing his work and [firefighting] is one of the few jobs I can say that about.

Theme Three: Peers/Mentors

Peers and mentors influencing Generation Z toward a career in the fire service appeared three times in three of the 15 completed interviews. After pursuing other careers and looking for something faster paced, Participant #2 stated that their motivation to join the fire service came from a firefighter one instructor: “I guess just during my initial like fire one, at that time, my instructor had worked for SAFER [District], and that kind of inspired me to go the direction I did department-wise.” Participant #3 added, “One of my friends ... was a volunteer firefighter, and he was telling me about it. I had never heard of volunteer firefighting, and I realized that this is where I wanted to be, and this is what I wanted to do for a career.” Lastly, a high school mentor motivated Participant #8 to join the fire service as they added:

It was a wrestling coach of mine that is in the fire service. My junior year, ... he started asking what I planned on doing in the future, and he kind of showed me the fire service path, allowed me to do some ride-alongs with him, and I got interested in it, joined the

volunteer service, and then ultimately went to school for [firefighting] later in high school.

Theme Four: Job Expectation

Job expectation was the biggest motivational factor across all interview participants. Eight of the 15 interview candidates spoke about their expectations for the job and how they were drawn to the fire service based on those expectations. Participant #2 stated:

I had originally started on schooling in the health field in a different career interest, and then once I decided that that one wasn't the most appropriate for me, I was looking into other options and [EMS] seemed the most appropriate based off of my lifestyle, the fast pacedness.

Interacting with firefighters at a young age influenced two of the participants as they gained perspective on the details of the job through those interactions. Participant #3 stated:

I think it's just something that I thought was really cool growing up as a kid. I always looked up to firefighters [and] police officers. I remember going on the kindergarten trips to the fire department and stuff like that, and it was always, there was always somebody to look up to, and I really wanted to be that.

Participant #5 added:

When I was in middle school, we had a tour of the local fire department, and we got to talk with the employees there and the firefighters there, and knowing and talking to them really made me, like start looking more into the fire department and fire service.

The team aspect of the fire service was another motivating factor for two interview participants who played team sports in high school. Participant #14 stated:

In high school, I've always been part of teams and sports, and I've always liked that aspect, and I noticed the fire service has a very team and family-orientated work life, and that's what kind of really motivated me to search farther into the fire service.

Participant #15 added:

I also played football from a very young age up until college, and I loved the team aspect of it. Firefighting combines so many unique areas of work. It is a hard job with lots of manual labor and you always work with your team to get a job done.

Another motivating factor is the camaraderie expectation that is expressed by many firefighters. The expectation of friendship and camaraderie was a motivating factor for two of the interview participants. Participant #4 stated:

I think the brother/sisterhood plays a huge part on my decision. It's in all the TV shows, the calls may be far-fetched, but the bond between the crew is spot on, and I think that makes the job worthwhile as well.

Participant # 10 added:

For me, one thing I've always wanted in my life was the brotherhood of the fire department, and I was like, my first taste of it was in the recruit academy.

Finally, the last participant was drawn to the expectation that every day is different and every call is different. That unpredictability of the job drew them in. Participant #7 offered:

... also, the big thing for me was just that every day is different. You walk through the doors, obviously you have some sort of a set schedule, but that can be thrown off by calls or whatever, so that's probably one of the biggest things is that just no two days are the same, and however long your career is.

Theme Five: Physicality

The physicality of firefighting influenced five of the interview participants. They spoke about how the physicality of the job drew them to the fire service. Participant #11 stated:

On the fire side, safety and survival was probably one of the bigger impacts. Just like the physical, it really outlined the physical standard that you should be at as a firefighter to be able to not only save yourself but others [too]. In going through that class, [it] was really eye-opening to that and not only all the techniques that can be used.

Participant #15 added:

I have worked manual labor jobs all of my life. I have always valued hard work, and what it does for your character, and how it positively affects all areas of life.

The remaining three participants spoke about the physicality of their training academy. They all spoke to the fact that fitness is important to them and how the emphasis on fitness during their training academy motivated them. Participant #10 stated:

I'm also kind of a big workout junkie, so whenever we go to the fire academy, the first about, hour and a half of our day, we would spend working out, and doing whatever our captain told us to do, which I really appreciated.

Participant #11 added:

I think it was just the morning workouts. We have a CrossFit gym that allowed us to use the facility. It stood out to me because it seems like, at least, my prior experience in the fire service has been, that physical fitness hasn't always been the top priority.

The final thought by Participant #12 offered:

One thing that stood out, I would say, was probably the focus on fitness. Every morning when we got there, we did an hour of fitness training every single day, no matter what we

were doing that day. That really stood out to me because they're promoting fitness which to me is very important.

Research Question 2: What Are Generation Z's Preferred Learning Methods for Fire Ground Operations?

As department officers train the next generation of firefighters, catering their training programs around the candidates' preferred learning methods should be a priority. The second research question aimed to investigate what training methods Generation Z preferred from this perspective. Seven themes were coded, with the prevailing theme being hands-on learning, which all 15 participants expressed.

Theme Six: One-On-One

Seven of the 15 participants stated that one-on-one learning was helpful when trying to understand fire ground concepts. Participant #1 stated:

I think one of my instructors really did single me out and he worked really confidently on person to person. So going up to the moment of that live burn like giving you the confidence and personally talking to you and personally like putting his hand on my shoulder and pushing me into that room and [saying] like 'come on you got this' kind of thing. Just that encouragement of giving you that confidence because this is something that you're going to need a lot of confidence, and no fear, and you can't really self doubt yourself, and he really gave me that.

When considering their training academy, Participant #1 also stated:

My training chief that trained us in fire was very personable. He really reminded me of that fire instructor, so I remember him making sure that we felt comfortable making sure that every topic he went over, we all had an opportunity to show our skills and to really

kind of show off what we knew and ask questions. The biggest thing, was like when we were throwing ladders; I'm quite short. I'm only 5' 3", so him showing me how he [threw ladders], that really stood out to me because there's no firemen anymore, so [women] can do this. We are allowed to do this. We are forced to do this, so he showing me that was something that stood out. Just kind of again like singling me out, making me feel like 'you can do this.'

Participant #4 offered:

It was reassuring to have the instructor next to us, in case we did panic, in time to help. When I had to go from the ground ladder to the roof ladder, I was sweaty, lightheaded, and on the verge of balling my eyes out right there on the ladder in front of my whole class. My instructor went up to the roof before me, knowing I needed some coaching. He was up there talking about ice cream and weekend plans, just anything to distract me from passing out in fear. With the distraction and patience from him and my classmates, I was able to complete the ladder training.

Participant #6 added:

The willingness and understanding [that] more senior people on the department have. It can be frustrating teaching ways you know, like the back of your hand, to someone who is new to the department and maybe even the fire service. I feel like all the people who helped during the academy were constantly giving us tips and tricks of how to do things but still being in the department protocols.

Participant 7 stated:

The training captains that we work with; I would say that the care and the passion that everybody showed when we were there. We got to do a lot of training with on-duty

crews, and just that everybody was there to help us, everybody was there to see us succeed, to give us their own kind of twist or or points on how maybe we could do this or that easier. So that definitely was something that stood out, of how welcome that we felt, or that I felt, and that it seemed like everybody there was rooting for us and it was nice to get a little bit of a different opinion on different skills because everybody obviously does some things a little different than somebody else.

Participant #14 echoed the others, stating:

The willingness to teach us. It wasn't, we weren't expected to know everything. We were expected to know a little bit and understand a little bit, but everybody was there willing to give us tips give us tricks, knowing that we don't have a lot of experience and that we're here to learn, and as long as we put our best effort forward, they're going to help us.

Participant #11 expressed his appreciation for the effort his trainers made, stating:

I can't think of anything like that, but I can tell you that when someone takes the time to show me as an individual or the class as a whole, the correct way to do something, that's what I appreciate.

Theme Seven: Hands-On

Hands-on training was overwhelmingly the most sought-after training method. This theme appeared 52 times and was discussed by all 15 of the interview candidates. Each candidate may have said it a bit differently, but as Participant #2 stated, "I would say the hands-on was most effective. It gives you a real sense of how things would be." Participant #4 stated:

We walk, crawl, ran, everything ladders. We started with just climbing up and down the extension ladder, multiple times until I couldn't feel my leg muscles. Then, we worked on leg locking multiple times and carrying tools up and down multiple times. So when the

time comes, I'm not flustered and uncomfortable with what would seem to be a basic fire task. Now, a year into my career I can climb a ladder with less fear, I have cut vent holes in training, I have practiced VEIS (Vent-Enter-Isolate-Search) off a ground ladder. All things I don't think I would have been able to do, without at least four mental breakdowns, if we didn't babystep the trainings. Being able to start back to the basics and build up in real-world situations has been the best type of training for me and is what stands out.

Participant #5 stated:

I really loved actually getting to put my hands on the [vehicle extrication] tools, and I cannot remember my instructor, but he was able to get us a car that we could tear apart and really go like deep into, like getting all the doors off, getting the roof, and breaking the windows, and attaching everything

Participant #7 offered:

Technical rescue ... we got to do trench rescue, confined space, and rope rescue, and basically, there was no time spent in the classroom ... I don't learn the best from sitting in a classroom and death by PowerPoint and things like that so that class was literally all hands-on we did nothing in the classroom. Definitely, obviously, most effective I would think would be hands-on. Like I said, we would have a classroom portion and a hands-on portion, and I was a real fan of the hands-on portion because you got to go out there, you got to do it, you got to make mistakes out there when it really didn't count, and then they would give you pointers of how to avoid [the mistakes].

Participant #10 felt the same, stating:

Most effective, for me, like I mentioned previous, would be hands-on. I'm also quite a big fan of hands-on learning, and then testing your knowledge afterwards, with also hands-on, so let's say with car extrication, if someone were to say, do a dash roll for me, you know that would be the test, actually physically doing the activity.

Participant #12 stated:

Well, I think hands-on is by far the most effective at least for my learning style. Um, getting out on the training ground and just kind of getting to do it, being shown how to do it, and then if you make a mistake just learn from it. I think that was kind of the most effective for me.

Not all the hands-on was well received. A few of the interview participants stated that when the training was repetitive, it had a negative effect, and the participants felt like they were being punished instead of being engaged and learning. Participant #1 stated:

We repetitively did hose loads because one or a few excuse me of my peers within my academy were having difficulties and it is a group effort but it was quite impactful to me to know that I've done this three or four times I get it but now we're doing it three days in a row and if you can't throw a hose and you can't pack a bed then why should I almost be sitting here getting looked at getting punished not punished but you know it was that was something that I did not feel necessary.

Participant #9 agreed, feeling that the repetitive nature of some training was counterproductive. They stated that the part of his academy he did not like included "Engine company operations, pulling hoses and flowing water for a week straight."

Theme Eight: Lecture

The participants had mixed feelings about attending and participating in lectures. Some disliked lectures altogether, while others understood their need, and some liked lectures when their instructors made them interesting. Theme three appeared 23 times and was discussed by 12 of the 15 participants. Participant #4 stated:

I think anything in the classroom I liked the least. I don't do well with lectures, or reading the textbook, or taking tests. Lectures are hard for me to stay focused during. I think anyone in the fire service learns better hands-on. Classroom days were better when different chiefs or instructors came in and told the class about some calls or examples from their education. We could usually take away something from real-world experiences that other people shared with us.

Participant #7 stated:

Definitely, I wasn't a huge fan of the classroom days. Obviously, it's a requirement that needs to be done, so usually we would, we would talk about what we were gonna do for the day. For example, probably high rise [operations] because we spent hours in the classroom talking about just high rises and how we would go about doing that. Reviewing the SOG for that and stuff like that and we would talk about like target hazards and stuff that are in that are in the city. It probably was one of the least liked was the classroom portion of that just due to the fact that it was long, it was extensive, and it was a lot of stuff to process and kind of remember in a short amount of time.

Participant #10 echoed their sentiments, stating:

I'm not a huge fan of PowerPoints and classroom settings in that regard, just because I feel like our job, I'm sure you know just as well as I do that, our job is a lot more physical

than it is, I don't want to say it, it's more of a physically demanding job, so the more you use that, your physicality to do the job, the better you'll be at it, in my opinion. Well yeah, probably lecture would probably be my least favorite.

There were some who saw the value in lectures, along with those who enjoyed some of the lectures. Participant #13 offered:

Most of our academy was hands-on and lectures, and I kind of do good with both of that because I like kind of talking through whatever we're doing for hands-on training first.

Participant #3 agreed that lectures can be good, stating:

[Our instructor] taught us our cardiology, like EMT cardiology, and listening to him talk about that was just awesome to me. It's now like my number one favorite topic, going to paramedic school. I just like learning about it.

Participant #6 gave their specific take on the instructor more than the lesson, and how that can influence the like or dislike for lectures, offering:

I really enjoyed my EMS instructor because she made class fun, and I thought she was a very good instructor. My first fire instructor was pretty dry, and I often had a hard time focusing because he pretty much read word for word with the PowerPoint.

Theme Nine: Scenario-Based Training

Scenario-based training appeared 11 times and was mentioned by seven of the 15 participants as an effective learning method. Participant #1 appreciated the real-world experience as part of their training, stating:

We do ACR (Advanced Cardiac Resuscitation) instead of ACLS (Advanced Cardiac Life Support) for cardiac arrests, and that was taught first in a classroom setting, and then next, we broke it down in a hands-on fashion of responding as an actual medic unit

instead of just, okay, here's all of your things you're just going to do it. Instead, we actually took him out of the ambulance, walked to a scene, and then each [of us] took turns leading the call and taking part. That was really solidifying, that was pretty nice to be able to actually act as a medic instead of acting hands-on in a classroom setting.

Participant #4 appreciated simulating high-rise operations and combining that with the physical aspect of the job, stating:

Early on, we had to run around and up the stairs of the tower fully geared up and on air. We ran until we ran out of air. The purpose of this was to learn our gear and to feel what it would be like. We paid attention to the lights in our masks, the alarms that went off, the PSI dropping, all until we ran out and could feel our masks tightening around our faces. We [also] had a lot of blacked-out mask trainings with the instructor in the obstacle room to throw a cage on us, to pretend the floor collapsed, pretend that we got stuck and couldn't self-rescue, or to call a mayday.

Participant #10 also appreciated the high-rise training. They offered:

For our high-rise operation, [our training officer] actually rented out a parking garage for, I believe, a full day, and we would just practice utilizing the Denver Packs that we have in the apartment and just using how to properly set them up, what our limitations are with them, what would be best in what scenario, and actually showing us how we would do it, rather than just sitting down and explaining it to us.

Participant #7 summed up their thoughts about scenario-based training, stating:

So the best thing that I liked was scenario days. So, basically, it was a day from 7:00 a.m. to 3:00 p.m., and we would basically just run scenarios; a lot of those scenarios were based off of actual fires that have happened in the city.

Theme 10: Show and Tell

A show-and-tell teaching strategy was one of the most disliked teaching strategies explored by the interview candidates, appearing three times by two participants. Participant #2 offered that they didn't care for this part of the academy, offering:

I would say familiarization with like apparatuses, that's something that applies to me more on the job as you're actually using it where someone just lightly talking you through where things are and what apparatuses doesn't really sustain. [It was] kind of just a walk through I guess. Someone went through each truck and said this is what and where [tools] are. [They] open doors showed you where things were, and I guess that doesn't really retain for me from my learning as well as the actual application of it.

Participant #13 agreed with that sentiment, describing an ice rescue training that could have been better if performed during a different time of year. They stated:

Water rescue wasn't the best because we didn't really have it. We did it in February, so it was a bit cold to be going out on the water, so [for] the ice rescue there wasn't really a lot of ice with how warm the winter was. So it was kind of more like kind of showing it on dry land versus actually being able to go out and do it, and like get that hands-on training, that was kind of the only bad thing about it.

Theme 11: Tests

The participants had mixed feelings about participating in testing their acquired knowledge and using the results of those tests to help them learn the material. As a theme, tests appeared 12 times, being discussed by eight of the 15 interview participants. Those that felt it helped them, such as Participant #3, stated:

I think having unit quizzes and stuff like that at the end of each chapter is also really helpful. So you can kind of gauge where you're at, and a lot of my classes, they made it where you could take it as many times as you wanted to so you could kind of keep tracking yourself.

Participant #7 also appreciated tests so that they knew where they stood on their retention of the material being taught:

We had a couple of written examinations that were parts of certain curriculums like we had an engine company one and we had a truck company one, which I actually like because you kind of got to see where you should kick in a little more effort to review either reviewing tactics of how this goes on the engine company or just specific areas like that, so I thought that was really effective.

The remaining participants agreed that they did not like tests, with similar comments that echoed Participant #9, "I don't like lectures, tests, or self-study." A few participants spoke of their test anxiety as a reason tests are not affecting their learning processes. When asked about what they disliked from their academy, Participant #4 stated:

100% the written tests. The written tests accomplished nothing for me. They were never worded right, I always read too much into the question, and I would always get held up because I couldn't just figure [out] the question.

Participant #5 agreed that testing did not accomplish anything for them either and added, "I have horrible test anxiety; testing does not ever end well for the most time."

Theme 12: Self-Study

Self-study appeared three times and was discussed by only two of the 15 interview participants. One participant liked the self-study aspect and applying that knowledge immediately. Participant #3 offered:

I think you can't really get away from the reading and the lecture aspect of it, but I think that that's something that made a big impact for me, and specifically in paramedic school, was [assigning] the readings before the class day and then doing practical right after it because you're getting both sides of the coin right away.

Participant #9 felt the opposite about self-study being a method of learning for them, stating:

I don't like lectures, tests, or self-study. We were assigned SOGs to read on our own. I hate trying to figure out a message on my own from reading and want to know why things are written the way they are.

Research Question 3: How Can Fire Departments Utilize Social Media and New Technologies to Aid Initial and Ongoing Training?

Research question three investigates some of the findings of the literature review. As a review, the social change and technology boom of the late 1990s and early 2000s created a generation that prefers problem-solving, real-world applications - such as studying case studies or working for real clients, teamwork, and internet use while staying connected nearly 100% of the time on their mobile devices (Nicholas, 2019). They utilize social media for immediate learning, relying on mobile applications like YouTube. These results directly investigate those sentiments from a fire service perspective. The themes identified included the use of learning management system (LMS) platforms, simulators, virtual reality, and social media platforms for learning.

Theme 13: LMS Platforms

LMS platforms are being used by schools and fire departments alike. Platforms like Canvas, Blackboard, and Vector Solutions have appeared in fire department and technical college training regimens nationwide. The LMS platform theme appeared eight times across four interviews. Participant #1 didn't view LMS platforms as helpful in their training, stating:

We used the state website, and we did some things on Target Solutions, but the whole department uses Target Solutions, Vector, I believe it's called, and that was just to kind of track our progress and to upload any certificates, [but] there is some training on there.

When thinking about how LMS platforms could enhance her training experience, Participant #3 continued:

During medic school, I can't remember the name, but there were some online lectures and some interactive video. That could have been definitely used for some of our EMS skills also, maybe some like online testing of, you know, go take this multiple choice test on our protocols. I think that could have definitely been in the a plus. We're so used to being on canvas or being on blackboard or being sent a link to take a test where they can take our results and kind of look at us singularly that probably would have helped. Map mods [also], having some type of online or some type of document that we could go and look at we use a lot of like our O drives our city's [computer] drive, but that's just a bunch of forms, so something that's interactive.

Participant #5 agreed that the use of an LMS platform could be helpful:

I think one that would have been extremely helpful would be either like a blackboard or like a Google Classrooms or something so then we could get those lectures and the slides that we did during the academy days into one spot so we can kind of look back and see, I

don't remember you know what this tool does or how we would use this or what different ladders we would use, we can look back and see you know kind of refresh ourselves even outside the academy.

Participant #3 agreed that LMS platforms could potentially be helpful:

Really the only thing I have experience with, I guess, is blackboard, which I could see having a place, but I mean, if you have homework assigned and stuff like that, it would be, but I don't know. I thought that the PowerPoints and the slides were really good and stuff like that. So yeah, I can't really think of anything, unfortunately, specifically I guess, other than Blackboard.

Participant #13, however, felt indifferent about the use of LMS platforms:

The most we've used, which I think is Vector Solutions, and like that LMS platform that's like the most we kind of use of those in terms of training whenever we have like a slight tweak to a SOG or SOP the BC (Battalion Chief) in charge of that will post some training on Vector Solutions or we have like monthly training like this past month was vehicle extrication so they posted a couple of videos to check for that, and then we'd have like company training for the month that we'd go out and do, but other than that that is about the most we use of that.

Theme 14: Simulators

Simulators as a theme appeared seven times, being discussed by seven of the 15 interview participants. Simulators were not universally used during any of the participants' training academies, but they did feel that their use would be helpful with some of the lessons being taught. Participant #1 said:

They have a simulator for nursing, so they do clinicals but before they do clinicals they have like a real-life mannequin and everything that they go into, and I remember some of that happening in EMT school and some in paramedic school, but we weren't using a ton of that during our academy.

Participant #8 added:

Yeah, so with fire and EMS, I think with the advances in especially virtual reality and some of the simulators that you can use, I think that would have helped us be able to get into more real-life situations versus fires per se built by pallets and straw. Granted, it would be expensive, but I think if you could get your hands on something like that, it would be very effective.

Participant #10, having some limited experience with a simulator training mannequin, stated:

We had a, at the very tail end, Aurora allowed us to use their training dummy. I don't want to call it that, but it is essentially, I'm sure you've seen them, it's the higher tech training dummies where they can react to your medications you give and certain procedures you do, and I thought that was pretty cool and pretty thought-inducing.

From the fire training side, Participant #7 offered:

Fire extinguisher simulator that basically runs on an iPad, and you have like an actual like prop fire extinguisher. Granted, it's made more for community members and stuff like that, but if we had that at the time that we that we were in the recruit academy, I think that would have been a cool thing to do. Obviously, it's pretty easy to work a fire extinguisher, but honestly, it's something that we don't do a ton, so I think that would be good if we if that was there when we were there to just use it and I mean, you get to be

able to pick from any extinguisher that's available and you can actually like start stuff on fire that's in the pan of the of the iPad camera.

Participant #3 added:

I think one of the Captains was telling me about the whiteboard we have upstairs that can do simulated burns of any building that is in our district. I think something like that would have been really helpful for fire science, watching flow paths and if you do this variable, this will happen.

One participant thought that simulators and technology can't replace real life and would not work well with training in any way. Participant #9 stated, "I don't think any technology is realistic enough."

Theme 15: Virtual Reality

None of the participants had used virtual reality (VR) for training in the fire service, and their experience with virtual reality was unknown. Still, VR as a theme appeared twelve times through 12 of the 15 interviews. The thoughts on VR as a training tool and a way to learn fire ground operations were mixed. Participant #4 was the most excited when asked their thoughts on using VR for training:

I wish I could try a fire VR simulator! I have an Oculus, and I've been searching and searching for some type of fire simulator. I think a fire VR simulator would be very helpful. Getting to see graphics and play/act out a fire scenario would be sweet for some of the more dangerous scenarios.

Participant #6 added:

I 100% agree with simulators or VR training techniques. I think these are a great way to introduce techniques in a controlled situation. I feel that, especially in the beginning,

people may be very hesitant with some of these skills. Using this technology can also be beneficial because people can really focus on technique.

Participant #8 also talked about the effectiveness that VR could have with training:

Yeah, so with fire and EMS, I think with the advances in especially virtual reality and some of the simulators that you can use, I think that would have helped us be able to get into more real-life situations versus fires per se built by pallets and straw. Granted, it would be expensive, but I think if you could get your hands on something like that, it would be very effective.

Some participants were unsure of how realistic the training could be, stating that no technology can replace real-life training. Participant #1 offered:

I think they could be useful, I suppose, for more recruits that don't get their live burns that come on the department without any fire training at all, like real life fire training. I definitely think that would be a plus, but being almost two years into the department and having multiple structure fires prior to coming on this department, I don't feel that a virtual reality would be too productive.

Participant #15 added:

I think that VR could have been utilized to see flashover or other fire conditions more clearly before going into the burn room, although it can't replace the real thing.

Finally, Participant #12 was also skeptical about the potential role that VR could play with training:

I think that maybe it'd be nice if there was some sort of virtual reality where you could like actually see the inside of a real burning house because, like, inside the training tower, you can get some things, but you can't really get a real deal. Um, but at the end of the day

I think that you have to actually pull the hose to learn how to pull the hose, and so I think besides just being able to see something in virtual reality, I don't know how big of a help it would actually be.

Theme 16: Social Media Platforms

As a theme, utilizing social media platforms for training purposes appeared 23 times through 13 interviews. The most prevalent platform being used for training was YouTube, and participants were unsure how other platforms might be utilized. Participant #7 stated:

YouTube videos, when we were doing the part of the of the lecture portion [is] mainly where we watched a lot of videos on forcible entry and just different ways of how different municipalities go about doing that and what works best for us so we did a lot of YouTube, and then we also would watch a lot of videos on actual structure fires that we just found on YouTube that we kind of were like, hey they could have done this better or this better they could have been faster to here if you know this, and then we also did a lot of on those videos of actual structure fires a lot of reading smoke stuff so basically it was just a lot of YouTube videos. Then we got to kind of obviously step back or just analyze it and just see what was done well and what maybe could have been done a little better.

Participant #13 added:

YouTube is probably the best way for like longer videos but if you wanted to like quickly go through the operation of like, I don't know, like setting up an IV, you could do a video of that under a minute or something, then you could use Instagram or TikTok but other than that, that's kind of like the limit I think is like a minute for most videos so it'd be more YouTube would be the best.

Continuing to talk about YouTube, Participant #13 stated:

Other than like YouTube I haven't heard of much else that's used to show any sort of training at all. Maybe either getting people interested in your department or kind of sharing ideas with other departments and then you can like see like you could share certain fire grounds uh operations and then if like another department sees it they could be like, oh this is how we do it but we kind of like how you do that. So I feel like it'd be a good way to like, share, and create new ideas of doing things and just building on each other's SOGs because that's kind of how everyone's SOGs works nowadays is they kind of see, oh they do it this way we like that so we'll implement it in our own way, but in terms of training probably not 100% the best other than like YouTube videos I feel like is still a solid way to go.

Other social media platforms, such as Facebook, Instagram, and TikTok, were offered as potential platforms but were not identified as frequently as YouTube. Participant #3 offered:

I also do think that Tik Tok, as controversial as it is, does actually have some really good short clips for hose advancement. There's this one guy that just specifically talks about different techniques for ladder throws as a solo firefighter and stuff like that. I think Tik Tok is a good tool for our generation because attention spans I think are a little bit shorter these days. I think Tik Tok would have been a good one.

Participant #10 spoke about their experience with Instagram:

Instagram Reels was one that [our training officer] used quite a bit, that's just his personal one, pretty much any social media that fire departments would use and post on like their trainings like Facebook, Instagram, even TikTok to some degree.

Finally, Participant #4 spoke about their training experience with Facebook:

With me being on this department now, there are a lot of helpful videos that are posted to a Facebook group page, or people on the department share posts/tips/videos that could be useful for anyone.

Research Question 4: What Processes and Techniques Might be Utilized During the Fire Academy to Meet New Firefighter Expectations?

Research question four aimed to discover training processes that Generation Z has been exposed to and would like to see utilized in the fire service. Furthermore, the question intends to qualify Generation Z's expectations for the training academy in order to suggest programs that ensure those expectations are being met. Research question 4 resulted in two themes: mentorship and training expectations.

Theme 17: Mentorship

The theme of mentorship appeared 12 times in 10 of the 15 interviews. The interview participants wholly agreed that mentorship was needed in the fire service. Participant #1 expressed their desire for a mentor to be accountable for them:

Having someone accountable for you, to mentor you, I know we have like our preceptors or trainers but, having someone accountable for you for your entire probation instead of just your lieutenant, and having like a brother or sister or maybe like just that one single mentor that you are assigned to would probably be very beneficial because it could be quite scary to come in and only know that you have to look up to your BC and lieutenant to ask questions.

Participant #6 believes that mentorship is a must:

I think mentorship is huge for new personnel! Having a mentor is very beneficial because you can discuss calls and techniques with a more experienced individual. This works in

any setting. I think this is so important because newer people may be hesitant to talk with people because they don't want them to think something of someone that may not be true.

This is also a good way to introduce someone to the lifestyle of this career.

Participant #7 echoed those sentiments while talking about the mentor they were assigned:

A mentorship is what I have been a part of and, I do think that has been really helpful.

Obviously, when you are a new firefighter, you kind of feel, I shouldn't say nervous, but it's a big change definitely for somebody who's never been in the fire service before, so what the city did is assigned us a mentor. We met with them, we went had coffee with their crew, we went had coffee with them or got breakfast or something with that person, and then we exchanged phone numbers and basically any question that we had, whether it was regarding trades, vacation, working skills, anything like that they were offering to help us with. I think that was really cool knowing that you had somebody specific for you to go ask questions.

Participant #8 was also assigned a mentor after their training academy but didn't discount the possibility of having an informal mentor fill the role:

After the academy, they did give us a mentor that we could reach out to. If we had questions or something, it was just someone easy we could go to. Otherwise, having someone that you can create a rapport with that's maybe not your house captain or your direct supervisor, I think is very beneficial, especially if you're a young guy with an older crew or something.

Several of the participants believed that a mentor should not be an officer, as it may be too intimidating to go to them with questions. Participant #14 offered:

I am a very big fan of mentorship, especially with somebody who is not as high ranking or not as many years on. So somebody who's five years on or so, because it's very intimidating going in, and everybody says you can come talk to us, whatever you need, come talk to us. But you're not quite certain what to ask, who to ask. So it's a lot easier having that guy there, or gal, or having them there, being able to talk to them just openly.

Participant #12 added:

I think mentorship is a really good idea. Just having someone to go to with me being like so young I have a lot of questions, and sometimes the questions aren't really worth going to ask the captain and lieutenant for. So having like another firefighter or driver who's got a little bit more time on their hands to answer those questions and help me along with just everyday random things at the firehouse or anything like that. I think a mentorship would be good.

Participant #10 thought a mentor should come from the union ranks:

The most positive one I've ever experienced was pure mentorship, having somebody that's older in the department, like our union, we have a union mentor who will check up on you and make sure you're not struggling in any ways about every, I don't know, two weeks, and if you need help they'll come and sit down with you, have lunch with you, talk about it, or do something else that if you need help on a certain topic they'll help you train in that. That's probably the most influential, our most positive influence that I've experienced that way.

Theme 18: Training Expectations

Training expectations, as a theme, included many different topics including; accountability, communication, use of LMS platforms, ride-alongs, and more training in different areas. This theme appeared 12 times in seven of the 15 interviews.

Participant #1 spoke mainly to their expectations of how the training would be run and not necessarily the content:

[There was a] lack of scheduling, like we had a schedule, but it would end two hours early and you're kind of just left to find something to do, and we were forced to stay till four o'clock, so that was something that I didn't appreciate. I do know that the last three or four academies have not been going similar to the my academy. [My academy] was two weeks long, where others prior to me were three weeks, and I don't know what difference that made. I know that ours did not touch a lot of things that others did. I remember coming off or going into my 10-day and there was not a lot required for me where the recruits now are being required to do some policy testing some protocol testing review with their apprentice. I wasn't assigned any of that, so maybe it felt as if nothing was held accountable; that was one of the bigger things. I can see it in our academy that's happening at the moment. They started on Monday and they're already running into the problem where our our chiefs that are training them are either not there and assigning the tasks to on-duty crews, which is fine, if it is communicated but typically, it happens they just leave at 2 p.m. instead of 4 and the recruits are left there with nothing to do. That happened in my academy, too, and it's quite aggravating when you're there getting paid to learn the job and you only have two weeks to do it; definitely, a longer academy would help.

Participant #3 thought more building construction and radio communications training would be helpful:

I think maybe some more training on like building and construction, stuff like that, and like scene command, I guess, in case you find yourself first on scene, and you have to take over. Maybe like, some like worksheets, like you arrive, you have this, this, this, this, you know, give a first in report or something like that. I think, you know, each department kind of has different policies, I'm assuming for how they, you know, would do a first in radio report and, and direct their incoming units. Even though some of us aren't in an officer position, obviously, there's always that chance that you're going to be the first one there. I think that would be a helpful topic to cover.

As part of their academy, Participant #5 was required to complete ride-along dates for EMS.

They would like to see those ride-along sessions be extended for fire response:

I would love to see some version of that in fire as well, being able to do a ride-along where we do a live burn, it's all secured, and as controlled as it can be for a fire. I'd love to see something along those lines because then it takes the anxiety out of that first initial structure fire that you get paged to, and you're like I have no idea what I'm doing, I went through the training but I still have no idea what I'm doing, I have no idea what to do.

The final participants went back to LMS platform use and technology as an expectation of their training. Participant #8 offered:

It seems like there's so much online training now that is being done with pre-recorded videos that's not interactive at all. I think with today's technology, people are on the phones more and stuff. It's just very hard to stay focused on a pre-recorded video of any length because there's nothing keeping you engaged.

Participant #13 added:

I feel like [LMS platforms] might help with the lectures, like shorten the lectures a little bit if they had some videos for us to watch ahead of time that way instead of having to talk about the whole way to do something and then show a video we could kind of watch the video ahead of time and then maybe just do more hands-on training during like our academy days something to kind of shorten the like classroom time.

Participant #15 stated:

I think that having a platform like Blackboard could be beneficial. If you had assignments to complete with your crew and then get tested on it somehow periodically it can show progress and help you stay sharp with your skills.

Summary

18 themes were identified to answer four research questions. Investigation of each of the four research questions resulted in the identification of individual prevailing themes for each question. Overall, the hands-on theme for Generations Z's preferred learning was coded the most and was the only theme that appeared in every interview.

Research question one asked about the motivations of Generation Z to join the fire service. The highest-rated theme was job expectation, followed closely by a feeling of helping people and family influence. Research question two asked about the preferred training methods of Generation Z. As stated, the prevailing number one response was hands-on learning, being coded 52 times across all 15 interviews. Research question three investigated social media and other technologies. Of the themes identified, social media was the number one theme, appearing 23 times over 13 interviews. The main social media platform being used today was YouTube, with additional platforms being considered but underutilized. Research question four aimed to

identify additional processes to train Generation Z recruits and identify their training expectations. The themes of mentorship and training expectations were both coded 12 times. The difference between the two was that mentorship was mentioned in 10 interviews, while training expectations were mentioned in seven interviews. Overall, a strong data set was gathered for conclusions and recommendations on best training practices for Generation Z to be presented.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Summary of the Results

The white paper “21st Century: Fire and Emergency Services” indicates several expected future challenges, two of which were a lack of training in new approaches and techniques and an inability to adopt new technologies (Center for Public Safety Excellence, 2020). Based on that premise, this study began by identifying the problem of a gap in the fire service between traditional teaching methods and Generation Z's preferred learning methods. The study then aimed to discover best-practice training techniques for Generation Z that can be applied explicitly to the fire service by asking four research questions.

- Q1: What motivates Generation Z to join the fire service?
- Q2: What are Generation Z's preferred learning methods for fire ground operations?
- Q3: How can fire departments utilize social media and new technologies to aid initial and ongoing training?
- Q4: What processes and techniques might be utilized during the fire academy and probationary period to enhance training and meet employee expectations?

A general qualitative inquiry was used to interview 15 members of Generation Z who completed a fire academy within the last two years and were from five different career and combination fire departments across Wisconsin. Each participant answered 12 interview questions, resulting in data in the form of 221 statements across 18 identified themes, providing information from which to draw conclusions to answer the research questions.

Conclusions Based Upon Your Results

The interviews of 15 participants identified 18 themes, which generated the conclusions presented here. Ultimately, this study showed that Generation Z firefighter candidates prefer

hands-on training with real-world applications. They want all the information given to them during hands-on training, teaching the principles of firefighting and EMS while they are allowed to engage in the activities they are being taught. They do not want to be in a classroom, they do not want to be given assignments, and they do not want to be given exams. The need for technology was not cemented in Generation Z's attitude toward training, but certain applications may be intriguing to them. Finally, a mentorship program is highly encouraged for the successful integration of Generation Z firefighter candidates. These were the resounding base findings of the study. However, the implementation of hands-on-only training may need to utilize the secondary and tertiary findings of this study as well.

Question 1: What Motivates Generation Z to Join the Fire Service?

Motivations start with examining a group's characteristics. Generation Z grew up with a cell phone, which meant they had information at their fingertips at all times (Cickovska, 2020). This experience created a generation that prefers problem-solving, learning through real-world applications, teamwork, and internet use (Nicholas, 2019). Furthermore, Gen Z is motivated by meaningful work that offers competitive compensation and career development (Benitez-Marquez et al., 2022). These characteristics, especially teamwork, problem-solving, and learning through real-world applications, were confirmed by this study when applied to the fire service.

The results showed that of the Generation Z motivational theme appearances for this question only, 25% (8/31) of the theme appearances focused on helping people, an additional 25% (8/31) focused on Job expectations, with 22% (7/31) focused on family motivations. With those results, the study concluded that Generation Z's motivational factors are very individualistic. However, generalities can be made about those individual motivations that can be incorporated into training programs. Many factors motivated this study's sample group to enter

the fire service. The most common themes found were helping people, family motivations, and job expectations. This researcher was not surprised by a major theme being “helping people,” which is the essential job function of a firefighter as a problem solver. For the other two themes, while family motivations are more intrinsic, many of those themes coincide with the job expectation theme. The most prevalent finding was that candidates want to feel like they belong. Some of the participants discussed teamwork, while others discussed the brotherhood and sisterhood of the department. By incorporating these motivations into a training academy, candidates will more likely be engaged in the lessons being taught, maximizing retention.

Question 2: What Are Generation Z’s Preferred Learning Methods for Fire Ground Operations?

The literature review suggests Generation Z’s preference for one-on-one learning and feedback while ensuring good communication practices (Schroth, 2019). Additionally, Generation Z wants supervisors who are creative, honest, have good communication skills, and have broad general knowledge (Korombel & Ławińska, 2023). The study confirmed these findings when participants described their memorable and impactful one-on-one experiences with trainers during their training academy. Furthermore, the literature review showed that Generation X’s comfort zone is hands-on training with clear objectives (Ventrura & Yango, 2023). The study found that Generation Z also wants hands-on learning, but more so than is currently being offered, enabling Generation X trainers to draw on their strengths.

The results showed that of the themes identified for Generation Z’s preferred learning methods, 45% (52/116) of the theme appearances across 100% (15/15) of the participants for this question identified hands-on as their preferred learning. In conjunction, 10% (12/116) of the themes added one-on-one learning, and another 9% (11/116) added scenario-based learning as

the preferred method to coincide with hands-on learning. The themes for this question also identified with a negative connotation: 20% (23/116) of the themes focused on lectures, with an additional 10% (12/116) of themes focusing on tests as learning methods that the participants did not favor and did not particularly like.

The study concluded that Generation Z firefighter candidates strongly preferred hands-on learning over other methods. They expressed a desire for more hands-on training than is currently offered, with a preference for scenario-based and one-on-one training. They also found scenarios to be more effective when they mirrored real-life calls rather than being created for training purposes alone. One-on-one training, which allows candidates to ask questions in real time, was also favored. Candidates wanted lectures to be part of training scenarios, and if there had to be testing, they preferred it to be hands-on and scenario-based rather than pen and paper.

Question 3: How Can Fire Departments Utilize Social Media and New Technologies to Aid Initial and Ongoing Training?

Question 3 is where the literature review deviated somewhat from the findings of the study. The literature review showed that Generation Z, or digital natives, preferred social media tools for learning, such as YouTube, TikTok, Snapchat, and Instagram (Vogels et al., 2022; Nicolas, 2019; Vizcaya-Moreno & Pérez-Cañaveras, 2020; Gilbert et al., 2022). This study suggested that firefighter candidates did not prefer the utilization of technology for learning firefighting skills. However, it was found that there is a lack of real-life and job experience that may need to be overcome, especially when with concerns to the use of emerging technologies for training firefighters (Schroth, 2019). Furthermore, Virtual Reality (VR) is a tool that the researcher believes has a place in training the next generation of firefighters. Several examples were reviewed that indicated the promise of this technology (Bayouth & Karen, 2019; Chen &

Chien, 2022). Generation Z's lack of real-world and job experience showed that many of the interview participants were not familiar with the potential of VR (Schroth, 2019).

The results showed that of the themes identified for Generation Z's preference or exposure to social media as a teaching tool, 46% (23/50) of the themes identified by 87% (13/15) of the participants focused on YouTube as a social media tool being used by departments and that has the greatest effect on learning. An additional 24% (12/50) of the identified themes focused on virtual reality, with some mixed results of it being seen as useful, not useful, or the candidates just not knowing much about it across 80% (12/15) of the participants.

The study concluded that YouTube is the number one social media tool being used for firefighter training. YouTube is used for show-and-tell or case study applications during lectures with zero original content from any of the sampled fire departments. More surprising was that the candidates thought that social media tools only had limited potential where training was concerned. Some of the candidates watched content on other platforms, such as Instagram and TikTok, and only one department, SAFER, was utilizing Facebook as a means of distributing training to department members.

Other technologies, such as learning management systems (LMS), virtual reality (VR), and simulators, were mostly thought to have a high potential for training, but little was known by the participants outside of LMS platforms. It was surprising that only one candidate spoke of their experience with the Oculus VR system and their desire to use VR for firefighter training. Equally as surprising was the participant sentiment that LMS systems had limited use and that simulators were not yet being used for firefighter training even though driving simulators and high-fidelity mannequin simulators have been available for years.

Question 4: What Processes and Techniques Might be Utilized During the Fire Academy and Probationary Period to Enhance Training and Meet Employee Expectations?

The new generation has more expectations than generations past. The literature outlines expectations that include flexibility and work-life balance (Lazar et al., 2023). In addition, Generation Z wants a supervisor who is creative, honest, has good communication skills, and has broad general knowledge of the industry (Korombel & Ławińska, 2023). All of these expectations can be met by assigning a mentor to the firefighter candidate, a teaching strategy that was spoken highly of by the participants and confirmed as a necessity by the study.

The results showed that of the themes identified with concern with potential training techniques and their training expectations, 50% (12/24) focused on mentorship across 67% (10/15) of the participants, with the remaining 50% (12/24) of the identified themes being focused on 47% (7/15) of the participant's training expectations. The results did show that across those participants who identified training expectations as a theme, their specific expectations were almost exclusive to each individual's expectations.

The study concluded that mentorship should be a staple of fire service training academies and probationary training. It wasn't just that 10 of the 15 participants spoke about mentorship but the impact they felt it imparted on their ability to integrate into their department and the fire service as a whole. Those who didn't have mentors stated that a mentor would have helped them transition better from the academy to the duty shift and would have helped with their entire probationary period. Additionally, the participants felt that mentors should be the informal leaders of the department instead of officers, with one candidate preferring their mentor to be a firefighter with just five years in the department. The second theme of this question, training

expectations, was very individualistic, and the only conclusion that can solidly be made is that the participants wanted more training, although they all indicated training in different areas.

Limitations

Several limitations existed with this study. The first was the sample size. The point at which data saturation is achieved, dictating the proper sample size, is a matter of debate (Sarfo et al., 2021). 15 participants were interviewed from five different Wisconsin fire departments. None of the departments sampled ran robust and lengthy training academies like those that can be found with some of the larger departments or regional training academies that can be found throughout the country. The length of training academies for those departments sampled ranged from two weeks to eight weeks, with the average being about six weeks. With these limitations, it may be difficult to apply these findings to the entirety of the fire service across the country.

A second limitation was the exposure participants had to technologies used for training in the fire service. Few social media platforms were used by departments for training outside of YouTube, few LMS platforms were being used, and virtually zero simulators and virtual reality environments were being used for training. These limitations may have drastically skewed the results toward one theme and away from another. Departments that are using emerging technologies for their training programs may have different results with their Generation Z firefighters. Due to these limitations, this study may not have been able to capture the true advantages that technology can play in training and how those technologies favor Generation Z.

A third limiting factor may have been the researcher. Every participant knew the researcher as the Deputy Fire Chief of a department and an Executive Fire Officer student. These two facts may have skewed the results to be more positive or favorable toward their department and their experience, especially for those participants from the SAFER District. Adding to this

potential limitation, the researcher played a key role in the development and presentation of the training academy for SAFER and academies that participants were involved in. This limitation may have led to bias by the participants as well as the researcher.

Implications and Recommendations to the Field

This research study was conducted to identify strategies to close the gap between Generation X teaching approaches and the preferred learning strategies of Generation Z. The importance of this research applies throughout the country as the fire service finds itself in unprecedented times of high turnover, low retention, and a reduced pool of applicants to fill positions (Trayner, 2023). By addressing onboarding and training practices, we may be able to influence the way that the youngest firefighter recruits see our departments and the fire service. Adapting our training practices to those preferred by Generation Z may help with recruitment and retention in addition to increasing successful information retention and onboarding.

Considering the results of this study, a few recommendations can be made addressing the current practices of firefighter candidate training academies. First, the development of the fire academy should not only take into account the lessons that command staff feel are necessary for firefighter candidate success. As this study suggested, the way that the newest recruits want to be taught may have a direct correlation to their overall success. Take time to understand the motivations that draw firefighter candidates to the fire service and plan training events that incorporate those motivations to increase their engagement. Planning should be taken seriously, and members of the planning team should be training officers, shift command staff, and recent academy graduates. Recent academy graduates have the insight needed to make meaningful changes to programs that may have a long history.

Many of the participants stated that they did not want to be in a classroom and did not want to be tested using pen and paper. A second recommendation would be to implement a hands-on, scenario-based training program with smaller instructor-to-student ratios while lecturing information and performing skills simultaneously. As part of the hands-on, scenario-based training program, it is recommended to use talking points during training sessions to teach department policy and conduct hands-on, scenario-based skills testing to ensure competency. This training strategy may increase candidate success and satisfaction while positively affecting employee retention.

A last recommendation to organizations is to assign a mentor to every firefighter candidate. Mentors should be given free rein to help develop candidates by teaching the candidates what they know, helping candidates feel part of the team, and following the candidates for their first year and longer if needed. Most of the participants expressed that they found their mentor helpful or would have liked to have had a mentor. A mentor has the ability to teach the intangibles, the questions that firefighter candidates are afraid to ask. Finally, having that person whom a candidate can talk to throughout their probation and career in an informal setting may give that person the confidence they need to excel as a firefighter.

Recommendations for Future Research

In the literature review, Generation Z was labeled the digital native. Their affiliation with mobile devices, social media, and technology has been studied in several different settings. This study, relying on their experiences, looked at the current training practices and what is working for Generation Z. As training programs in the fire service today utilize PowerPoint lectures, LMS learning platforms, hands-on skills training, scenario-based skills training, and pen-and-paper

examinations, Generation Z's experience with advanced technologies from a fire service standpoint is limited.

Several advanced technologies are being used in the fire service today, such as heads-up displays (HUD), drones with infrared capabilities, and advanced thermal imaging cameras (TICs) with detection capabilities to find downed firefighters. Yet, this study suggested that the fire service is lacking in the use of emerging technologies for firefighter training. When participants spoke of emerging technologies, they spoke of industries outside of fire and emergency medical services, and they had little or no experience with the technologies presented to them.

Future research may be conducted that studies training academies that utilize virtual reality, fire extinguisher simulators, high-fidelity mannequins, driving simulators, and engine pumping simulators. After conducting academy training using these technologies, the group of candidates may be studied to find the impact of those technologies on their learning. Another research recommendation would be to develop mobile applications and cultivate social media platforms specific to fire department training regimens and use those applications during the fire academy. Once the academy is completed, candidates may be studied to find the impact of those technologies on their learning.

Conclusion

A general qualitative study was conducted to answer four questions and discover best-practice training techniques for Generation Z that can be applied to the fire service. The research included a literature review that explored the differences between Generation X teachers and Generation Z learners, onboarding practices, and new training techniques that are available for the fire service. 15 Generation Z firefighters who recently graduated from fire academies from

five different Wisconsin fire departments were interviewed to gain insight into how they prefer fire department lessons to be presented to them. This research concluded that Generation Z prefers hands-on learning with an emphasis on scenario-based and one-on-one learning.

This study's limitations were identified as a lack of exposure to fire service technologies used to train firefighters. These technologies could further advance the capacity of Generation Z to learn vital fire service lessons. This study should engage the fire service to strive to understand the audience they are teaching in order to efficiently and effectively teach their material. Furthermore, the fire service should work to incorporate different technologies into their teaching programs in order to increase Generation Z's exposure to some lessons that may be difficult to teach in a controlled environment.

REFERENCES

- Bahamonde, A. (2019). Mental Health Through the Art of Gardening. *Journal of Therapeutic Horticulture*, 29(2), 27–44.
- Bayouth, S., & Keren, N. (2019). Fireground Cue Recognition: Effects on Firefighter Situational Awareness When Facing High-Risk Situations in Virtual Reality. *International Fire Service Journal of Leadership & Management*, 13, 35–44.
- Bell, E. E. (2014). Graduating Black Males: A Generic Qualitative Study. *Qualitative Report*, 19.
- Benítez-Márquez MD., Sánchez-Teba EM, Bermúdez-González G, & Núñez-Rydman ES. (2022). Generation Z Within the Workforce and in the Workplace: A Bibliometric Analysis. *Frontiers in Psychology*, 12, 736820.
- Center for Public Safety Excellence. (2020). *21st Century: Fire and Emergency Services* [White paper]. <https://www.cpse.org/wp-content/uploads/2020/07/21st-Century-Fire-and-Emergency-Services-White-Paper-Final-07.15.20.pdf>
- City of Phoenix. (2024). *Firefighter Recruit Training*. Retrieved on March 25, 2024, from <https://www.phoenix.gov/fire/employment/firefighters/firefighter-recruit-training>
- Chang, C.-W., & Chang, S.-H. (2023). The Impact of Digital Disruption: Influences of Digital Media and Social Networks on Forming Digital Natives' Attitude. *Sage Open*, 13(3). <https://doi.org/10.1177/21582440231191741>
- Chen, S.-Y., & Chien, W.-C. (2022). Immersive Virtual Reality Serious Games With DL-Assisted Learning in High-Rise Fire Evacuation on Fire Safety Training and Research. *Frontiers in Psychology*, 13, 1–9. <https://doi.org/10.3389/fpsyg.2022.786314>
- Cickovska, E. (2020). Understanding and Teaching Gen Z in Higher Education. *Horizons Series A*, 26, 275–290. <https://doi.org/10.20544/HORIZONS.A.26.3.20.P22>

- Creswell, J. W., & Creswell, J. D. (2018). *Research Design, Qualitative, Quantitative, and Mixed Method Approaches*, (5th ed.) SAGE Publication.
- Dwivedula, R. (2020). Job Characteristics as a Determinant of Intrinsic Motivation: An Empirical Study of Generation Z. *Journal of Strategic Human Resource Management*, 9(2&3), 29–40.
- George, M. (2021, October 29). Introduction to the Fire Academy: What Can a Recruit Expect in the First Part of Their Fire Academy Training? *Fire Engineering*.
<https://www.fireengineering.com/firefighter-training/introduction-to-the-fire-academy/#gref>
- Gilbert, B. G., Mathis, D. P., Henry, B., Gibbs, A., & Lee, V. (2022). “The Professor I Like!” Generation Z Students and Their Teachers. *ABNFF Journal*, 1(3), 22–28.
- Illinois Fire Service Institute. (n.d.). *Program of Instruction – Course Syllabus*. Retrieved March 25, 2024, from https://www.fsi.illinois.edu/documents/course_syllabus/83.pdf
- Kaše, R., Saksida, T., & Mihelič, K. K. (2019). Skill Development in Reverse Mentoring: Motivational Processes of Mentors and Learners. *Human Resource Management*, 58(1), 57–69. <https://doi-org.libraryresources.columbiasouthern.edu/10.1002/hrm.21932>
- Korombel, A., & Ławińska, O. (2023). Expectations of Generation Z Representatives Towards the Features and Competencies of Their Direct Supervisors (Managers) – Results of Own Study. *Scientific Papers of Silesian University of Technology. Organization & Management / Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 185, 187–212. <https://doi.org/10.29119/1641-3466.2023.185.11>
- Lazar, M.-A., Zbucnea, A., & Pînzaru, F. (2023). The Emerging Generation Z Workforce in the Digital World: A Literature Review on Cooperation and Transformation. *Proceedings of*

- the International Conference on Business Excellence*, 17(1), 1991–2001.
<https://doi.org/10.2478/picbe-2023-0175>
- Miller, T. (2020, March 11). Training the Next Generation: Millennials and Gen Z. *Fire Engineering*. <https://www.fireengineering.com/leadership/training-the-next-generation-millennials-and-gen-z/#gref>
- Montiel, I., Delgado-Ceballos, J., Ortiz-de-Mandojana, N., & Antolin-Lopez, R. (2020). New Ways of Teaching: Using Technology and Mobile Apps to Educate on Societal Grand Challenges. *Journal of Business Ethics*, 161(2), 243–251. <https://doi.org/10.1007/s10551-019-04184-x>
- Murphy, M. (2013). Social Media and the Fire Service. *Fire Technology*, 49(1), 175–183.
<https://doi.org/10.1007/s10694-010-0205-6>
- Nicholas, A. J. (2019). Preferred Learning Methods of Generation Z. *Proceedings of the Northeast Business & Economics Association*, 161–170.
- Percy, W. H., Kostere, K., & Kostere, S. (2015). Generic Qualitative Research in Psychology. *The Qualitative Report*, 20(2), 76–85. <https://doi.org/10.46743/2160-3715/2015.2097>
- Raymond, M. A., Siemens, J., & Thyroff, A. (2021). Students, Please Teach Us! Implementing Student-Employee Reverse Mentoring to Increase Career Readiness. *Marketing Education Review*, 31(2), 87–92. <https://doi.org/10.1080/10528008.2021.1907593>
- Sarfo, J., Debrah, T., Gbordzoe, N., Afful, W., & Obeng, P. (2021). Qualitative Research Designs, Sample Size, and Saturation: Is Enough Always Enough? *Journal of Advocacy Research and Education*, 8, 60–65. <https://doi.org/10.13187/jare.2021.3.60>
- Schroth, H. (2019). Are You Ready for Gen Z in the Workplace? *California Management Review*, 61(3), 5–18. <https://doi.org/10.1177/0008125619841006>

Trayner, B. (2023, March 6). A New Era for Firefighter Recruitment. *Firehouse*.

<https://www.firehouse.com/careers-education/article/21293619/a-new-era-for-firefighter-recruitment>

Vaida, S. (2024). Is There Really a Generational Gap? Characteristics, Values and How to Talk to Each Generation. *Journal Plus Edition/ Educația Plus*, 35(1), 72–88. <https://doi-org.libraryresources.columbiasouthern.edu/10.24250/jpe/1/2024/sv/>

Ventura, S. P., & Yango, A. R. (2023). Leading from within: Understanding the lived experience of Gen X school heads in a digitalized world. *Technium Social Sciences Journal*, 44, 508–520. <https://doi.org/10.47577/tssj.v44i1.8948>

Vizcaya-Moreno MF, & Pérez-Cañaveras RM. (2020). Social Media Used and Teaching Methods Preferred by Generation Z Students in the Nursing Clinical Learning Environment: A Cross-Sectional Research Study. *International Journal of Environmental Research and Public Health*, 17(21). <https://doi.org/10.3390/ijerph17218267>

Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022). Teens, Social Media and Technology 2022. *Pew Research Center Report*.
<https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/>

APPENDICES

Appendix A

Interview Consent form

Interview Consent Form

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Eric A. Lang from the National Emergency Training Center (NETC) and Columbia Southern University. The purpose of this study is to develop a better understanding of a critical issue in the fire and emergency services. This study will contribute to the researcher's completion of their final project for the Executive Fire Officer program.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions about the study have been answered to your satisfaction. The study consists of an interview that will be administered to individual participants. You will be asked to answer a series of questions about your experience within a particular community. **An [audio/video] interview recording will be taken for transcription.** You may turn off your camera if you do not wish to be filmed.

Time Required

Participation in this study will require approximately 45-60 minutes.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

The NETC, Columbia Southern University, and its contractors are not responsible for the research study's actions or outcomes.

Benefits

There are no direct benefits to the participants; however, information from this study may benefit your community and other communities in the future.

Incentives

No incentives (financial or otherwise) are associated with participation in this study.

Confidentiality

The results of this research will be presented to NETC and Columbia Southern University program faculty and students. The results of this project will be coded so that the respondent's identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented, representing averages or generalizations about the responses as a whole. **All data will be stored in a secure, password-protected, cloud-based file accessible only to the researcher. All stored information matching individual respondents with their answers (including audio and/or video recordings) will be destroyed four years after the interviewer**

graduates from the EFO program. Final aggregate results will be made available to participants upon request.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, after its completion, or you would like to receive a copy of the final aggregate results of this study, please contact:

Eric A. Lang

Executive Fire Officer Student
National Emergency Training
elang@saferdistrict.org

Dr. Justin Heim

Course Manager
Center Columbia Southern University
Justin.Heim@columbiasouthern.edu

Giving of Consent

I have read this consent form, and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have received satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

- ☐ I consent to audio and visual recording during my interview. _____ (interviewee initials)
- ☐ I consent to audio recording during my interview. _____ (interviewee initials)

Interviewer Signature		Date:	
--------------------------	--	-------	--

Interviewee Signature		Date:	
--------------------------	--	-------	--

Appendix B
Observation Protocol

Date:

Time:

Interviewer Name: Eric A. Lang

Interviewee Name:

Interviewee Department:

Outward Observations:

Question #	Question Response Observations	Question Answer Notes
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix C

Interview Questions

1. Please state your name, age, department affiliation, how long you have been with the department, and when you completed the training academy.
 - a. Observation: Gender and ethnicity are to be documented for diversity reporting.
2. What motivated you to join the fire service?
 - a. Describe any specific life circumstances that influenced your decision.
3. Describe any class topic or specific training that impacted you while attending the technical college during initial fire/EMS training. How was that taught?
 - a. Did the instructor do anything that stood out from the other instructors you have had?
4. What is one thing that stood out to you most during your fire academy experience?
 - a. Why did that particular experience stand out to you?
5. What training event(s) did you like best during your fire academy? How were those trainings taught?
 - a. Why did you like that particular lesson?
6. What training event(s) did you like least during your fire academy?
 - a. How were those trainings taught?
 - b. Why did you not like that particular lesson?
7. Describe teaching strategies used in the academy that you felt were more effective and those that were less effective (e.g., lectures, hands-on activities, tests, self-study).
 - a. Why do you feel this way?

8. What social media tools were utilized during your training academy to enhance your learning?
 - a. How were they used?
 - b. If none were used, what platforms could have been used, and how could they have impacted the learning process?
9. Are you familiar with social media platforms that created a positive training experience for any of your friends or family in a different profession that you would like to see utilized in the fire service?
10. Are there ways you think virtual reality, simulators, or another technology could have helped you understand concepts better during your fire academy?
 - a. If they were used, how were they effective training aids?
11. Describe alternative strategies (e.g., mentorship, reverse mentorship, game theory, blackboard/LMS platforms) you have experienced in any learning setting that you think would work well in the fire service.
 - a. How would they help or hinder learning in the fire service?
12. Is there anything you would like to add to the interview?