

EDUCATIONAL PATHWAYS FOR MILITARY VETERANS TRANSITIONING
INTO INFORMATION TECHNOLOGY AND CYBERSECURITY-RELATED
CAREER FIELDS

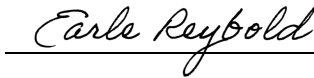
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Into Information Technology and Cybersecurity-Related Career Fields

A Dissertation submitted in partial fulfillment of the requirements for the Doctor of
Philosophy degree at George Mason University

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Dedication

This dissertation is dedicated to the U. S. military veterans who have voluntarily given so much for our nation and to all who serve in any sort of transition assistance role to help them reintegrate and thrive in American society.

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This has been a long journey and many have helped and supported me along the way. There are many individuals I wish to thank.

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List of Abbreviations

Abbreviation	Definition
ACDU	Active Duty
ASEE.....	American Society of Engineering Education
BHEF	Business Higher-Education Forum
BLS	Bureau of Labor Statistics
CompTIA	Computing Technology Industry Association
DHS.....	Department of Homeland Security
DOD.....	Department of Defense
DOL	Department of Labor
DSEF.....	Did Something Else First
(ISC) ²	Center for Cyber Safety and Education
IVMF.....	Institute for Veterans and Military Families
NICE	National Initiative for Cybersecurity Education
NIST.....	National Institute of Standards and Technology
RES	Reserve
RET	Retired
SHRM	Society for Human Resource Management
SVA.....	Student Veterans of America
TAP	Transition Assistance Program
VA.....	Department of Veterans Affairs

Abstract

EDUCATIONAL PATHWAYS FOR MILITARY VETERANS TRANSITIONING INTO INFORMATION TECHNOLOGY AND CYBERSECURITY-RELATED CAREER FIELDS

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George Mason University, 2022

Dissertation Director: Dr. Daniel Chen

The purpose of this study was to explore the experiences and motivational factors that influenced educational and career decisions of United States military veterans who transitioned out of the military and into an information technology (IT)-related career field. The study investigated the reasons veterans decided to pursue IT-related careers, the reasons they selected their educational programs to gain entry into the field, how they described their experiences within those programs, and how satisfied they have been during the entry-level phase of their career. Veterans who served in IT-related career fields during their time in the military were not included in this study. This case study presents the perspectives of 12 veterans who successfully transitioned out of the military, completed one of several educational pathways, and attained their goal of working in an IT-related career field. Several findings emerged as a result. Veterans who participated in this study were satisfied with their decisions to pursue careers in the IT workforce. They

approached career transitions from different situations, and those situations influenced the decisions they made and pathways they pursued to find success. The participants based their decisions to pursue their overarching goal of working in an IT-related career on internal or value-based motivations; however, when selecting an educational pathway to attain that goal, they deliberately considered the practicality of their circumstances. In addition, participants attributed part of their success to personal motivations, helpful strategies, and external support. Ultimately, future transitioning veterans can learn several lessons from these findings regarding career assessment and counseling, considerations for pathway selection, and elements of success.

Chapter One. Introduction

Since the tragic events of September 11, 2001, over 4 million veterans have served in the U.S. Armed Forces (Department of Veterans Affairs [VA], 2018) and many of those individuals repeatedly participated in the wars in Afghanistan, Iraq, or other operational deployments throughout the world (Wenger et al., 2018). Unfortunately, as a result of those deployments and wartime experiences, many veterans have also faced severe physical or psychological trauma and their families have suffered immensely (Watson Institute, 2018). However, while in no way lessening the severity of those individuals' experiences, when considering the totality of veterans who have transitioned out of the military service during this period, it is a relatively small percentage who have reported experiencing the extreme challenges such as severe post-traumatic stress, physical, or other psychological trauma as a result of war (Mobbs & Bonanno, 2018). Nevertheless, even for the majority of veterans who have not experienced such extreme outcomes, research does consistently find that a large proportion of all veterans do experience some type of challenge during their transition out of the service and back into a life within American society (DiRamio & Jarvis, 2011; Minnis, 2017; Zoli et al., 2015). In fact, at least initially (Zoli et al., 2015), the majority of service members experience some type of *transition stress* that includes "difficulties securing employment, interpersonal difficulties during employment, conflicted relations with family, friends,

and broader interpersonal relations, difficulties adapting to the schedule of civilian life, and legal difficulties” (Mobbs & Bonanno, 2018, p. 138). Many veterans also struggle with finding a sense of purpose in civilian careers after their time in the military (Ahern et al., 2015; Mobbs & Bonanno, 2018).

However, veterans’ transition out of the military service is not all bad; there are also many positive aspects of service members’ transition to college and return to the American workforce. Despite challenges they may face, the vast majority of transitioned veterans report that joining the military was a good idea and that their experiences in the services have positively impacted their lives after separation (Zoli et al., 2015). Plus, many employers have found veterans add “essential technical and interpersonal skills, discipline, leadership, loyalty, and many other attributes to a company’s workforce—all of which improve the organization and the bottom line” (Society for Human Resource Management [SHRM] Foundation, n.d., p. 2). Further, Haynie (2016) found the majority of transitioned veterans exhibit a high need for achievement, are comfortable with autonomy, make effective decisions in uncertain situations, effectively apply skills across contexts, are resilient, work well in diverse teams, are cross-culturally adept, and demonstrate loyalty to organizations. Many have earned security clearances that allow them to quickly fill positions with or in support of the federal government, and as a result of the Post-9/11 GI Bill, many veterans have the financial means to pursue certifications or educational opportunities that serve as prerequisites for or prepare them for specific vocational responsibilities (Department of Homeland Security [DHS], n.d.).

Along with the military operations that have occurred since 2001, the nation and the rest of the developed world have simultaneously experienced tremendous growth unrelated to the wars. Technological advances such as the Internet, cloud computing, and a myriad of connected devices have advanced at a revolutionary pace, which has impacted the nation's economy, interpersonal communication, and even the job market (Fischer-Baum, 2017). According to the U.S. Bureau of Labor Statistics (BLS), software development and information security are two of the fastest growing careers in the United States (BLS, 2019b). In fact, "employment of computer and information technology occupations is projected to grow 12 percent from 2018 to 2028, much faster than the average for all occupations" (BLS, 2019a, para. 1.). Such advances may offer tremendous opportunities for job seekers; however, those new opportunities do not come without new challenges as well.

Along with the rapid growth experienced within the technology industry, new dangers have also emerged. Throughout the entire world, criminals and other malicious actors consistently strive to find new ways to take advantage of or cause harm to unsuspecting individuals online. The threat of cybercrime is ever-present, and the U.S. government and Department of Defense (DOD) have gone so far as creating new organizations within the military and other departments to combat the new threats (DOD, 2018a). But these challenges are immense and the current state of the information security workforce is stressed.

Cybersecurity professionals worldwide face an ever-evolving threat landscape that many feel they are ill-equipped to manage. Data breaches at corporations,

educational institutions and government agencies continue to erode public confidence in the state of cybersecurity. The emergence of consumer goods such as wearable devices and self-driving cars, alongside the increasing connectivity of the systems managing critical infrastructure such as power plants and traffic signals are creating new threats to public safety, privacy, and economic stability. (Center for Cyber Safety and Education et al., 2017, p. 1)

To complicate matters further, an additional challenge associated with the unexpectedly rapid technological growth is that there is a forecasted shortage of information technology and information security professionals to address these problems, as well as a perceived misalignment between the training and education pipeline and knowledge and skills required “on-the-job” within the career field. Loten (2019) explains that according to the research and advisory firm Gartner, Inc., “most large U.S. companies are competing to fill many of the same technology roles, including computer and information research scientists, systems managers, analysts, engineers and software architects” (p. 1). Focusing more narrowly on cybersecurity, the CEO of the Business-Higher Education Forum (BHEF), Brian Fitzgerald, describes,

The unceasing nature and increasing sophistication of cyber attacks requires expansion of the cybersecurity workforce, from entry level to expert. While many higher education institutions offer cybersecurity programs, the United States faces a significant shortfall in the number of cybersecurity professionals, which is only expected to grow. Closing this talent gap—and providing employers with the workforce they need to protect their organizations—will require the development

and expansion of strategic partnerships between business and higher education.

(BHEF, 2017b, p. 1)

One specific example of this demand is the number of job vacancies announced in the Washington, DC, area during 2017. During that year, “employers in the Washington, D.C., metro area posted more than 40,000 job openings for cybersecurity-related positions, and this number is expected to grow” (BHEF, 2017a, p. 5). More recently, Loten (2019) contributes, “in the first half of 2019, tech job postings in the U.S. rose 32% from a year earlier, according to federal employment data analyzed by IT trade group CompTIA” (p. 1).

The U.S. Government and educational institutions are responding to the call. The U.S. Departments of Commerce and Homeland Security have collaborated to establish frameworks to organize cybersecurity career fields within the nation’s infrastructure. The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework, “is a reference resource for those seeking to describe the cybersecurity work their organization does, the people who will carry out the work, and the ongoing learning that will be needed to do that work effectively.” (National Institute of Standards and Technology [NIST], 2020). In addition, many universities have begun to partner with the government and industry to create efficient and coordinated educational pathways that are aligned with the NICE framework to prepare students for the impending challenges within the field. For example, the University System of Maryland (USM),

collaborated with businesses and government agencies to develop cybersecurity pathways on multiple campuses to build a diverse regional cybersecurity talent

ecosystem that can address national security needs...[by pursuing] a coordinated, system-level effort to create new cybersecurity pathways that would attract diverse students, engage them in cutting-edge learning experiences, and encourage them to build their careers in the region. (BHEF, 2017a, p. 1)

However, such educational programs leading to careers in cybersecurity are just one of many pathways available to students interested in entering the larger field of information technology.

In fact, beyond cybersecurity, a wide variety of careers comprise the information technology workforce. Some of the career fields can serve as prerequisites for entry into cybersecurity, but all of them serve critical roles in the advancement and security of the nation's technological infrastructure. According to the Bureau of Labor Statistics Occupational Outlook Handbook (2019a), the leading careers within the field of computers and information technology include: Computer and Information Research Scientist, Computer Network Architects, Computer Programmers, Computer Support Specialists, Computer Systems Analysts, Database Administrators, Information Security Analysts (the technical title for cybersecurity analysts), Network and Computer Systems Administrators, Software Developers, and Web Developers. However, the educational criteria required to qualify for positions in these fields can vary from entry-level vendor-specific software certifications to graduate-level academic degree programs.

Whether the entry-level career prerequisites consist of technical certificates alone, an associate's degree, a bachelor's degree, or graduate education, there are a seemingly endless number of educational options or combinations of options individuals can pursue

to gain entry into the IT field. For example, according to the Occupational Outlook Handbook (2019a), Computer Support Specialist positions often do not require an academic degree; technical certifications typically meet educational prerequisites for those positions. However, even when narrowing educational options to pursuing technical certifications alone, according to CompTIA (n.d.-b.), the leading information technology industry technical association, in addition to certification programs offered through universities, there are many different educational providers offering dozens of unique vendor-specific certifications. Even though CompTIA (n.d.-b) assists by categorizing certifications based upon career field and level of user expertise, individuals interested in entering the IT workforce may find the need to decide among the vast array of certification offerings to be daunting. Plus, in addition to certifications, community colleges and technical colleges offer various types of Associate of Science (AS) and Associate of Applied Science (AAS) degrees in IT-related fields, and even though competitive 4-year degree programs are becoming extremely selective to enter (Singer, 2019), numerous types of computer science bachelor's and graduate degrees and certificate programs exist and are often prerequisites for entry into some IT carrier fields.

Purpose of this Study

As a result of the need for the many talented and capable military veterans to find meaningful careers after their time in service, coupled with the reality the nation faces regarding the shortage of qualified professionals available to fill vacancies within the information technology workforce, military veterans, transitioning off of active duty, provide one viable, mature, and available population from which the nation's information

technology workforce can be reinforced (DHS, n.d.). However, due to the numerous career options and corresponding educational pathways available, even veterans who know they are interested in entering the information technology workforce after separating from the military can find themselves facing a complex maze of educational options and the need to make high-stakes decisions about which pathway and, ultimately, career to pursue.

Further, resources may not always be equally available to help veterans become informed about information technology educational and career options. While some service members specialize as information technology professionals in the military and have a sound understanding of the requirements for transitioning into a similar civilian career, those without an IT background, transitioning from unrelated occupational fields, may need assistance. In traditional higher educational institutions, academic advising and career service offices provide advice and mentorship throughout academic programs—from program selection to monitoring progress to ensure students remain on track (Tudor, 2018). Thus, unless veterans enroll in traditional 4-year institutions, they may not receive the same level of academic decision-making support. Veterans without IT career experience in the military are faced with many questions, such as: What services are available to help coach and mentor veterans who are interested in the IT field? What certifications are the most useful to pursue? Is it worth the time and resources to pursue an associate's or bachelor's degree instead of solely focusing on technical certifications?

The purpose of this study was to explore the experiences and motivational factors that have influenced decisions of post-transition veterans who currently work in the IT or

cybersecurity career fields. I specifically explored the reasons veterans decided to pursue IT-related careers, the reasons they selected their educational program to gain entry, how they described their experiences within those educational and vocational programs, and how satisfied they have been during the entry-level phase of their career. The intended outcomes of the study were to provide future transitioning veterans with additional information about their educational options regarding information technology-related career paths and to expand the knowledge and scholarship regarding military veterans' transition into higher education and the workforce.

Since 2001, the scholarship addressing topics related to veterans in higher education—and more specifically, their post-educational experiences—has been inconsistent. Molina and Ang (2017) explain, “little empirical research to date shows how veterans approach and think about higher education” (p. 86). Vogt et al. (2018) present that “a recent review of studies on the readjustment of post-9/11 veterans identified [a] lack of research on veterans’ transition experiences” (p. 2); the authors suggest one reason for such limitations may be a result of narrowly focused research topics addressing individual organizations’ interests. However, while empirical studies may be limited, within the last decade, researchers and scholars have published numerous reports focusing on veterans’ transition into higher education.

In 2011, DiRamio and Jarvis published “Veterans in Higher Education: When Johnny and Jane Come Marching to Campus,” which explores pertinent transition theories for veterans entering college as well as ideas for supporting student veterans’ academic and emotional success. The authors explain the volume “is intended to provide

useful information about students with military experience who are attending college by blending the theoretical, practical, and empirical” and the chapters “draw from the first ‘wave’ of research on this topic of college students with military experience” (p. x). Then in 2017, DiRamio published an edited volume entitled, *What’s Next for Student Veterans? Moving From Transition to Academic Success*. In this volume, the authors, “present findings from [the] second wave of research about student veterans, with a focus on data-driven evidence of academic success factors, including persistence, retention, degree completion, and employment after college” (p. xiii). One of the most significant empirical studies conducted to date that commenced the second wave of research the authors discuss was the Million Records Project (MRP), which was a collaborative initiative between the Student Veterans of America, the National Student Clearinghouse, and the U.S. Department of Veterans Affairs. The MRP “combined a national sample of one million student veterans who first used their GI Bill benefits between 2002 and 2010 with Clearinghouse [degree] completion data” (Cate, 2017, p. 141). The combination of these two data sets resulted in completion rate data and other academic outcomes for the current generation of student veterans. Furthermore, the American Council of Education (ACE) has also published a series of reports to highlight best practices for supporting veterans in higher education (Molina & Ang, 2017). However, despite the research initiatives focusing on veterans’ transition into and experiences during college,

little is known about the return on investment for the success of student veterans.

For instance, how many veterans who entered college as a result of the Post-9/11 GI Bill completed their education? What factors helped facilitate or impede their

progress? What can we learn from veterans who did not complete a four-year college education? Among colleges and universities, what practices had a direct impact on student veterans' likelihood of completing their college education? What percentage of veterans continued into graduate or professional school? These questions have not been answered by descriptive or empirical research to date. (Molina & Ang, 2017, p. 79)

In addition, during my review of the literature presented in Chapter 2, I could not find a single empirical study exploring veterans' participation in information technology educational pathways or their reasons for entering the information technology career field. The most closely related study I could find was a qualitative study, published by the American Society for Engineering Education (ASEE) in 2017, that investigated why veterans pursued engineering programs and whether their military experiences influenced their decision (Mobley et al., 2017). In the ASEE's study, *Entering the Engineering Pathway: Student Veterans' Decision to Major in Engineering*, only one of their participants majored in electrical or computer engineering and that individual had indicated interest in engineering existed prior to military service (Mobley et al., 2017). Their remaining participants majored in different engineering disciplines.

Therefore, this study addresses a gap in the literature—to explore the entirety of veterans' transition from military service, through an educational pathway, and into the entry-level phase of a career field—and will additionally be one of the first studies to explore veterans' educational experiences entering the information technology workforce.

Research Questions

To accomplish the study's aim, the unit of analysis was the successfully transitioned military veteran within the United States. More specifically, I interviewed military veterans who had recently graduated (within roughly the last 5 years) from selected educational programs who were currently working in the IT or cybersecurity career fields. I did not include veterans who served in IT-related career fields within the military; rather, I focused on including veterans who served in non-IT-related fields in the military and completed at least one of the following four educational pathways, which enabled them to work in an IT-related post-military career:

1. Vendor-provided IT certifications alone,
2. University-provided IT certification programs,
3. An associate's (2-year) degree program,
4. A bachelor's-level (4-year) degree program.

The qualitative embedded case study design (Yin, 2018) was my research methodology for the five overarching research questions I explored:

1. Why do transitioning military veterans decide to pursue an IT or cybersecurity career field?
2. Why do transitioning military veterans pursue the educational pathways they select for entry into these fields?
3. What are veterans' experiences during the educational pathway they select?
4. How satisfied are military veterans after completing their transition into these fields?

5. What are veterans' future career goals after completing the entry-level phase within these fields?

Definition of Key Terms

The following terminology is used in specific ways for this research.

- Case study – A social science research method, generally used to investigate a contemporary phenomenon in depth and in its real-world context (Yin, 2018, p. 286).
- Embedded case study design – a single-case study design that involves “units of analysis at more than one level [embedded units of analysis]” (Yin, 2018, pp. 51-52).
- Embedded unit of analysis – A unit lesser than and within the main case in a case study, from which data are also collected (Yin, 2018, p. 287).
- Information technology workforce – for the purposes of this study, the fields within the Bureau of Labor Statistics' Computer and Information Technology Occupations: Computer and Information Research Scientist, Computer Network Architects, Computer Programmers, Computer Support Specialists, Computer Systems Analysts, Database Administrators, Information Security Analysts, Network and Computer Systems Administrators, Software Developers, and Web Developers.
- Post-transition veteran – a United States military service member who has transitioned out of the active duty or reserve forces.

- Semi-structured interviews - interviews that are “guided by a set of questions and issues to be explored, but neither the exact wording nor the order of questions is predetermined” (Merriam & Tisdell, 2016, p. 136).
- University-provided certificate programs – academic programs offered by colleges or universities (usually within the computer science department) that offer a certificate upon graduation, but not a formal degree.
- Vendor-provided certifications – a certification from computer software or hardware vendors that certifies an individual’s proficiency to a specified level on a particular IT-related product or process.

Chapter Two. Literature and Pathways

In this chapter, I address three main topics. First, I discuss a research study conducted by the Institute for Veterans and Military Families at Syracuse University that highlighted the top five challenges influencing veterans' post-military career decisions in recent years. Second, I review the literature regarding the theoretical basis underpinning military transitions. I close the chapter with a discussion surrounding the information technology industry and educational pathways available for aspiring IT professionals to join its ranks.

Challenges Influencing Veterans' Post-Military Career Decisions

Throughout the more than decade of war America has experienced in the 21st century, the country has maintained an all-volunteer military force. Along with the option to join the military service, once service commitments are met, veterans also enjoy the opportunity to leave the military if they so choose. During the three-year period from 2015 through 2017, an average of 183,157 service members separated from the active duty forces each year in the United States and an average of 123,890 transitioned out of the available reserve forces (DOD, 2017, pp. 60, 119). In total, that is an average of 307,047 transitioning service members per year, or roughly 1,181 individuals per day (not including weekends). Using 2017-specific data, Figures 1 and 2 elaborate upon the various types of veterans' separation from the military. With over 1,000 new separations

on average per day, there is no question about the magnitude of the challenge the nation's veteran-serving organizations face to help reintegrate so many individuals back into civilian society.

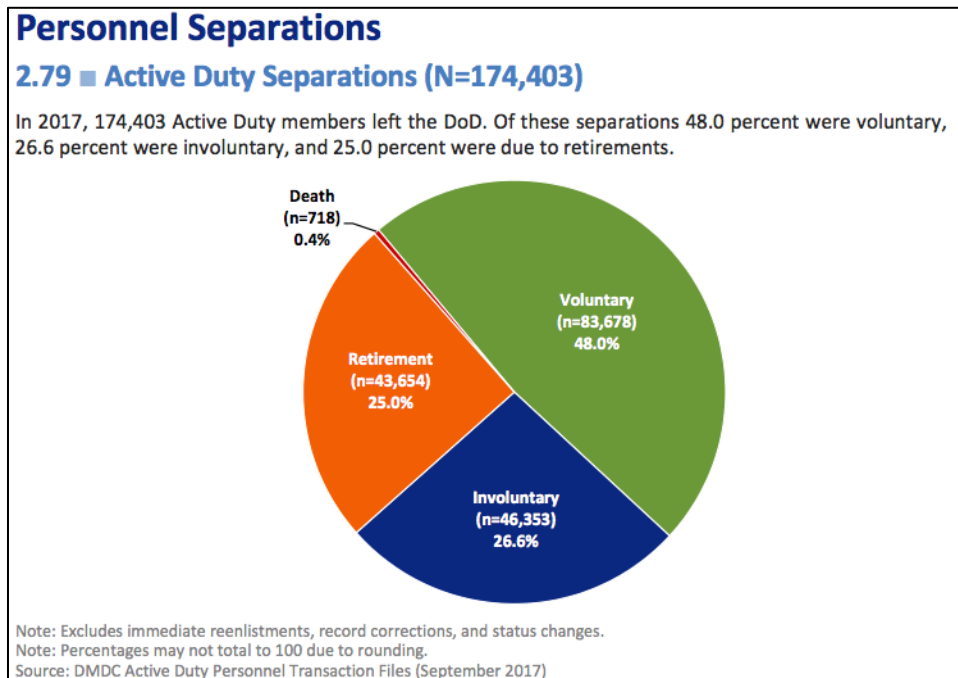


Figure 1

Active Duty Military Separations in 2017

Note. From *2017 Demographics: Profile of the Military Community*, by DOD, 2017, p. 56 (<http://download.militaryonesource.mil/12038/MOS/Reports/2017-demographics-report.pdf>).

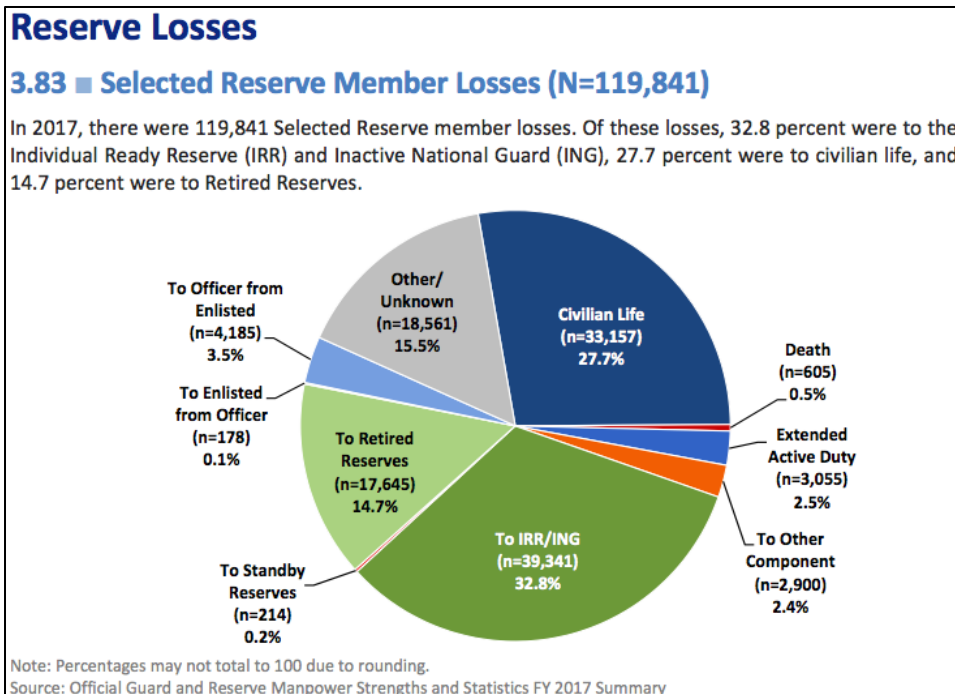


Figure 2

Reserve Separations in 2017

Note. From *2017 Demographics: Profile of the Military Community*, by DOD, 2017, p. 114 (<http://download.militaryonesource.mil/12038/MOS/Reports/2017-demographics-report.pdf>).

When considering the vast number of Americans separating from the military each year and their post-transition options, it is important to note that there is no one-size-fits-all experience of military service. Some active duty service members enlist after completing high school, serve approximately four years, and depart the service to attend college, move back to their hometown to rejoin previous career interests, or enter the workforce in a new field or area. Others complete at least a bachelor's degree before serving, are commissioned as military officers, and spend decades on active duty. Still others join the reserve or National Guard forces to serve part-time until periods of "activation," where they serve full-time for designated periods, but attempt to

simultaneously remain involved in a parallel career in the civilian sector. Some service members deploy overseas or experience direct combat, while others might not. Some have highly specialized science, technology, engineering, and mathematics (STEM)-related vocations in the military while others' duties may be more physically demanding. These are just some of the extreme perspectives; there are an endless number of combinations of service time and responsibilities in between. Therefore, when considering veterans' departure from military service and beginning of a new phase of life, every situation is different and, thus, there is also no one-size-fits-all solution for veterans' transitions.

Despite the vast number of veterans in America and their affiliation with the U.S. Department of Veterans Affairs (VA) and other veteran service organizations, until 2015, the publication of valid and reliable research on military veterans' transition experiences had been sparse (Zoli et al., 2015). However, in 2013, the Institute for Veterans and Military Families (IVMF) at Syracuse University initiated a large-scale research agenda primarily intended to "highlight the breadth and diversity of...transitioning servicemembers and veterans, in the context of their first-hand, lived experiences across multiple role identities including warfighter, family member, student, and community leader, among others" (Zoli et al., 2015, p. 1). With over 8,500 veterans, active duty service members, members of the National Guard and reserve, and military-connected family members responding to surveys, this research has provided "arguably one of the most sweeping datasets to date representing the lived experiences of [the] latest generation of veterans and family members" (p. 1) and directly addressed veterans'

motivations for transitioning as well as the challenges they faced throughout the transition process. While the majority of respondents reported positively about their military service and would return if they had the opportunity, according to the IVMF study, the top five reasons veterans decided to leave the service when they did included:

1. A loss of faith or trust in military or political leadership,
2. To pursue education or training opportunities outside of the military,
3. For family reasons,
4. Completion of military service obligation (for those who served less than 20 years), and
5. Military retirement (for those who served 20 years or more). (Zoli et al., 2015, p. 27)

Even though the first reason on the list was the only negative aspect, some respondents in the survey acknowledged that once they grew in their post-military professions, they realized why many decisions had been made that they may not have agreed with or understood at the time (Zoli et al., 2015).

Regardless of the reasons veterans depart the military, transitions to college or into new career fields can be difficult. Even when considering individuals who have not served in the military, significant life transitions such as the beginning of a 4-year college degree can be challenging (Stephens et al., 2015). So, in addition to transition stresses faced by most individuals, service members' transition challenges can be exacerbated as a result of the significant contrast between their life experiences and vocational responsibilities while in the military in relation to the vastly different lives they find in

civilian society (Mobbs & Bonanno, 2018). Military veterans “bring life experiences that few traditional-age students or, for that matter, faculty members, campus staff, or administrators can relate to or claim for themselves” (DiRamio & Jarvis, 2011, p. ix). Plus, while they may only affect a minority of veterans, the extreme challenges some military veterans face, such as post-traumatic stress or the physical and psychological trauma experienced as a result of war, may create seemingly insurmountable obstacles during and after transition (DiRamio & Jarvis, 2011; Mobbs & Bonanno, 2018). However, regardless of the level of injuries sustained in the service, many veterans do face transition stress as they depart the military (Mobbs & Bonanno, 2018).

Mobbs and Bonanno (2018) found that during transition, veterans may struggle with a variety of concerns

including unresolved or prolonged grief and bereavement over fallen comrades, loss of their previous military identity, nostalgia for the order and purpose that characterized their service experiences, a sense of moral injury, confusion about military–civilian differences, and changing masculine roles. (p. 139)

While such psychological factors are undoubtedly at play in the lives and minds of transitioning veterans, the IVMF study also identified a list of more tangible problems veterans face. In that study, respondents were asked to select from a list all the “key challenges” they experienced during their transition. By far, the highest selected choices were navigating the Department of Veterans Affairs administration or benefits processes (60%) and finding employment (55%); however, the remainder of the top 5 challenges

included: getting socialized into civilian culture, skills translation to civilian sector employers, and financial struggles—topics that I explore next.

1. Navigating the Administrative Challenges of Obtaining Veterans Benefits

The U.S. Department of Veterans Affairs has faced challenges in the last decade (Horton, 2018; Pearl, 2018; Slack & Wagner, 2018). Mainstream media has publicized the leadership and technological challenges which the organization, and the veterans it serves, have faced. Since 2014, there have been eight Secretaries appointed to the office; the first two were relieved of their duties at the direction of the President. While the problems facing the VA have been widespread at times, two of the most publicized shortfalls in recent years have been the excessive wait times for VA medical care and the significantly late payments of veterans' educational benefits, which has had a significant impact on many student-veterans' financial security (Horton, 2018; Pearl, 2018; Slack & Wagner, 2018). While these are just two examples of the reported inefficiencies within the department, they are indicative of larger problems veterans have encountered when attempting to use their earned benefits.

However, in their 2018 report on the military to civilian transition, the Department of Veterans Affairs acknowledged these challenges directly and has implemented initiatives to help ease the administrative burden on individual veterans when applying for benefits (VA, 2018). First, the VA and interagency partners have recently solicited feedback from transitioning service members as they complete the, now required, Transition Assistance Program (TAP) to improve course offerings and try to mitigate veterans' transitional challenges. Initially implemented in 1991, and vastly

improved because of the Veterans Opportunity to Work (VOW) to Hire Heroes Act of 2011, “interagency partners redesigned TAP into a cohesive, modular, outcomes-based program that standardized transition opportunities, services, and training to better prepare the nation’s Service members to achieve their post-military career goals” (VA, 2018, p. viii). Today, the TAP courses “cover a range of topics, including personal finance, employment workshops, military skills crosswalk, and benefits available for Veterans. The optional two-day transition training tracks cover higher education; employment and vocational training; and entrepreneurship” (VA, 2018, p. 11).

Since veterans’ benefits awareness and application is only one of many topics covered within the TAP curriculum, the VA has also implemented other initiatives to directly address those challenges. For example, the VA has embedded a Transition and Care Management Team within each VA medical center that provides case managers to specifically help veterans “coordinate patient care activities and navigate the VA health care system” (VA, 2018, p. 15). In 2017, the VA also implemented the Concierge for Care (C4C) health care enrollment initiative to specifically help veterans navigate VA health care enrollment application processes within 30 days of their military separation date (VA, 2018). Plus, in addition to VA-funded initiatives, the military services, state and local-level governments, higher education institutions, and nonprofit veterans service organizations have also taken additional steps towards helping veterans navigate the array of procedures required to access VA benefits. For example, with chapters serving almost every college campus in the nation, the Student Veterans of America (SVA) is a national-level nonprofit organization aiming

to inspire yesterday's warriors by connecting student veterans with a community of like-minded chapter leaders. Every day these passionate leaders work to provide the necessary resources, network support, and advocacy to ensure student veterans can effectively connect, expand their skills, and ultimately achieve their greatest potential. (Student Veterans of America, 2020, para. 1)

However, like the TAP courses, in addition to benefits application and administration, these various services also aim to help veterans address other challenges throughout their transition.

2. Finding Employment

The second most significant challenge veterans reported facing in the IVMF study was finding post-military employment. Another large-scale study, conducted by Prudential Financial (2012), found similar results with 69% of their over 2,400 respondents reporting that finding a civilian job was the greatest challenge when transitioning to civilian life—even above navigating the VA benefits process (which was listed second; p. 4). Minnis (2017) further affirmed that even for transitioning service members who did not sustain serious injuries during their time in the military, “one of the most significant challenges...veterans face is in finding and securing careers in the civilian employment sector after their military service has ended or between deployments with the National Guard or military reserves” (pp. 3-4). However, there are many factors that contribute to veterans' successful attainment of employment immediately upon separation from the military, such as their career goals, the level and type of education attained prior to or during veterans' military careers, their experiences and type of work

accomplished while in the military, the location in which they wish to reside, and their desired quality of life or salary level required to maintain a similar quality of life to what they experienced in the military.

There are many resources aimed at helping military veterans attain meaningful employment after separation. While the VA's contributions to the TAP course mentioned above are significant, the overarching program is ultimately governed by Chapter 58 of Title 10 U.S.C. (2018) and managed by the Office of the Secretary of Defense, Transition to Veterans Program Office (TVPO; DOD, 2018b). The TVPO, in collaboration with the military services and interagency partners, ensures the TAP

provides information and training to ensure Service members transitioning from active-duty are prepared for their next step in life—whether pursuing additional education, finding a job in the public or private sector or starting their own business. TAP is a cohesive, modular, outcome-based program that bolsters and standardizes the opportunities, services and training that Service members receive to better prepare them to pursue their post-military career goals. (DOD, n.d.)

Thus, in collaboration with the TVPO, each of the military services is responsible for facilitating TAP seminars and providing other transition assistance services for their separating service members—whether active duty, reserve, separating after one tour, or retiring from a career. Further, in addition to DOD, the military services, and the VA, other agencies such as the U.S. Small Business Administration, Office of Personnel Management, and Departments of Labor and Education all contribute training and

educational resources in support of transitioning veterans as components within the TAP curriculum.

However, federal agencies and the military are not the only organizations providing resources to help transitioning veterans find employment. Within the last two decades, countless nonprofit and industry-provided organizations have answered the call to assist military veterans. One of the most prominent is the Institute for Veterans and Military Families (IVMF) at Syracuse University, which “is the first interdisciplinary national institute in higher education focused on the social, economic, education, and policy issues impacting veterans and their families” (n.d., para. 1). Providing groundbreaking research, input to legislation, vocational and professional certification preparation programs, and collaborative initiatives with industry and government partners, the IVMF has improved the lives of thousands of veterans and their family members through employment and other types of assistance since its formal inception in June of 2011 (IVMF, n.d.). Examples of some of the programs IVMF provides include Onward to Opportunity (O2O), which is an online courseware delivery system aimed at preparing veterans for professional certifications and job readiness; VETNET, which is an online networking and career research tool; plus, IVMF offers a series of entrepreneurial workshops and courses—some are offered in conjunction with organizations such as the U.S. Small Business Association. Another popular nonprofit organization helping veterans is the U.S. Chamber of Commerce Foundation’s Hiring our Heroes Corporate Fellowship Program, which is an “innovative program that provides transitioning service members with professional training and hands-on experience in the

civilian workforce....[thus preparing] candidates for a smooth transition into meaningful civilian careers” (Hiring our Heroes, 2019). A third organization making a significant impact in the veterans’ career transition challenge is Hire Heroes USA—another nonprofit that has placed over 30,000 veterans since its inception in the 2004 timeframe (Hire Heroes USA, 2019). But these are just three examples of an endless number of nonprofit organizations—some large national-level and some small grassroots-level organizations—focused on helping veterans find meaningful post-military work.

Corporate America has also become involved in the veterans’ transition effort. From numerous veteran-focused hiring and placement agencies to education and mentorship programs, and employer-provided post-employment assistance, industry partners are also playing an instrumental role in helping the nation’s veterans find meaningful long-term employment options. For example, beginning in 2011 as the 100,000 Jobs Mission with 11 initial company partners, such as JPMorgan Chase & Co., AT&T, and Cisco Systems Incorporated, these companies originally committed to hire 100,000 veterans by 2020 (Veteran Jobs Mission, 2011). The program has since been renamed the Veteran Jobs Mission and has grown to a coalition of over 200 member companies that represent virtually every industry in the United States economy. The coalition of companies has collectively hired more than 500,000 veterans to date and have increased their goal to hire one million veterans (Veterans Job Mission, 2018). Several years into the program, many companies have realized a need to go beyond, to not only recruit military veterans, but also to incorporate longer-term career growth,

mentorship, and professional development strategies aimed at retaining veteran talent (Haynie, 2016; Veterans Job Mission, 2018).

Within industry as well as nonprofit or governmental organizations, human resource development (HRD) professionals also offer solutions to help in the retention and sustainment of the veteran workforce by providing a blend of research and counseling. HRD professionals can “provide career development, organizational education, and hiring support to create broader understanding about veterans in the civilian workplace in addition to easing the career transition process for veterans” (Minnis, 2017, p. 4). Such resources are particularly valuable when addressing two of the remaining top five challenges veterans reported in the IVMF study: cultural differences and skills translation.

3. Cultural Differences

NOW this is the Law of the Jungle — as old and as true as the sky; And the Wolf that shall keep it may prosper, but the Wolf that shall break it must die. As the creeper that girdles the tree-trunk the Law runneth forward and back —For the strength of the Pack is the Wolf, and the strength of the Wolf is the Pack.

— Rudyard Kipling, *The Second Jungle Book* (2008, pp. 39-40)

When used in association with the norms of military culture, this excerpt from Kipling’s classic, *The Jungle Book*, may exaggerate individuals’ commitment to military organizations—especially when considering the cultural differences between the various branches of the military service. However, senior leaders have used the quotation somewhat commonly in published guidance to military forces when discussing organizational matters (at least the last line). While the notion of the pack coming before the wolf, or the unit coming before the self, may or may not resonate with typical

Americans when considering an affiliation to their workplace, many service members and veterans would likely agree that it resonates clearly regarding their affiliation to their military unit or team. In fact, one of the very basic foundations of cultural transition into the military service—experienced by service members during the completion of some form of recruit training or “boot camp”—is to deemphasize sentiments of American individualism and to instill a value of putting team members’ needs before their own. Thus, “unselfishness” is considered a virtue and is an expected leadership trait within the military that permeates daily life for many service members.

While the notion of living a life that serves society may be espoused by Greek philosophers (Graham, n.d.) and President John F. Kennedy in his 1961 inaugural address (National Archives, 2022), and is clearly represented among teachers, police officers, firefighters, and within the nonprofit sector throughout America, most Americans would likely agree that these notions may not always be the cultural foundation of many workplaces in the country. Generally speaking, the individual liberties and unalienable rights espoused by the U.S. Declaration of Independence and notions of individual initiatives and decisions associated with capitalist market principles are more likely to be encountered within the average American corporation. One of the most distinct differences veterans must realize when entering the private sector workforce is the necessary emphasis on the business *for-profit* focus, which may seem foreign to veterans during transition, but is essential to keep businesses operating.

From an even more tangible perspective, when considering the cultural differences between life in the military service and average daily life in American

society, or more specifically the unique corporate cultures experienced within individual work environments, veterans typically face drastic changes during transition. From the language used and clothing worn, to the type of work performed and freedom of choice associated with determining work schedules, salary negotiations, benefits and retirement plan selections, and myriad other decisions—veterans must now evolve to assimilate into the American workforce. Therefore, given these differences, it should come as no surprise that researchers find

veterans are often stymied by the experiences and expectations they experience in the civilian work-force. Misunderstandings and misconceptions plague both military veterans and civilian employers in the hiring and employment processes leaving each side wondering how to effectively bridge the cultural divide.

(Minnis, 2017, p. 4)

Cultural differences are not the only variable at play. Translating the relevance of military skills and experiences to the civilian work sector is also paramount and the next challenge veterans claimed in the IVMF study.

4. Skills Translation and Career Expectations

For military professionals, it would be considered laughable to have an individual from another industry join the military ranks mid-career, fully expecting to be placed in a position of significant responsibility. However, when military professionals depart the ranks and enter into the American workforce, many veterans fully expect to do just that. Fortunately, the leadership and managerial experiences (among other “soft skills”) gained during years in the service are very transferrable, but veterans can remain at a

disadvantage in comparison with individuals who have risen through the ranks of any particular career field due to their industry-specific experience and developed intuition. Moreover, as some researchers present, “the military trains service members to do a specific job that in many cases arguably cannot be done, or its skills transferred, outside of the military” (Zogas, 2017, p. 13).

But even in cases where skills are relevant, veterans’ ability to translate the skills they learned and applied during military service to civilian sector employers can be a significant challenge. Researchers at the RAND Institute found that “one challenge identified by veterans and employers alike is communicating how the skills and qualifications gained in the military through formal courses and on-the-job training apply to civilian workplaces” (Guo et al., 2016, p. 8). Even while organizations such as Military.com and the U.S. Department of Labor have developed online tools to help veterans translate the skills gained within their military specialties to a comparable civilian-sector vernacular, “what military translators lack is information for veterans about how to understand their nontechnical skills and identify employment opportunities in new career areas based on those skills” (Davis & Minnis, 2017, p. 8). Furthermore, beyond mere translations of skills, “interviews with case managers showed that veterans have unrealistic expectations of how their skills will transfer to the civilian job market” (Zogas, 2017, p. 5).

In addition to misunderstanding skills requirements, many veterans struggle with the expectations regarding the scope of post-military employment responsibilities as well as their perceived significance of work within the civilian employment sector. With each

new assignment in the military, service members typically gain increased leadership responsibilities. At the time of transition, many veterans are leaving from positions with significant managerial and supervisory experience over other employees, only to find those skills cannot be immediately applied within a new industry. Service members also commonly feel their work performed in the military is significantly important and struggle to find a similar sense of purpose after transitioning out of the service. Mobbs and Bonanno (2018) described several studies associating grief symptoms

with loss of important aspects of the self, indicated by the intensity of the person's beliefs about the general merit of work in life and the perceived significance of the previous job. Moving from a highly significant job to a more menial job either as a placeholder before moving on to higher education, trade school, or as a means of making ends meet potentially manifests conditions which highlight the inherent differences in military and civilian contexts. (p. 139)

Such perceptions not only affect many veterans' psychological states and sense of purpose, but taking lower paying "underemployed" positions can also lead to financial hardships that contribute to veterans' fifth most commonly cited transition challenge in the IVMF study.

5. Financial Troubles

Despite the numerous benefits offered to veterans through the Veterans Affairs' programs as well as other assistance available to transitioning service members, the majority of veterans still report experiencing financial problems during or after their transition out of the military (Zoli et al., 2015). Some of these challenges that have

particularly affected student veterans have been attributed to the flawed administration and payment of GI Bill benefits. For those not attending college upon separation, many veterans have reported challenges finding suitable employment, which resulted in needs to accept entry-level positions, low wages, and ultimately led to financial instability (Zogas, 2017). Yet, even with the improvements that have been implemented within the TAP program in recent years, “the program’s effectiveness is limited by its brevity, and by the fact that veterans complete the training in the weeks before they are released from their military contracts: they are excited, distracted, and generally unconcerned with finding work immediately” (Zogas, 2017, p. 5). Overall, veterans are not prepared for the transition away from the stable and predictable financial circumstances experienced on active duty compared to the financial realities they may face upon separation.

Keeping these five common challenges experienced during veterans’ transition plus the multitude of educational, career, and medical benefits afforded to veterans in mind, the next topics to consider are the theoretical foundations and psychological underpinnings of any career transition, but particularly the framework supporting veterans’ transitions. Knowing that “the programs, services, and methodology of military to civilian transition assistance continue to evolve with data-driven research and stakeholder experiences” (VA, 2018, p. viii), and further realizing that “no single agency or organization has the manpower, resources, or intellectual capital to provide a lifetime of care and support to our military family” (p. ix), one critical variable that must still be considered is the source of advice upon which service members rely to help them make the decisions they do prior to and during transitioning out of the service.

Therefore, before addressing the specific needs of the information technology and cybersecurity workforce and how veteran talent may be able to contribute in that arena, it is necessary to explore the source of advice and guidance for those departing the military. Whether academic advisors or career counselors at academic institutions, industry partners or recruiters, veteran service organization consultants, or senior mentors within the military ranks, sound career counseling and academic advising are necessary components of a veteran's successful transition and serve as a foundational element of transition decision making.

Theoretical Basis: Career Transition Theories for Military Veterans

When considering the exploration of veterans' career decision making during their transitions out of the military service and back into American society from a theoretical perspective, there are various expansive bodies of literature to consult. The fields of vocational psychology (Walsh & Savickas, 2005), the psychology of working (Blustein, 2013), and industrial-organizational psychology (Wiernik & Wille, 2015) all address career decision making, among a myriad of other topics. Similarly, the literature within both the field of career development and the practice of career counseling focuses on similar topics but appears to take a more narrowed approach towards the advising and decision making of individual's career development throughout the entirety of their lives (Brown & Lent, 2013; Eliason et al., 2014). Regardless of individual disciplines' interpretation of or exploratory approach taken towards theoretical precedent, however, the names of several prominent researchers routinely appear throughout the various bodies of knowledge.

While the categories used to describe the theoretical perspectives are not entirely consistent from one researcher to the next, career development theories do generally fall within one of three areas: establishing a match between an individual's personal traits with those commonly associated with others within a particular career field, the developmental stages individuals experience throughout typical career paths, or the manner in which individuals learn and mature cognitively throughout their lives. For example, one of the most commonly discussed developmental theories is Donald Super's Life-Span, Life-Space Theory that "maps out a multitude of developmental tasks, different roles that comprise a career, and places where [individuals] act out career behaviors" (Wilson & Hutchison, 2014, p. 29). Another mainstay of career development and decision-making literature is John Holland's Theory of Person-Environmental Fit, where he identifies six personality types and six types of work environments and theorizes that individuals seek out and behave uniquely, and most productively, in environments that match their personality characteristics (Wilson & Hutchison, 2014). A third name routinely seen throughout the literature is John Krumboltz, whose Social-Learning Theory of Career Choice focuses on the processes undertaken and variables at play that influence individuals' career choice and surmises that individuals' personality and behavior are developed as a result of learning experiences rather than innate characteristics (Rullo & Madia, 2014). And there are dozens of others that fall within these or related categories.

However, when analyzing the many variables that can influence an individual's decision to change careers, and particularly when reviewing studies related to military

transition, one of the most holistic and commonly cited theoretical models to consider is Nancy Schlossberg's Theory of Adults in Transition (Anderson et al., 2012; Rullo & Madia, 2014; Schlossberg, 2011). In the 1960s, recognizing that the prominent stage theories of that time did not always fit the situations of adults who were transitioning careers for a variety of reasons at varying times throughout their lives, Schlossberg explored numerous facets of adults in transition, which resulted in her now well-established theory (Rullo & Madia, 2014). The strengths of Schlossberg's model are that she recognizes career transitions take time, that they are an ever-evolving cycle of change (Anderson et al., 2012), and that the stresses that emanate from such change are not a result of the transition per se, but rather "how much it alters one's roles, relationships, routines, and assumptions [of daily life]" (Schlossberg, 2011, p. 159). The weakness of this model, solely for the purposes of this study, is that it does not specifically address reasons why individuals make career-related transition decisions.

Schlossberg's Theory of Adults in Transition

According to Schlossberg's model, it is important to recognize that individuals' perspectives regarding and responses to transitions can largely be affected by both the impetus for the transition as well as the position where individuals find themselves at any given point within the transition cycle. Schlossberg organizes the types of transitions in three ways:

- *Anticipated* transitions are major expected life events, such as graduating from school, getting married, becoming a parent, and planning to separate or retire from the military.

- *Unanticipated* transitions refer to sometimes-disruptive events that occur unexpectedly, such as health problems or serious injuries, loss of a loved one, promotions, or company-wide layoffs.
- *Nonevent* transitions are anticipated transitions that fail to occur, such as not receiving an expected job offer or promotion, canceling a planned wedding, lacking financial resources to retire or execute other career plans.

(Schlossberg, 2011)

And while the type of transition can drastically influence an individual's reaction—either good or bad—again, the type of transition itself is not necessarily a potential stressor. A person's experience resulting from a transition is more so influenced by the individual's perspective of the transition and the magnitude to and manner in which his or her roles, relationships, routines, or assumptions have been affected (Anderson et al., 2012; Rullo & Madia, 2014).

But along with the underlying reason for the transition, another factor that can affect an individual's perspective of change is tied to the timing where the individual is within the transition process, such as: still planning, early on in the progression, or several years after the change has occurred. Anderson et al. (2012) articulate the progressive segments as well as the cyclical nature of Schlossberg's transition model by using a three-phased approach—moving-in, moving-through, or moving-out—and recognize that an individual's perspective can change drastically as time elapses. Explaining that individuals do not enter or exit the model at any particular phase, but rather continuously remain within an element of the ever-evolving cycle, the authors

describe *moving-in* as times when new roles, relationships, routines, or assumptions are formed; when a novel situation requires an individual to learn new social or procedural information; and times when individuals may hold on to former identities during a transition regardless of whether or not the identity is still applicable (Anderson et al., 2012). When a person becomes accustomed to a new situation, he or she has entered the *moving-through* phase. As the new environment has become the norm, new challenges may also emerge.

Some adults may no longer be challenged in the setting and become complacent and bored. Others may feel restless at the same lack of challenge and begin to wonder how long they can sustain in the setting. Still others may question the prior decisions that have led them to their current environment. (Rullo & Madia, 2014, p. 56)

However, others may assimilate seamlessly and feel at home in their new circumstance with few, if any, perceived challenges. They may experience a sense of renewal, hope, or even spirituality (Anderson et al., 2012).

The third phase of the cycle—*moving-out*—“can be seen as ending one series of transitions and beginning to ask what comes next” (Anderson et al., 2012, p. 70). Individuals may experience feelings of excitement or anticipation of change during this phase, but they may also experience a sense of loss or grief due to the ending role or relationships. Where one iteration of the cycle closes, another begins, and the ever-evolving transition cycle continues.

In addition to the type of transition and position within the transition cycle, according to Schlossberg, a third set of variables that not only affects an individual's perspective regarding a transition, but also can be used as coping resource for counseling intervention, are the elements categorized as the 4 Ss, or situation, self, support, and strategies (Anderson et al., 2012; Rullo & Madia, 2014; Schlossberg, 2011). The *situation* surrounding an individual's transition refers to the following characteristics: the trigger, timing, and duration of the transition; the individual's level of control over change; changes in roles or responsibilities; previous experiences with similar transitions; concurrent stresses; and the individual's assessment of the situation (Anderson et al., 2012). The second of the four variables, *self*, relates to an individual's basic demographics, such as gender, age, ethnicity, health, and socioeconomic status, as well as her or his psychological characteristics, meaning an individual's inner-strength, overall outlook on life, and level of optimism. The third variable deals with the level and types of *support* afforded to an individual at or during the time of transition. Types of support may include family, friends, colleagues, supervisors, professional networks or organizations, as well as community, or potentially even cultural support. Support may also include the options available to an individual within a particular career field or industry (Anderson et al., 2012). And the fourth variable consists of the *strategies* individuals can use to help alleviate stress throughout the turbulent period of a transition cycle.

Pearlin and Schooler (1978) classified coping strategies as those that try to change the situation (e.g., brainstorming or legal action), those that try to reframe the situation (e.g., trying to see opportunities that might occur from not getting a

promotion), and those that help reduce stress (e.g., meditation, exercise). There is no single magical coping strategy. Rather, the person who flexibly uses lots of strategies will be better able to cope [with transition]. (Schlossberg, 2011, p. 161)

Ultimately, along with the type of transition and the position within the transition cycle, the 4 Ss offer a framework of variables upon which researchers can rely to explore career-transition decision making.

Schlossberg's Theory: Veterans' Transition to Higher Education. Researchers have demonstrated the applicability of Schlossberg's transition model in various settings. When specifically focusing applying Schlossberg's model to military veteran populations, most studies have focused on veterans' transition out of the military an into higher education settings, rather than directly into the workforce. For example, DiRamio et al. (2008) followed a grounded theory approach to holistically explore the challenges military combat veterans experienced during their transition from active duty to college. The researchers applied Schlossberg's transition framework of "moving-in – moving-through – moving-out" to categorize themes that emerged from participants' perspectives in both settings: first, when they were still in the military and, second, as college students. However, in college settings, the authors solely focused on the "moving in" perspectives, since the students had not yet experienced the latter phases. DiRamio et al. identified 16 themes that fit into one of the three phases of the model and, overall, the findings identified the "need for a comprehensive and holistic system for assisting veterans" (2008, p. 92) on college campuses. More specifically, the authors proposed the need for a *transition coach* to help veterans "deal with administrative hurdles, offer academic

advice, and provide for the emotional aspects of a transition to civilian life [on college campuses]” (p. 94). While the authors did not specifically call out the association with Schlossberg’s 4 S model, the solutions proposed to assist veterans in this study primarily fell within the category of *support*.

In a second study, Griffin and Gilbert (2015) highlighted that even though veterans’ access to higher education had increased since the inception of the Post-9/11 GI Bill in 2009, their college completion rates remained a concern. However, “previous discourse and research on returning veterans [had] largely focused on academic performance and mental health challenges rather than offering a comprehensive understanding of their college transitions [citing the DiRamio et al. 2008 study]” (Griffin & Gilbert, 2015, p. 71). Therefore, the authors took an institution-wide approach to analyze the stakeholders and resources available to veterans on college campuses and used Schlossberg’s transition theory “to explore how institutions can facilitate successful transitions to higher education” (p. 76).

In this qualitative study, the researchers identified three overarching themes regarding the areas in which institutional efforts can help or hinder veterans’ transition to college: the degree to which campus personnel and services representatives understood veterans’ perspectives and common challenges, the ways institutional structures facilitated veteran-specific needs and tracked individual’s progress, and the opportunities for veterans’ social and cultural support on campus. When considering Schlossberg’s *situation* variable, two primary concerns emerged: timely receipt of financial benefits and the management of students’ expectations regarding transfer of credits from prior

institutions or the allocation of credit for prior experience. Consistent with previous research, the authors posit that an “institutional point person to coordinate services” (Griffin & Gilbert, 2015, p. 91) could mitigate these situational concerns. When considering the *support* variable, the findings in this study varied widely based upon the individual veteran’s needs and interests.

Thus, perhaps one of the most important findings of this study is that there can be great diversity within the student veteran population, and other identities and responsibilities may be more salient than one’s military experiences. While some may feel their identity as a veteran is salient and want to connect to others with similar experiences, others may perceive their transition as being more similar to others entering higher education, and simply want to better manage the situation, understand bureaucratic processes and get access to their benefits in a timely manner. (p. 92)

When considering the *self* variable, or the institution’s ability to foster students’ coping abilities, most institutions did provide some sort of psychological and academic support services. However, despite administrators’ good intentions, most institutions also lacked the resources or policies to track students’ use or application of these resources. And finally, when considering *strategies*, veteran-specific initiatives, such as Student Veterans Offices, not only provided opportunities for social support, but also “were useful in promoting information seeking and helping veterans take direct action” (p. 93).

In a third study, Jones (2017) used Schlossberg’s transition theory as a point of departure to explore military veterans’ transition into community college settings, but

ultimately built upon her and other college transition theories to propose a new theory—more narrowly focused on transitions into the community college setting. In this qualitative study, Jones (2017) interviewed five community college student veterans and identified “six themes related to how they transitioned through initial enrollment [and] through the end of their first semester of coursework” (p. 112). While this cohort of nontraditional community college students expressed much less interest in interacting with other students or student organizations on campus (including other veterans) than what is perceived at 4-year institutions (potentially a *strategy* variable), several of the students’ concerns were similar to what has been reported in other studies. All of Jones’ (2017) participants “expressed difficulty in adjusting to the college classroom environment” (p. 115)—primarily due to their age and maturity-level differences with traditional-aged students (*situational* and *self* variables). While the students’ family members provided “significant support” (p. 114) during the veterans’ transition into higher education, the top concern identified in Jones’ study was a lack of dedicated veteran-specific assistance on campus. Overall, the author’s primary recommendation was for community colleges to create a “dedicated Office of Veterans Affairs” (p. 120), staffed by full-time employees to help students’ navigate the transition into higher education (a *support* variable).

Schlossberg’s Theory: Veterans’ Transition to Workforce Setting. In addition to the more commonly found studies analyzing veterans’ transition into higher education, Schlossberg’s model has also been applied to studies exploring veterans’ transition directly into vocational settings. While an explicit alignment of their findings with

Schlossberg's model was not presented, Robertson and Brott (2014) did use Schlossberg's model as a conceptual framework upon which to establish their study. Following a quantitative survey research methodology, the authors administered two previously established assessment instruments—one focusing on career-transition and the other on life-satisfaction—to their sample of 136 military veterans who had transitioned into K-12 teaching positions (or were in the process of doing so). The researchers measured participants' beliefs about readiness (preparedness), confidence (belief in one's ability to manage the process), control (individual input and influence over the process), perceived support (whether important people in one's life are supportive), and decision independence (impact of decisions on others; Robertson & Brott, 2014). After analyzing the results of bivariate correlations between participants' responses on scaled scores and a multiple regression analysis on the same to explore the amount of influence each variable contributed to veterans' level of post-transition life satisfaction, statistically significant findings did emerge. Specifically, the participants "indicated that their control and confidence throughout the transition process was slightly correlated with life satisfaction. Results [also] indicated that their control and readiness during the transition process may explain a small portion of their life satisfaction" (Robertson & Brott, 2014, p. 146). When considering the 4 S framework, unlike the studies exploring veterans' transition to higher education where *support* variables were most sought after, this older cohort of veterans transitioning into the workforce revealed that control (a *situational* variable), confidence (a *self* variable), and readiness (a *strategy* variable) were most related to their levels of post-transition life satisfaction.

In a second study, Johnston et al. (2010) examined the greatest concerns of retiring U.S. Marine Corps Non-Commissioned Officers (and two of their spouses) prior to their transitions out of the military and into the civilian workforce. The researchers conducted a qualitative thematic analysis of data collected from 12 individuals who participated in one of three focus groups during their attendance at the mandatory service-provided Transition Assistance Program (TAP) transition course. Johnston et al. (2010) identified several subthemes in their study that were organized into three major themes and then aligned them with one of Schlossberg's 4 Ss: economic concerns (associated with *situational* variables); cultural, community, or institutional concerns (primarily articulated as *self* variables); and psychological or social concerns (or resources to assist with those concerns expressed as *support* variables). In addition, while not intentionally examined by the researchers, the participants "frequently volunteered responses" (Johnston et al., 2010, p. 85) that were associated with Schlossberg's notion of *strategies*, such as job placement initiatives. Ultimately, the authors proposed recommendations for and identified resources available to career counselors—specifically aligned with the major themes identified in this study—to assist veterans transitioning into the civilian workforce.

Castro and Kintzle's Military Transition Theory

In addition to the theoretical models, such as Schlossberg's, that have advanced over the years to describe career transition and decision-making processes for adults in general, the Center for Innovation and Research on Veteran and Military Families at the University of Southern California's Suzanne Dworak-Peck School of Social Work has

also advanced a theoretical military-specific transition model based upon their recent research (see Figure 3; Castro & Kintzle, 2017, p. 13). In their model, the researchers identified three interacting and overlapping components that comprise veterans' transition: approaching the military transition, managing the transition, and assessing the transition. Approaching the military transition "outlines the personal, cultural and transitional factors that create the base of the transition trajectory" (Castro & Kintzle, 2017, p. 13). Factors such as individuals' experiences during their time in the military, their personal characteristics and health, the situation surrounding their discharge, and actions taken in preparation for transition are all considered during the approach to transition. Managing the transition "refers to factors impacting the individual progression from service member to civilian" (p. 13). Transition management is largely impacted by the types and magnitude of support afforded to veterans during their transition—from family and friends, government agencies, and local or professional communities—but it is also influenced by individuals' coping styles, perseverance, attitudes, and beliefs. As demonstrated by the color-coding in Figure 3, the first two components of Castro and Kintzle's (2017) military transition model do align with Schlossberg's 4 S framework: *approaching the transition* aligns with situation, self, and strategies; and *managing the transition* aligns with self and support.

However, the unique element of Castro and Kintzle's (2017) model that does not directly align with Schlossberg's framework, but is particularly useful in this case, is their third component—the *transition outcome indicators* identified while assessing the transition. While assessing elements of transition is certainly embedded within

Schlossberg's and other transition models—such as assessing the impact of change on individuals' roles, relationships, responsibilities, and assumptions—Castro and Kintzle's model helps provide explicit and tangible categories within which veterans can not only focus upon during their approach to transition, but also remain aware of throughout the transition process. Assessing the transition specifically considers “whether the transitioning service member secured adequate employment, the re-acclimation to family life and adjustment to new family roles, physical and psychological health, adaption of new social networks and engagement in the community” (p. 13).

From 2014 to 2017, researchers at the center have loosely applied this assessment framework to a series of four studies they conducted entitled, *The State of the American Veteran*. In their initial study of the series in September 2014, Castro et al. (2014) surveyed over 1,350 veterans and conducted follow-up focus groups with 72 participants in the *Los Angeles County Veterans Study*. The findings of the initial study revealed:

- First, many service members leaving the military are not prepared for the transition.
- Second, many military veterans have a wide range of needs that cannot be easily provided by a single organization.
- Third, veteran support organizations are not organized to provide holistic support to current and returning veterans.
- Fourth, most veteran support organizations are focused on meeting acute and chronic needs of veterans, such as homelessness, immediate or severe health issues, or acute or chronic unemployment. Very little attention is given to

preventing these conditions or intervening early to prevent them from becoming chronic. (Castro et al., 2014, p. 7)

In their second study, *The Orange County Veterans Study*, Castro et al. (2015) closely followed the original research methodology but applied it in a neighboring county. In this study, they surveyed more than 1,200 veterans living in Orange County, CA, and conducted follow-up focus groups with 35 veterans. The findings of this second study were very similar, as the researchers explain,

Many service members leaving the military and relocating to Orange County are not prepared for the transition. Many leave the service without a job, without permanent housing being identified, and with significant unmet physical and psychological health issues. Further, a significant minority of service members leave the military with legal and financial issues. Presently, there is not a single veteran support agency that can adequately meet such a wide range of veteran needs. In both Los Angeles County and Orange County, veteran support organizations are not organized to provide holistic support to current or returning veterans. Instead, veteran support organizations, both governmental and non-governmental, tend to focus on one or two veteran needs, with other veteran needs left unaddressed. Finally, most veteran support organizations tend to focus entirely on meeting acute and chronic needs of veterans, such as homelessness, immediate or severe health care issues, or acute or chronic unemployment. Very little attention is given to preventing these conditions or proactively intervening early to prevent them from becoming chronic. (Castro et al., 2015, p. 38)

In their third study, *The Chicagoland Veterans Study*, Kintzle et al. (2016) also followed a similar research methodology as the first two studies, but this time in a completely different geographic location. In this study, the researchers surveyed more than 1,200 veterans in the counties comprising the greater Chicago, IL, area and conducted follow-up focus groups with 20 veterans. The findings were consistent despite the geographic separation, which increased generalizability of findings outside of California. Overall, the majority of participants indicated they were not ready for transition out of the military and struggled as a result. Many experienced housing distress and food insecurity. While most participants reported they were in good health overall, indications of mental health problems were present in more than one-third of participants and “nearly one-third of post-9/11 veterans [met] the diagnostic criteria for suicide risk” (Kintzle et al., 2016, p. 38). Participants also indicated a large number of veteran support agencies existed in the greater Chicago area, but their efforts were uncoordinated and, like in California, focused narrowly on a few acute problems (e.g., homelessness, severe health problems, and unemployment).

In their final study in the series, *The San Francisco Veterans Study*, Castro and Kintzle (2017) again followed a similar research methodology as the other studies. In this study, the researchers surveyed 722 veterans living in the San Francisco area, but no follow-up focus groups occurred. The findings were again consistent, and the theme has emerged throughout the series of studies that veterans encounter significant transition issues.

The transition from military to civilian life can be challenging for many service members and the transition is not always negotiated successfully nor does it always proceed as smoothly as envisioned by the transitioning service member.

The San Francisco Veterans Study tells us that we have not effectively engaged separating service members early enough in their transition process. It has become increasingly clear that there is a dire need for support services, employment assistance, and health treatment options that engage veterans early in the transition from military to civilian life. (Castro & Kintzle, 2017, p. 6)

Ultimately, the researchers at the Center for Innovation and Research on Veteran and Military Families have added valuable contributions to understanding the current state of veterans' transitions out of the military in America. By using their Military Transition Theory as a guiding framework, they have identified problematic trends veterans are experiencing and offered solutions. Furthermore, due to the quantitative survey research methodology applied in their studies, each research report in the series also describes the assessment instruments employed to measure each variable, which is beneficial for future researchers. The assessment tools described herein, employed within a theoretical research framework modeled upon a combination of Schlossberg's and Castro and Kintzle's foundation, could prove beneficial to explore any number of military transition-related topics. For the purposes of this dissertation, this framework was also useful to examine the utility and benefits of various educational pathways available to veterans interested in transitioning into the information technology or cybersecurity career fields.

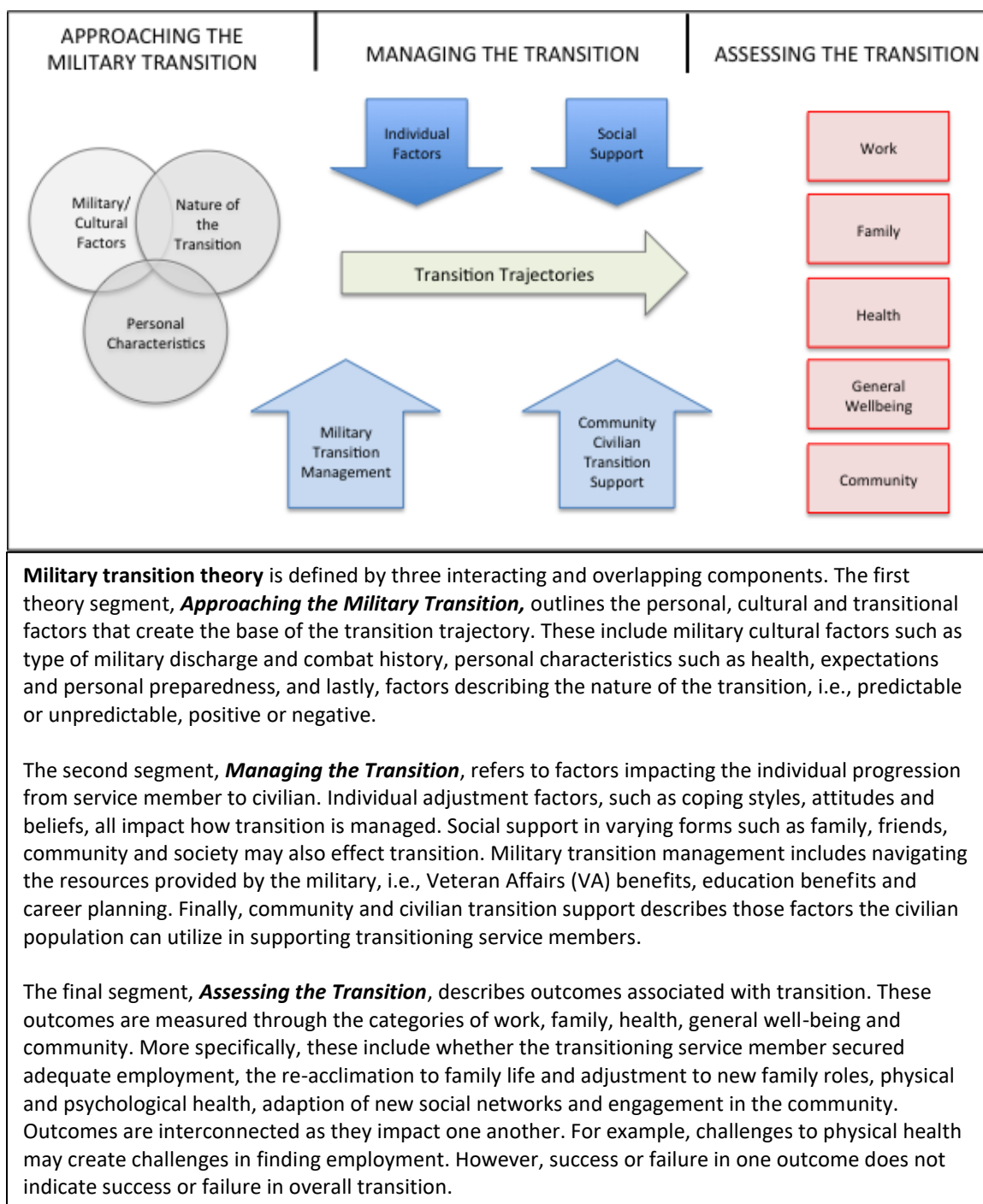


Figure 3

Military Transition Theory

From *The State of the American Veteran: The San Francisco Veterans Study* by C. A. Castro & S. Kintzle, 2017, USC Suzanne Dworak-Peck School of Social Work (http://cir.usc.edu/wp-content/uploads/2017/05/USC-CIR-SF-VET-2017_FINAL-Pgs.pdf), p. 13.

Schlosberg's Theory of Transition - Transitions take time and consist of ever-evolving stages within a never-ending cycle: <i>Moving in – Moving through – Moving out</i> - Stress is not a result of transition itself, rather how the transition affects an individual's <i>roles, relationships, routines, and assumptions</i> - Attainment of objectives during transitions are impacted by variables associated with four categories: <i>situation, self, support, and strategies</i>						
Situation		Self		Support	Strategies	
Trigger Timing Duration Level of control Changes in roles/responsibilities Previous experiences in similar transitions Concurrent stressors Assessment of situation		Gender Age Health Socio-Economic Status Education Inner strength Outlook Optimism		Family Friends Colleagues Supervisors Professional networks Community Cultural norms Career field options	1. Try to change or influence the situation (plan/action) 2. Reframe the situation (perspective) 3. Reduce stress (meditation, exercise)	
Castro and Kintzle's Military Transition Theory (2017) - Three interacting and overlapping components: <i>Approaching, Managing, and Assessing the Transition</i> - When aligning the variables within the components in relation to Schlosberg's categories.						
Situation		Self		Support	Strategies	
<div>Approaching</div> <div>Type of discharge Combat history Predictable/Unpredictable Positive/Negative</div>		Health		Preparedness		
		<div>Managing</div> <div>Individual Factors Coping strategies Attitudes and Beliefs</div>		<div>Social Support</div> <div>Family Friends Community Society</div> <div>Veteran Benefits</div> <div>VA TAP Career Plan</div> <div>Civilian Support</div> <div>Corporate Initiatives Grassroots Orgs</div>		
Assessing		Work	Family	Health	General Well-Being	Community

Figure 4

Schlossberg's Transition Theory Aligned With Military Transition Theory

Note. From *The State of the American Veteran: The San Francisco Veterans Study* by C. A. Castro & S. Kintzle, 2017, USC Suzanne Dworak-Peck School of Social Work (http://cir.usc.edu/wp-content/uploads/2017/05/USC-CIR-SF-VET-2017_FINAL-Pgs.pdf), p. 13.

Strada Education Network and Gallup, Inc: Advice for Academic Decision Making

Before moving on to a review of the occupations within the computer and information technology career fields and the educational pathways available for entry into them, a final discussion pertaining to the source of advice about academic decisions upon which students rely must be addressed. While several of the career transition theories mentioned above address sources that influence career decision making, a recent study conducted by the nonprofit association Strada Education Network, in collaboration with Gallup, Inc., offers timely research findings that are extremely pertinent to this discussion. As Strada Education Network and Gallup, Inc. (2017) researchers explain, the report

draws on the interviews collected between Jan. 2 and Aug. 13, 2017, and includes 22,087 responses from U.S. adults aged 18 to 65 who have either earned an associate degree, had some college education but no degree or earned a bachelor's degree. (p. 8)

The interview questions upon which the report was based were:

- From what resources or people did you get advice about the major or field you were going to study during your [degree program]?
- How helpful was the advice you received from each source? (p. 8).

Participants' responses were then categorized into the following four broad categories:

1. Formal sources: Counselors (high school and college) and the media (internet and print). This group represents sources that are intentionally designed to provide guidance to students about their education choices.

2. Informal social network: Family, friends, and community leaders. These sources represent an informal network of advice and information for students but are not sources specifically designed to provide guidance to students about their education decisions.
3. Informal school-based: High school teachers, high school coaches, college faculty or miscellaneous staff. The preponderance of responses classified in this category include professors, faculty, or other types of instructors not primarily in an advising role.
4. Informal work-based: Employers, coworkers, people with experience in the field and military. The informal work-based category includes experiences gained while working and advice from people who work in related fields. (p. 8)

While there were many intriguing findings from this and related research reports, as indicated in Figures 5 and 6, the most relevant findings for the purposes of this dissertation were:

1. Most people receive advice about their college major from informal social network sources like family members and friends, and the least receive advice from informal work-based sources.
2. However, even though they were consulted the least, “informal work-based sources of advice were rated most helpful, and those consumers mentioning them would be less likely to choose another major if they had to start again” (p. 5).

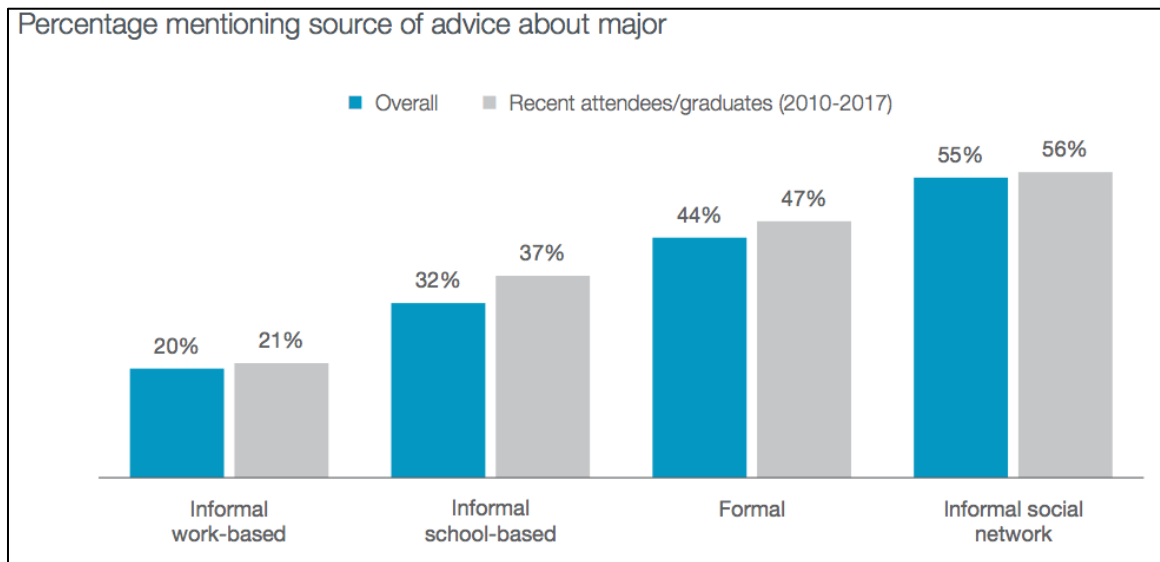


Figure 5

Percentage of Respondents Mentioning Source of Advice About College Major

Note. From *Major Influence: Where Students Get Valued Advice on What to Study in College* by Strada Education Network & Gallup, Inc. (2017, September), Strada Education Network, Education Consumer Pulse (<https://go.stradaeducation.org/major-influence>), p. 9.

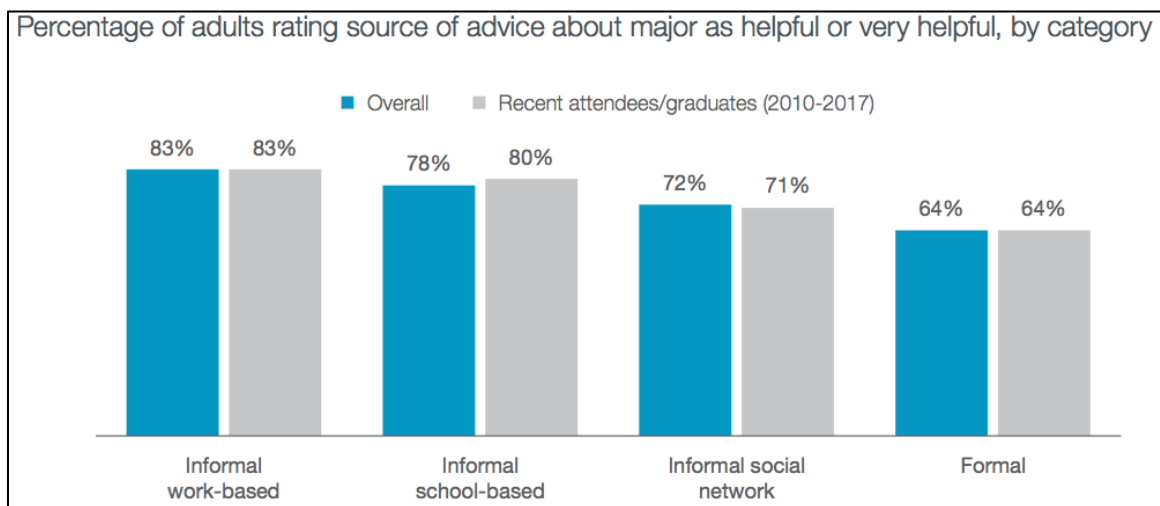


Figure 6

Percentage of Respondents Evaluating Source of Advice About College Major

Note. From *Major Influence: Where Students Get Valued Advice on What to Study in College* by Strada Education Network & Gallup, Inc. (2017, September), Strada Education Network, Education Consumer Pulse (<https://go.stradaeducation.org/major-influence>), p. 9.

Furthermore, within the informal work-based category, even though only 1% of respondents mentioned they consulted with someone within the military, 81% of those who did expressed that advice was helpful (Strada Education Network & Gallup, Inc., 2017). Yet, the underlying requirement for Strada and Gallup to conduct such a study in the first place highlights the notion that there is a clear need to help students identify reliable sources of career-relevant advice prior to commencing courses of study. As was indicated in the study, traditional sources of academic and career advising, such as high school and college counselors, may not always be the best source of advice regarding post-college careers (Strada Education Network & Gallup, Inc., 2017). In fact, within the last few years, stakeholders who support the higher education system in America have called for improvement in career advising and graduate job attainment accountability on campuses, which has spurred initiatives to increase ties between academic advising and career services offices on traditional campuses (Ledwith, 2014; Lynch & Lungrin, 2018). Plus, researchers have advanced other ideas, such as proposals to better integrate industry partner coaching into the academic advising process (Tudor, 2018).

Ultimately, along with identifying challenges and successes experienced throughout veterans' transitions from the military into information technology career fields, the need to identify sound sources of career advice prior to commencing educational pathways is certainly worthy of exploration. However, with that brief introduction, the next section will explore the individual careers within the information technology field and the available educational pathways necessary for entry.

Information Technology Industry and Pathways for Career Entry

In a recent book, *Digital Disruption: The Future of Work, Skills, Leadership, Education, and Careers in a Digital World*, Dr. Tracey Wilen (2018) presents a concise, yet comprehensive synthesis of literature describing the current state of the information technology sector and the drastic impact it has had throughout all facets of American industry and society. Over the last 30 years, revolutionary technological innovations have significantly influenced business practices in most industries, methods of personal and corporate financial transactions, educational practices, personal and societal interactions, and many other areas affecting Americans' work and personal lives. According to the Pew Research Center (2019), as of February 2019, 96% of Americans owned a mobile phone of some sort and 81% owned smartphones; 72% of Americans owned a laptop or desktop computer and over half owned a tablet device. According to the Computing Technology Industry Association (CompTIA), "a leading voice and advocate for the \$5.0 trillion global information technology ecosystem" (2019, p. 4), the United States is the "largest tech market in the world, representing 31% of the total [value], or approximately \$1.6 trillion for 2019" (2019b, p. 24). And the industry continues to grow.

Based upon an analysis conducted by the U.S. Bureau of Labor Statistics (2019a), "employment of computer and information technology occupations is projected to grow 12 percent from 2018 to 2028, much faster than the average for all occupations" (para. 1). When considering the differences in number of job postings in the U.S. between 2017 and 2018, the key growth areas within the technology sector appear to include:

- Machine learning [+102%]

- Big data [+49%]
- Artificial intelligence [+159%]
- Internet of Things [+89%]
- Robotics [+48%]
- Blockchain [302%]
- Augmented reality [119%]
- Drones [+106%]
- 3D printing [+54%] (CompTIA, 2019, p. 14).

However, the traditional IT functions within industries also continue to grow and evolve. Cybersecurity roles, in particular, have become increasingly important not only within IT companies, but also in other organizations that continue to digitize aspects of their business.

Many businesses are increasing their security investments or elevating their security focus, but these actions often follow a defensive approach that utilizes technology tools such as firewalls and antivirus. More and more, firms will realize that they must be proactive in probing for weaknesses or detecting possible breaches. This will involve new skills such as penetration testing, vulnerability assessment, and security analytics. (CompTIA, 2019, p. 30)

These enhanced security requirements also extend beyond the technical IT professionals. Organizations of all kinds are now expending resources to share the responsibility of cybersecurity awareness with their entire workforce. Many organizations have implemented recurring training requirements, for all employees, as well as more secure

methods of file storage and sharing. Cybersecurity is no longer just a concern for the IT professionals, although the IT workforce has taken on more complex network monitoring and safeguarding functions than ever before.

When considering the impact of these constantly changing technologies from a human resource or workforce development perspective, and specifically considering the technical skills required to remain abreast of updated systems, many individual employees now find themselves in the midst of a constantly evolving work environment. Workforce development programs, individual skill attainment, and technical training and retraining are new cultural norms within the modern IT workforce (Wilen, 2018). In a recent report published by Deloitte (2019), when discussing technical talent, “one thing is certain: the ‘shelf life’ of skills is getting shorter and shorter. As a result, retraining has become crucial: companies should invest more in educating and training workforces for the digital era” (p. 5). Furthermore, the information technology industry is feeling the greatest impact of technological innovation due to its unending growth and role as a leader within larger national and global markets. “Arguably, the sector is at the forefront of 21st-century human capital challenges, including skill mismatches, skilled-worker shortages, and attracting and retaining highly skilled workers in tight labor markets” (Henry-Nickie et al., 2019, p. 14). Plus, the IT industry’s “tight labor market and tech skills gap challenges continue unabated” (CompTIA, 2019, p. 13), which are problematic for organizations, but potential opportunities for individuals interested in entering the field.

However, the constantly changing and updating skill development situation is likely even more daunting for those desiring entry into the IT career field. For newcomers interested in joining the field, individuals face a myriad of options regarding the educational and training pathways available. From entry-level certificates on one end, to doctoral degrees on the other extreme, thousands of educational and training providers offer programs within that spectrum that may offer an introduction and potential entryway into an IT career. In fact, one of the leading establishments within the industry, Cisco, hosts a blog entitled the Cisco Learning Network (CLN), and

A common question in the IT industry is this: which is better for [an] IT career, getting certified or pursuing a formal degree? It has even been a topic of debate in the CLN community. That's because this isn't a simple question and there's no right or wrong answer. There are significant differences that make both paths unique. Our answer is it depends on where you are in your career and your career goals. (2017)

Tangible factors, such as an individual's time available and financial situation, along with the demands of the industry within the geographic area in which the individual wishes to work, all contribute towards determining the best option.

As presented in Table 1, the U.S. Bureau of Labor Statistics has identified the leading occupational fields within the computer and information technology industry and the traditional levels of education required for entry.

Table 1

<i>Occupational Fields Within the Computer and Information Technology (IT) Sector</i>	
Occupation	Entry-Level Education
Computer and Information Research Scientist	Master's degree
Computer Network Architects	Bachelor's degree
Computer Programmers	Bachelor's degree
Computer Support Specialists	Varies – degree not always required
Computer Systems Analysts	Bachelor's degree
Database Administrators	Bachelor's degree
Information Security Analysts	Bachelor's degree
Network and Computer Systems Administrators	Bachelor's degree
Software Developers	Bachelor's degree
Web Developers	Associate's degree

Note. Adapted from *Computer and Information Technology Occupations, Occupational Outlook Handbook*, by Bureau of Labor Statistics, 2019a, September 4 (<https://www.bls.gov/ooh/computer-and-information-technology/mobile/home.htm>).

According to the BLS, a bachelor's degree or higher is required for most of the career fields within the industry. However, because of the persistent labor shortage and skills gap mentioned previously, some companies within the IT industry are taking measures to mitigate the shortage by relaxing the traditional educational hiring requirements and to offer more lateral mobility for their existing workforce.

Take tech giants Apple, Google and IBM, for example. These companies no longer require a four-year college degree for many of their positions, including those in some technical roles. Loosening up this age-old requirement opens the doors for thousands of potential hires. And it is recognition that many of the skills required for a career in tech can be acquired via alternatives to the four-year academic path. There's self-learning, community college enrollment, and on-the-

job training, among other valuable routes to a career in tech. (CompTIA, 2019 p. 13)

Similarly, some companies have also incorporated traditional apprenticeship models in an attempt to provide additional professional development pathways to ensure the right mix of hard skills, soft skills, and on-the-job experience (CompTIA, n.d.-a) within their workforce. Other organizations have even turned to solutions such as online skills testing to validate technical skills opposed to relying upon degree credentials (Lam, 2015; Wilen, 2018). Therefore, individuals desiring entry into the IT career field today appear to be facing a favorable situation. Due to the ongoing talent deficit and skills gap, newcomers may find job opportunities whether or not they desire or have the means to earn a four-year postsecondary degree. “Individuals looking for jobs today may have associate’s degrees, occupational licenses, and education certificates, even digital badges or certifications from previous employers, rather than degrees from 4-year colleges (Meristosis, 2016, as cited in Wilen, 2018, p. 14).”

Nevertheless, as a result of the various educational options available for entry into the IT career field, deciding which career path to pursue and identifying the correctly associated educational pathway can still be perplexing matters for interested individuals. Even when considering the broader population of potential postsecondary students in America, “students today have a hard time navigating the value and meaning of their postsecondary options” (Meristosis, 2016, p. 28). While regionally accredited degree plans are typically well established—with goals and outcomes articulated in course catalogs and college websites—the abundance of technical certifications available are not

always so apparent. Even though organizations are currently working towards establishing a better-delineated framework for credentialing within respective career fields (Meristosis, 2016), selecting certifications to pursue can be challenging.

Fortunately, at least within certain sectors of the IT industry, educational and certification frameworks have begun to emerge. Specifically, when considering working in cybersecurity or within the defense sector, guidelines are available. When considering careers in cybersecurity, the U.S. Department of Commerce’s National Institute for Standards and Technology has developed the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework. The NICE framework is a national-level framework for all elements within the cybersecurity profession that

has been developed to help provide a reference taxonomy—that is, a common language—of the cybersecurity work and of the individuals who carry out that work. [It] supports the NICE mission to energize, promote, and coordinate a robust community working together to advance an integrated ecosystem of cybersecurity education, training, and workforce development... [and] provides a set of building blocks for describing the tasks, knowledge, and skills that are needed to perform cybersecurity work performed by individuals and teams.

(NIST, 2020, p. vi)

The Department of Defense offers a very prescriptive framework regarding the baseline certifications required for individuals to become qualified for specific positions within the department’s cybersecurity workforce (DoD Cyber Exchange, n.d.).

Even with established frameworks for cybersecurity, other areas of the IT sector may have less well-defined guidance. Plus, even the guidance from higher education and industry professionals can be confusing. For example, Meristosis (2016) calls for higher education to provide a more narrow focus on skill attainment and a move away from the traditional credit-hour-to-competency-based educational credentialing. Whereas Wilen (2018) posits a need for “critical thinking, insight, and analysis capabilities...[coupled with] soft skills, including how to collaborate, work in groups, read social cues, and respond adaptively...[and] integrating interdisciplinary training that enables students to develop skills and knowledge in a range of subjects” (p. 33), which arguably are skills gained as a result of years of deliberate thought and reflection—hallmarks of a traditional 4-year liberal arts education.

In this chapter, I addressed previous research that highlighted the top five challenges influencing veterans’ post-military career decisions in recent years, reviewed literature pertaining to the theoretical frameworks related to military transitions, and discussed the information technology workforce and requirements for veterans to gain entry. Ultimately, considering the needs and workforce shortages facing the information technology industry, coupled with the available population of transitioning veterans out of military service, this study explored ways veterans may be able to find meaningful careers by filling the workforce shortages within the IT industry. Next, I discuss the methodological approach I followed to conduct this exploration.

Chapter Three. Methodology

The purpose of this study was to explore the experiences and motivational factors that have influenced decisions of post-transition military veterans, who did not specialize in IT while in the military, but who do currently work in the IT or cybersecurity career fields. I explored the reasons why veterans decided to pursue a career in IT and the educational programs they selected to gain entry, their experiences within those programs, and their resulting level of satisfaction during the entry-level phase of their career (within approximately the first five years). The overarching outcome of the study was to expand the knowledge and scholarship regarding military veterans' transition into higher education and the workforce and to provide future transitioning veterans with additional advice about information technology career-related educational options.

Given the fact that the aim of this study is to advise future transitioning veterans, I approached this research and its goals from *constructivist* and *social cognitivist* conceptual frameworks. Phillips (1995) asserts that while many philosophers and psychologists have nuanced perspectives of constructivism, all agree that “human knowledge—whether it be the bodies of public knowledge known as the various disciplines, or the cognitive structures of individual knowers or learners—is *constructed*” (p. 5). Peavy (1995) adds that “constructivist thought has its roots in philosophy, psychology, science, and cultural studies,” and one of several constructivist concepts

which can be applied to counseling is that “people are ‘meaning-makers’ and word-munchers. They use language and action to make meaning out of daily activities. The most important personal meanings are relational. They are constructed through interactions with others and with aspects of the surrounding world” (p. 2). When more closely considering the impact of others’ examples and advice on future decisions, Bandura’s Social Cognitive Theory also plays an important role. Bandura posits that humans are agents who intentionally take actions because of their own thoughts and feelings as well as external influences.

Social cognitive theory explains human functioning in terms of triadic reciprocal causation (as cited in Bandura, 1986). In this model of reciprocal causality, internal personal factors in the form of cognitive, affective, and biological events, behavioral patterns, and environmental influences all operate as interacting determinants that influence one another bidirectionally. (Bandura, 2001, p. 2)

Therefore, the examples of and recommendations from others do influence humans’ thoughts, feelings, and future actions.

Furthermore, to fully explain the reasons I selected this methodological approach, I need to also briefly discuss some of my own professional experiences and intellectual tendencies and describe how they aligned with my research interests to arrive at this topic and method. First, along with most other adult learners, I approach my academic and research interests with a sense of pragmatism: to expend the immense amount of time and effort required to conduct this sort of research, I believed the aim of this study should be focused practically on attempting to solve a real-world problem (Knowles et al., 2005).

Second, my selection of this topic coincided with a professional and geographical move I was making into a new vocational environment that was heavily focused on the information technology workforce and, as a veteran myself, I was also volunteering with a veteran-serving organization that assisted transitioning service members. Lastly, in the job from which I was departing at the time of my geographical transition, I conducted a year-long qualitative research study and gained an immense appreciation for the depth of understanding that can be learned about research problems, and the ways trends in data are identified using qualitative approaches. Thus, with that perspective, after reviewing related literature and discussing research topics with colleagues and a senior leader within the field I was about to enter, I arrived at the topic and methodological approach of the present study.

I decided to explore this topic by employing a qualitative embedded case study design based upon frameworks established by Yin (2018). As Baxter and Jack (2008) explain, the “qualitative case study is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources” (p. 544). Yin (2018) elaborates on the scope and features of case study research, in general, by stating that a case study is, “an empirical method that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident” (p. 15). Thus, in case study research, the *context* of each case is what makes the case unique. Merriam and Tisdell (2016) agree, “a case study is an in-depth description and analysis of a bounded system” (p. 37); and “the single most defining characteristic of case study research lies in

delimiting the object of study: the case” (p. 38). Yin (2018) also describes that when doing case study research, the case study:

- Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
- Benefits from the prior development of theoretical propositions to guide design, data collection, and analysis, and as another result
- Relies on multiple sources of evidence, with data needing to converge in a triangular fashion. (p. 15)

In the present study, I have clearly defined the context of the case, explored its characteristics within its real-world setting, and based my analysis upon theoretical frameworks. However, when considering Yin’s last point about triangulating multiple sources, I relied upon multiple sources of interview data and based my approach upon the concept proposed by Reybold et al. (2018) where triangulation is the mapping of participants’ relationships, positions, and perspectives that emerged during the study.

Qualitative research sees understanding and meaning-making as emergent, thus we talk about triangulation as *mapping the triangle* instead of *solving the triangle* [mathematically]. *Mapping the triangle* means that we actively seek to understand and describe significant relationships, positions, and perspectives in relation to the elements of our inquiry. Doing so encourages disciplined qualitative research by constructing a metaphoric triangle. (Reybold et al., 2018)

Furthermore, while some researchers consider case study research as a design within the larger field of qualitative research analysis (Baxter & Jack, 2008; Stake, 2006), the term

qualitative is specifically called out in the title of the method herein because others, such as Yin (2018), posit that case study research can go beyond traditional qualitative research and be considered a separate category of design. However, there are other characteristics to also consider when defining case study research.

Prominent case study researchers agree that defining the unit of analysis is critical to the establishment and definition of case-based research (Merriam & Tisdell, 2016; Patton, 2015; Yin, 2018). According to Yin (2018), the unit of analysis is “the ‘case’ in a case study” (p. 286), which may be different than the “unit of data collection” (p. 101), or individual participants in a study. The unit of analysis I investigated in this study was a group: successfully transitioned US military veterans who are employed within the IT workforce. However, the units of data collection were individual members of that group. I interviewed veterans who had transitioned out of the military, successfully completed some type of educational or training program that qualified them for employment within the IT workforce, and had been working in the IT industry within the United States for approximately five years or less. I did not include veterans in this study who served in IT-related career fields during their time in the military; those veterans served in very similar capacities in the military as IT professionals outside of the military and are uniquely qualified for direct placement within the industry’s civilian sector—typically without additional training or education. I anticipated that all the participants within the case would share several characteristics and be related, in a sense, in several ways: the participants would all be military veterans from one of the branches of the United States Armed Forces, would have completed formal education or training to prepare them for

the work they currently conduct, would have been influenced by someone or something that encouraged them to pursue a particular educational path, would have entered the IT workforce within the last five years, and were gainfully employed at the time of data collection.

To clarify the distinction of *embedded* case study design, Yin (2018) further defines embedded units of analysis as groups of participants “lesser than and within the main case in a case study, from which data are also collected” (p. 287). While I initially anticipated that responses from participants who completed different educational pathways that led to careers in the IT industry would result in unique embedded units of analysis, in the end, those distinctions did not emerge in the collected data. Thus, the differentiating factor between the embedded units of analysis within the broader case study framework changed throughout the course of this study. My original expectation was that participants would have different motivations and experiences that aligned with the completion of one of the following four pathways for entry into an IT career field:

1. IT vendor-provided certifications
2. A university-provided certificate program
3. An associate’s (2-year) degree program
4. A bachelor’s (4-year) degree program.

While embedded units of analysis did still emerge during the study, the distinctions were not solely based upon what I anticipated. Instead of finding differences between participant groups based upon the educational pathway they completed, distinctions between participants’ responses, and thus, unique embedded units of analysis, emerged

based upon more holistic circumstances related to their military transition situation.

Participants' type of military service, time spent in the military, decisions made during and after transition, and way of entering the IT workforce all influenced their situation.

The resulting embedded units of analysis were:

1. Active duty service members who directly transitioned into an IT path early in their military career.
2. Reserve or National Guard service members.
3. Active duty service members who tried a different career after separating from the military, before subsequently transitioning into IT.
4. Active duty service members who retired after a career of military service and transitioned into supporting roles within the IT career field.

With that overview of the conceptual framework from which I approached this study and an introduction to my methodological approach complete, in the remainder of this chapter, I will discuss specific aspects of the methods I employed during the study, including the design, fieldwork issues, selection of site and participants, and data collection and analysis. I end the chapter with a discussion of appropriate criteria for evaluating case study research from the perspective of leading authors in the field (Stake, 2006; Yin, 2018), as well as ethical considerations related to my study.

Design

As explained in Chapter 2, two of the common theoretical frameworks used to help describe veterans' transition to college and the workforce are Schlossberg's Theory of Adults in Transition (Anderson et al., 2012; Schlossberg, 2011) and Castro and

Kintzle's (2017) Military Transition Theory. As depicted in Figures 2 and 3 and described in Chapter 2, the first two components of Castro and Kintzle's (2017) model—approaching the transition and managing the transition—align with Schlossberg's 4 S framework of situation, self, support, and strategies. The elements of these frameworks were useful for interview protocol development to explore veterans' decisions and experiences leading up to and during the transition process. However, the components within the third section of Castro and Kintzle's (2017) model—the transition outcome indicators (work, family, health, general well-being, and community)—were particularly useful in developing protocols for exploring veterans' perspectives of post-transition satisfaction and future planning. Additionally, the recent study conducted by Strada Education Network, in collaboration with Gallup, Inc. (2017), provided directly relevant findings regarding the sources of advice college graduates sought prior to commencing their educational programs and their perspectives about the helpfulness of those sources.

With these theoretical frameworks and studies in mind, coupled with the purpose of the study described in Chapter 1 and literature review presented in Chapter 2, the overarching research questions I explored in this study include:

1. Why do transitioning military veterans decide to pursue an IT or cybersecurity career field?
2. Why do transitioning military veterans pursue the educational pathways they select for entry into these fields?
3. What are veterans' experiences during the educational pathway they select?

4. How satisfied are military veterans after completing their transition into these fields?
5. What are veterans' future career goals after completing the entry-level phase within these fields?

Following Yin's (2018) "basic types of designs for case studies" (Figure 2.4, p. 48), I employed a Type 2, embedded case study design, which is a single-case design framework with multiple embedded units of analysis within the broader individual case (pp. 49-53). As depicted in Figure 7, while I initially intended to further categorize participants within the case according to the unique educational pathway they completed to gain entry into the IT field, ultimately, embedded units of analysis emerged according to participants' broader transition situation: S1 – Active duty transitioning directly into an IT pathway, S2 – Service members of the Reserve or National Guard forces, S3 – Active duty members who tried a different career before transitioning into an IT pathway, and S4 – Retired active duty members who transitioned into supporting roles within the IT field.

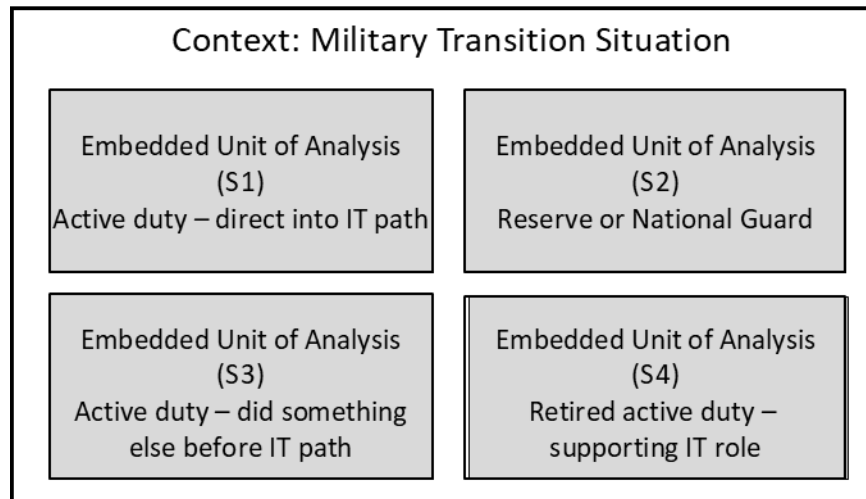


Figure 7

Research Design: Case Study With Multiple Embedded Units of Analysis

Note. IT = information technology. Adapted from *Case Study Research and Applications: Design and Methods* (6th ed.), by R. K. Yin, 2018, Sage, p. 48.

Yin (2018) explains that case study evidence can be collected from six types of sources, which include “documents, archival records, interviews, direct observations, participant observation, and physical artifacts” (p. 111), and that multiple sources should be used whenever possible in case study research. However, Stake (2006) emphasizes that, “for single-case and multicase studies, the most common methods of case study are observation, interviewing, coding, data management, and interpretation” (p. 29). In this study, I conducted semi-structured interviews to identify themes based upon participants’ experiences. However, I also asked them for their advice and recommendations to provide to future transitioning veterans, and I compiled a list of resources that participants found to be particularly useful during their transition. After the interviews, I followed a systematic transcription and coding process, and used a qualitative research

software application to manage interview data, thus better enabling me to identify themes.

Fieldwork/Access/Selection of Site

Since United States military veterans can pursue any of the educational pathways of interest to this study in most, if not every, state within the nation, restricting the pool of potential candidates to a specific geographic location would have served little purpose aside from logistical convenience for data collection. Therefore, specifically given the geographic dispersion permitted as a result of online learning, aside from limiting participants to those who attended school and currently reside and work within the United States, I did not further limit participants in the study to a specific school or geographic location. However, there were several educational institutions that military veterans most commonly attend as well as certain geographical areas within the nation that could have contained larger populations of employees working in the IT industry where eligible candidates could have possibly been located.

The first way I attempted to gain access to my population of interest was through the educational institution they attended. In September 2019, Altman (2019), a journalist with the periodical *MilitaryTimes*, presented an analysis of the Department of Veterans Affairs GI Bill usage data for fiscal year 2018. According to the analysis, Altman (2019) listed 50 post-secondary educational institutions or systems, ranked by the number of GI Bill recipients who attended them in fiscal year 2018, and provided categorical assignments for the respective educational sector (For-profit, Private, or Public) and level (Associate's or lower, Bachelor's, Master's, or Doctoral). Using this list as a point of

departure, and further analyzing each of the institutions' websites to ensure they offered pertinent educational programs, I began my search for participants by contacting the admissions offices and campus military or veterans' affairs offices (if available) at the institutions listed in Table 2. I also contacted additional colleges and universities not presented on this list.

Table 2

Potential Participants' Commonly Attended Institutions Based Upon GI Bill Usage

Institution	Level of type of education	Remarks
University of Maryland Global Campus	Bachelor's, certificates	Online
American Military University	Bachelor's, certificates	Online
Strayer University	Bachelor's, certificates	Online, In residence
Liberty University	Bachelor's, certificates	Online, In residence
Colorado Technical University	Bachelor's, certificates	Online, In residence
Southern New Hampshire University	Bachelor's, Associate's, certificates	Online, In residence
Embry-Riddle	Bachelor's, Associate's, certificates	Online, In residence
California Community College System	Associate's, certificates	Primarily In residence
Virginia Community College System	Associate's, certificates	Primarily In residence
North Carolina Community College System	Associate's, certificates	Primarily In residence
South Carolina Technical College System	Associate's, certificates	Primarily In residence

After gaining IRB approval (Appendix A), I contacted the offices of admission and military or veterans' affairs by email to introduce myself, explain the purpose of my study, and I requested to learn the procedures that their office followed for individuals requesting access to their alumni contact information. Very few institutions were willing to forward a recruiting email to their recent graduates or current students, but for those that did agree to forward an email, I provided the email template in Appendix B that was distributed. A few other institutions were willing to post an advertisement on their student veteran social media outlet; in those situations, after gaining approval to use the George

Mason University logo from the Office of Creative Services, I provided the advertisement in Appendix C.

The second way I contacted participants for the study was through word-of-mouth, or network sampling (Patton, 2015), within the defense industry and government acquisition community. The defense acquisition workforce is the federal government's community of professionals that facilitates the acquisition of goods and services for the Department of Defense and "has the technical expertise and business skills to ensure the Department receives the best value for the expenditure of public resources" (Management for Acquisition Workforce Excellence, 10 U.S. Code § 1701a). Some of the defense acquisition commands focus primarily on the acquisition of computers and information technologies for the military. Whether working as a government civilian employee or in the defense industry as a contractor supporting these commands, military veterans are commonly found within the ranks of these employees. Through discussions with professional colleagues within the acquisition community, I was able to contact some eligible participants for the study.

The third way I attempted to contact participants was through the Department of Veterans Affairs outreach offices, nonprofit veteran service providers such as Syracuse University's Institute for Veterans and Military Families Onward to Opportunity Program (<https://ivmf.syracuse.edu/programs/career-training/about-o2o/>), professional associations (<https://www.comptia.org/home>), and through professional social media platforms such as LinkedIn (see recruiting notice in Appendix D).

Selection of Participants

On all the recruiting materials, I described the purpose of the study and the general parameters of the participants for which I was searching. I also included a link to a registration form, using the Qualtrics survey application (see Appendix E), where interested individuals registered for the study or requested additional information. After reviewing applicants' registration form responses to ensure they met the participant eligibility criteria, I corresponded with them by email to provide a copy of the informed consent document and to schedule a time to conduct the interview. If applicants did not meet the eligibility criteria, I explained that by email as well, and encouraged them to forward the invitation to other individuals who may be interested in participating in the study.

Data Collection

Due to the ongoing public health crisis during the time of this study (COVID-19), I was required by the GMU IRB to conduct virtual interviews online as the only method for collecting the qualitative data. In-person interviews were not allowed. After attaining IRB approval, I used a GMU-sponsored Zoom account to conduct the interviews. Using the Zoom platform was advantageous for this study since it enabled me to engage eligible participants throughout the entire nation, which would not have been feasible if I had been limited to in-person interviews. During the interviews, participants had the option whether to keep the camera on. As described in the informed consent document (see Appendix F), for storage and data security considerations, the Zoom video and audio recording features were not used; instead, the audio content of each interview was

recorded using two stand-alone Sony digital voice recorders (one primary and one backup). I also kept handwritten notes during each interview.

At the beginning of each interview, once the audio recorders were turned on and I confirmed that each participant fully understood the terms within the consent form, they verbally stated the following to record informed consent acknowledgement: “I have received and read the informed consent form, all of my questions have been answered by the research staff, I agree to participate in this study, and I agree to an audio recording of our discussion.” This statement was included at the end of the consent document, and I would also paste the statement in the Zoom “chat box” for ease of reference.

Then, after re-introducing myself and reiterating the purpose of the study, I followed a semi-structured interview protocol (presented in Appendix G) that I developed and formatted in alignment with my research questions and the theoretical models mentioned above (see Figure 4). According to the RAND National Defense Research Institute, Harrell and Bradley (2009) explain,

In semi-structured interviewing, a guide is used, with questions and topics that must be covered. The interviewer has some discretion about the order in which questions are asked, but the questions are standardized, and probes may be provided to ensure that the researcher covers the correct material. This kind of interview collects detailed information in a style that is somewhat conversational. Semi-structured interviews are often used when the researcher wants to delve deeply into a topic and to understand thoroughly the answers provided. (p. 27)

Upon conclusion of each interview, all audio files were immediately downloaded to two external hard drive storage devices and any notes were placed in an envelope designated for that individual participant. I assigned each participant an anonymous alphanumeric code (recorded and securely stored separately from the collected data) that corresponded with certain demographic characteristics, and that code was used to label all digital and written files. After labeling, all collected data was securely stored for the duration the dissertation process.

After completing the interviews, I used the Rev.com transcription service to transcribe the audio files into written text. I then reviewed each completed transcript and compared it to the audio file to ensure it was as close to verbatim transcription as possible and to remove any identifying information. I also recorded any preliminary analytic remarks or codes. Once the transcripts were cleaned for accuracy and scrubbed for any identifying information, the transcribed files were loaded into the NVivo qualitative software analysis program in preparation for detailed analysis.

Data Analysis

According to Yin (2018), an analytical strategy in case study research “should follow some cycle (or repeated cycles)” (p. 168) involving the original research questions, the data, the researcher’s handling and interpretation of the data, and his or her ability to state some findings and draw conclusions. Yin (2018) further explains there are four general strategies researchers can use outright, or portions of each to create their own approach: relying on theoretical propositions, analyzing data from the ground up, developing a case description, or examining plausible rival explanations. In addition to

adopting a general strategy, researchers should also follow one of five analytical techniques: pattern matching, explanation building, time series analysis, logic models, or cross-case synthesis (Yin, 2018).

In this study, my strategic approach for data analysis was to follow the theoretical foundations regarding veterans' transition out of the military services established by Schlossberg (2011) and Castro and Kintzle (2017). More specifically, I largely based my research questions and framed my interview protocol upon Schlossberg's (2011) factors that impact transitions (situation, self, support, and strategies), Castro and Kintzle's (2017) success indicators, and the Strada Education Network and Gallup, Inc. (2017) survey findings. Using Yin's (2018) definitions, I generally applied a pattern matching analytic technique, which "compares an empirically based pattern—that is, one based on the findings of your case study—with a predicted one...made before you collected your data" (p. 175). However, while I did organize the interview protocol with an overarching deductive framework in mind, I also applied an inductive approach, using initial (or open) and axial coding (Saldaña, 2021) to identify codes and trends within participants' responses. The specific steps I followed during the analysis phase included:

1. To ensure consistency, before beginning any interview, I carefully reviewed my research questions and interview protocol to ensure my attention was narrowly focused on the most important information that needed to be collected to accomplish the goals of the study. I also reviewed my notes and previously established codes from already completed interviews.

2. I applied an iterative analytical approach typically used in the grounded theory research to ensure that “data collection and analysis are interrelated processes” (Corbin & Straus, 1990, p. 6). From the beginning of each interview, I began analyzing the statements of participants during the data collection process. I listened intently, took notes regarding participants’ statements, attempted to formulate preliminary codes, and began associating participants’ responses with others. After conducting the first two interviews, and transcribing and analyzing the data, I began populating an analysis matrix based upon the template in Appendix H that I used throughout as a frame of reference.
3. After completing the remaining interviews, following the transcription process described above, and confirming the transcripts were ready for detailed analysis, I uploaded each transcript into the NVivo software program. I then listened to the audio files once again while reading the transcripts to conduct a deliberate coding process. While my code structure also aligned with the analysis matrix in Appendix H, I followed an *initial* (or open) coding methodology (Saldaña, 2021) to inductively build upon previous participants’ responses and to identify new codes, when applicable. In some instances, during my first round of detailed coding, I applied a *structural* coding process (Saldaña, 2021), to first “bin” the participants’ responses together in response to specific interview questions, and then subsequently performed a second round of coding, following an initial coding process once all pertinent responses were combined. In both of those instances, I followed up with *axial* coding (Saldaña, 2021), to eliminate

redundancy, identify the dominant codes, and update the analysis matrix. Along with the matrix, I kept a detailed log of the codes and categories associated with each research question within the NVivo software program throughout the analysis cycle.

4. I continued the iterative process of reviewing notes and codes, conducting new interviews, and analyzing data until I reached data saturation for each research question. According to Merriam and Tisdell (2016), “saturation occurs when continued data collection produces no new information or insights into the phenomenon you are studying” (p. 199).
5. I then focused more intently on identifying themes in the data: thematic differences between the embedded units of analysis and similarities among participants across the case.

Upon conclusion of the coding and thematic identification, I associated categorized data with the appropriate research question, or questions, and selected quotations from transcriptions to include in the report as supporting evidence.

Quality/Validity

According to Yin (2018), there are four commonly accepted methods for judging the quality of social science research design that apply to case study research; however, the technical application, or processes followed, to conduct each of these “logical tests” (p. 42) can vary drastically in case study or other qualitative research in comparison with other empirical (especially quantitative) studies. While *internal validity*, or the logical articulation of causal instead of spurious relationships in research, is not relevant in

exploratory studies such as this one, Yin (2018) defines the remaining three applicable quality tests as:

- *Construct validity*: identifying correct operational measures for the concepts being studied
- *External validity*: showing whether and how a case study's findings can be generalized
- *Reliability*: demonstrating that the operations of a study—such as its data collection procedures—can be repeated, with the same results. (p. 42)

While these quality terms are more commonly encountered within quantitative studies, the conceptual application of validity and reliability can offer a useful framework for research quality discussions in case study or other qualitative studies as well. For example, since critics have argued that case study designs often fail “to develop a sufficiently operational set of measures” (Yin, 2018, p. 43), researchers must ensure to clearly define the topics being studied, ensure assertions and findings are based upon sufficient evidence, and include participants in the quality assurance process, if possible, before presenting findings. In addition to clearly defining operational terms, two specific tactics that can be used by researchers to improve concerns regarding validity include *member checking* and *triangulation* of data.

Stake (2006) explains that the process of gaining assurances about the quality of research data is largely tied to the concept of triangulation; specifically, “each important finding needs to have at least three (often more) confirmations and assurances that key meanings are not being overlooked” (p. 33). In embedded case study research, much like

multi-case research, triangulation not only ensures consistency of data within individual cases, but also across units of analysis within the larger case study framework. Stake (2006) also emphasizes the necessity for member checking, where after collecting data and preparing the report, a researcher “asks the main actor or interviewee to read it for accuracy and possible misrepresentation” (p. 37).

However, even though specific steps can be taken to improve concepts related to construct validity, the aspect of generalizability, associated with external validity in case study research, ties back to research design. Yin (2018) explains that different from *statistical generalization* common in quantitative studies, case study research strives for *analytic generalization*, or findings that “can apply to situations beyond the original case study, based on the relevance of similar theoretical concepts or principles” (p. 286). Thus, research questions that explore clearly articulated operational concepts, which are focused on building upon existing theoretical constructs, help readers understand the logical application of the findings outside of the immediacy of a particular case.

Additionally, the concept of reliability, or repeatability of findings, can be addressed through the use of intentional and explicitly articulated data collection and analysis procedures, such as using an interview protocol, a case study database, and maintaining a “chain of evidence” (Yin, 2018, p. 43).

In this study, my research questions were designed to explore clearly defined operational topics, which include influences on veterans’ decisions regarding educational pathways and ensuing career choices, experiences during educational pathways, levels of early career satisfaction, and future career goals. Furthermore, as described earlier, the

interview protocol I developed to facilitate data collection directly addresses my research questions and it was greatly influenced by well-established military and career transition theories. Plus, systematic data collection and analysis processes were clearly explained and followed. Collected data and results have been meticulously managed and archived using the NVivo qualitative software analysis tool to ensure methodological and analytical quality. Furthermore, while I used a deductive framework to establish an overarching systematic research design, the iterative process I followed during the collection and analysis stages, coupled with an inductive analytical approach, enabled me to identify results that were based upon emergent data. I altered the research design accordingly and let the data speak for itself.

Ethics

As with any formal social science research study, to ensure the most fundamental assurance of research ethics, I followed all guidelines and procedures mandated by the approving Institutional Review Board for this study, and I closely followed the approved procedures throughout its entirety. However, a more nebulous ethical consideration of which I have been intentionally aware is the potential impression of bias that could be construed due to researching, in a sense, my *native population* of veterans. As Ghaffar-Kucher (2014) explains, social science researchers must take extreme care to minimize readers' impression of biases that can occur when researchers explore their native cultures. As a veteran myself, I ensured to account for my own perspectives throughout the study—guarding against preconceived notions—and I approached data analysis and development of findings from an investigator's perspective.

Methodological Significance of Study

Although case study research is not new, there is a dearth of this type of research method exploring military veterans' transition in general, and specifically those transitioning into a specific career field. Building upon theoretical precedent and studies involving veterans' transition into the teaching profession, my hope is that this study offers a novel approach to exploring the more nuanced aspects of the motivations, decisions, and resources available to veterans as they prepare for transitions out of the military, into any number of educational programs leading to specific career paths, as well as their perspectives after beginning to work in their chosen post-military career.

Conclusion

In this chapter, I presented the reasons for and theoretical framework behind the qualitative embedded case study design methodology I employed in this dissertation. I discussed the research design, fieldwork issues, selection of recruiting sites and participants, and I explained the data collection and analysis procedures I followed. I ended with a discussion of appropriate criteria for evaluating case study research and ethical considerations related to my study. Next, I will present the results of my research study and subsequently discuss the implications of my findings.

Chapter 4. Results

In this chapter, I present and describe the findings of my qualitative inquiry. I will not interpret the meanings of my findings here; that will come later. To review, the purpose of this study was to explore the experiences and motivational factors that have influenced decisions of post-transition US military veterans who currently work in an IT-related career field. I have investigated the reasons veterans decided to pursue an IT-related career and the educational or vocational programs they completed to get there. I asked the participants about their experiences within the educational program they completed, how they got their first job in IT, and how satisfied they are now that they have attained their goal of entering the field. Ultimately, I asked about their story, about how they navigated their own transition out of the military, and what advice they have to pass along to future transitioning veterans who strive to follow in their footsteps.

I will begin by stressing that all 12 participants in this study were gainfully employed within the IT field at the time of our interviews. They all voluntarily participated in this study after receiving a recruiting notice from me—in most cases an email forwarded to them from their academic institution—that asked if they would “be willing to offer advice to transitioning military veterans” (see Appendix B) about pursuing careers in the IT workforce. When asked, all 12 participants indicated they were satisfied or happy with their choice to pursue a career in IT. Thus, the following results

and subsequent discussion are presented to show “what right looks like.” These are success stories—stories about individuals who found their way into the IT workforce and are happy with the path they are on and the direction of their post-military transition. The participants followed various educational pathways and approached their transition from four very different situations. Like many accounts we have heard before, the transition out of the military was not easy for any of them, but ultimately, these are the stories of 12 successful veterans. There may be many others like them—I am sure there are—but there may also be many others who tried an IT pathway and did not succeed, or found that they did not like the field or this kind of work.

Accordingly, I will initially describe the results related to my fourth research question about career satisfaction. I felt it was important to start with this question to set the stage. Keeping this key finding about satisfaction in mind, I will then address my second key finding, and describe how the veterans who participated in this study navigated their transitions out of the military from four distinctly different situations, which translated into the four embedded units of analysis within this case study. Third, I will explain the results pertaining to why these veterans chose to pursue an IT career field and their experiences departing the military. Fourth, I will present the reasons why they selected the educational pathway they followed and discuss their experiences throughout the learning process. Finally, I will convey to future veterans the advice shared by this cohort and identify specific resources that helped them find success along the way.

Career Satisfaction and Future Plans

I will begin by addressing the results in support of research questions four and five—inquiries regarding participants’ career satisfaction and plans for the future. Three themes emerged in participants’ responses to these questions: *satisfied with decisions*, *eager to grow*, and *continuing education*.

Satisfied With Decisions

When asked if they are satisfied in the work they are doing or decisions they have made, all 12 participants indicated they were satisfied with their decision to enter the IT career field. Participants provided different reasons why they were satisfied with their decisions, but as I mentioned earlier, these are success stories about veterans who pursued several different pathways, but are satisfied, or happy with the decisions they have made and the pathway upon which they currently find themselves.

Oh, yes sir. Yeah, I wouldn't change a thing to be honest. (ACDU)

Oh, absolutely, yeah. It's a lot of hard work, but at the same time I get to see new people every day. Nothing's ever really the same, but it's still the same systems and equipment, and so you just get a real deep understanding of how everything interconnects together. (ACDU)

Yeah. I wish I'd made them earlier, but yeah, I mean, so far so good. And I'm hoping that the sky's the limit. I can do whatever goals that I've set for myself to try to get whatever job that I want to get. (DSEF)

When I got out [and] into this field, into IT, [it] has been a blessing in disguise. I think because one, it proves that I can get out...as a guy told me, like, “how are you going to retire?” Or, “how are you going to be able to afford to your life if you go? Stay in!” And I got out at 13 years and I'm actually making more right now, even without my bachelor's degree. But in general, I am making more right now than I was when I was in the military. My life is a lot less stressful. Now, mind you, I'm going to school and working at the time, that's a little stress there, but at the same time, I'm not having to worry about being under the ocean, no communication, not even being able to see or hear my wife. Now at least like,

okay, I might miss my wife because she's asleep and I only get to kiss her on the forehead, but I still see her. I'm still here with my son and if anything's going on, he can call and I can actually pick up the phone and say, "hey, okay." Yeah, when I was in the military, I didn't have that option. And I'm so happy where I'm at right now career wise, I think it's only up from here. At least the steps I'm taking. And because of this field, because [the] IT field is a growing field. I feel like it's going to be going up for a while. Like I'm not in a declining field or a field that might be replaced or anything like that. I'm in a field that just is going to keep going in the positive direction. (ACDU)

Eager to Grow

While all 12 expressed satisfaction with their decision to enter the IT career field overall, when responding to questions about career satisfaction or their plans for the future, several of the participants offered that this was just the beginning for them. They were eager to learn more and to grow with the field.

Yeah. Yeah. Overall, I'm satisfied with the job. I'm the type of person—I'm hungry to move up, so I'm always.... Tomorrow, I have a meeting with my manager for performance reviews, but a major topic around that is what's the framework look like for the next step in my career. Laying down that groundwork so I know what goals I need to accomplish in order to accomplish my greater mission of moving up. Satisfied in the sense of fulfillment from the career, for sure, but not satisfied in where I'm at. I'm always looking to go higher and achieve more. But overall, I love doing software. (RES)

Oh, absolutely. Yes sir. Again, working a whole bunch of random jobs and finally picking something that I do like and enjoy, and I'm always wanting to be better every single day. Again, although my current job is a little bit mundane, I do realize that I need that experience to get to that next level. So, I haven't felt like this in quite a while. (DSEF)

I would say that I am happy where I am. I love what I do. My only complaint is I wish I would've done it sooner, but other than that, I feel like.... Where I am, where I work, I'm very happy where I am. I feel very appreciated where I am and it's just, I'm looking forward to where I grow and what that looks like. I don't, I have no idea, but...I would say that only complaint that I have is that if I could go back and tell myself 10 years ago, "hey, maybe you should get on that." (DSEF)

Continuing Education

After completing their educational pathway and beginning to work in the IT field, several of the participants were already enrolled in another degree plan or expressed a desire or plans to continue furthering their education for several reasons, but primarily to keep pace with changing technology and broaden career opportunities.

Because I knew the technology is changing so much, one. Two, if I want to continue to grow, like in general with just this job or just in life, in this type of field, I have to be as knowledgeable as possible. You can't stop learning in this field. Because things are changing daily. Like almost to the second.... I just went to a summit on Monday or no, I'm sorry, Tuesday. And just the things that are just happening in the private sector alone would blow your mind. So, you have to constantly be trying to learn, in my opinion. (ACDU)

So, right now I am currently at [name removed] University. My bachelor's is going to be in Cloud Computing Solutions. And during the Cybersecurity Vocational School [I previously attended], I do know a decent amount, but my passion really didn't fall into that. So, one of my professors at that school actually geared me towards cloud computing, and I got really interested in that. And so, with that being said, that's why I started going back to [college] and getting my bachelor's degree in Cloud Computing. (DSEF)

So actually, at this moment, I'm using...I have a few months left on my GI Bill. And so, I'm using that to fund this school in California, it's in Southern California. It's a technical school, but they do these test prep courses. It's like five-week courses. And they prep you for the CompTIA exams. So, I'm doing the nine-month course. So, by the end of it, I should be able to take the test for my A+, Network+, and Security+. I think I'm also taking one for an Amazon web service cert here soon too. (ACDU)

However, not all participants agreed that continuing education was essential for the IT career. The following participant had pursued higher-level degrees and intended to continue pursuing additional degrees, but felt it was up to the individual to determine the underlying need for continuing education.

I don't want to use the word required because I don't feel like it is, but IT technology is always advancing. So, the more you stay current with it, you're

putting yourself in a better position to get promotions and stuff. So, if you understand it and you're kept up to date with it. But I don't know if I want to say required because there is a lot of legacy technology that's still being used, so you don't have to be 100% current. So, I wouldn't say required. (DSEF)

Overall, all of the participants in this study expressed a sense of satisfaction with their decision to enter the IT career field and all of them articulated career goals for the future. Many of the participants were already continuing their education or indicated they had plans to do so. There was no distinction between any groups within the overarching case study regarding these topics. However, next I will present differences within the case that did emerge and resulted in establishing four distinct units of analysis within the case.

Four Situations Approaching Transition

As discussed in Chapter 3, when planning this research, I anticipated finding different experiences or different outcomes of veterans' transitions into the IT workforce based upon the educational pathway the participants completed; however, those distinctions did not emerge in the data. Although differences among groups within the case did emerge that manifested as different embedded units of analysis, just not in the way I expected. The differences that emerged between participants' experiences during their transition from the military and into the IT workforce were more closely related to Schlossberg's 4 S theoretical construct of *situation*. While I will address participants' experiences related to the remaining elements of Schlossberg's model (self, support, and strategies) later in this chapter, one of the key findings of this study was directly associated with the *situation* within which veterans approached their transition into the IT workforce. Life circumstances, time spent in the military, type of military service, prior

experiences, and initial experiences upon military separation were associated with different situations. Tables 3 and 4, and the descriptions below, provide some of the characteristics of the participants within the case and assignment within units of analysis.

Table 3

Embedded Units of Analysis, Military Specialization, and Position in Information Technology (IT) Workforce

Group Title and Abbreviation	Military Specialization	Position in IT Workforce
Active Duty – Transitioned directly into IT pathway (ACDU)	Navy Machinists Mate Marine Administration Army CBRN Specialist Navy Radio Technician	Technical Account Customer Liaison Systems Administrator Cybersecurity Consultant Network Administrator
Reserve Forces – Gradual transition (RES)	Army Aviation Army Engineering	Data Analyst Software Engineer
Active Duty – Did something else first before IT career (DSEF)	Army Engineering Army Crypto-Linguist Army Infantry Air Force Avionics	Software Developer Cybersecurity Technical Writer End-User/Helpdesk Associate Customer Support Representative
Active Duty – Retired (RET)	Marine Artillery Army Fire Support	Cybersecurity Exercise Manager Networking Instructor

Note. CBRN = Chemical, Biological, Radiological, and Nuclear.

The first unit of analysis within the case was comprised of participants who served within the active duty military forces for several years and transitioned directly into an IT pathway from the military. In this report, I label this group *Active Duty*, which is abbreviated as *ACDU* in the quotation citations. After their time in the military, these participants separated before completing an entire career, completed an IT-related

educational pathway within the last five or six years, and successfully began working in the IT workforce. The key differences between this group and the others were that their educational pathway either included an internship or apprenticeship, or that they began their educational pathway during their time in the military, or both. There were four participants in this group.

The next unit of analysis within the case included participants who served within the reserve military forces for a few years and gradually transitioned into an IT pathway while simultaneously working in their full-time civilian capacity. In this report, I label this group *Reserve*, which is abbreviated as *RES* in the quotation citations. There were two participants in this group, and after several years of serving in the reserve forces, both participants separated from the military immediately after completing a year-long period of activation to conduct a military deployment. In their civilian careers, these participants initially worked fields other than IT, they both completed college degree programs in an IT-related field (one in residence and one online). They have both continued pursuing higher education to build upon previous career experiences. The key differences between this group and the others were that they and their families were geographically stable during their departure and return from deployment, which reduced transition stress on the family and allowed them the time to gradually identify their desire for IT, pursue an appropriate educational pathway, and gain entry into a position in the IT field.

The third unit of analysis within the case was comprised of participants who served within the active duty military forces for several years, initially transitioned into a

different career field before realizing their desire to pursue IT, completed an educational intervention, and subsequently entered the IT workforce. In this report, I label this group *Active Duty – Did Something Else First*, which is abbreviated as *DSEF* in the quotation citations. There were four participants in this group. Three of the four participants completed a boot camp-style IT training course along with IT certifications to gain entry in the IT workforce. One of the participants completed an online associate's degree to do the same. The key differences between this group and the others were that the participants initially transitioned from active duty into a different career field that they found dissatisfying, completed an educational pathway as a sort of intervention, and subsequently entered the IT workforce.

The fourth unit of analysis within the case was comprised of participants who served within the active duty military forces for an entire military career, retired from the military, and entered the IT workforce in a supporting role. In this report, I label this group *Active Duty – Retired*, which is abbreviated as *RET* in the quotation citations. There were two participants in this group. One of the participants was employed as an instructor after retirement, teaching the technical aspects of the computer systems used while in the military. Similarly, the second participant initially worked in a military training role after retirement, and was subsequently hired to perform similar training services in support of cybersecurity tabletop exercises. The key differences between this group and the others were that both the participants retired, currently work in supporting functions within the IT workforce, and relied upon their professional network during their transition out of the military and into the civilian workforce.

While there are some overlapping characteristics and similarities among the participants within the various units of analysis—where participants could possibly be categorized differently and considered in other groupings—the influence of the unique characteristic that defines each of the units of analysis in relation to the purposes of this study outweighed the influence of any other overlapping similarities. Thus, with the establishment of the overarching message of participants’ sense of satisfaction from working in an IT career and of the embedded units of analysis within the case, next, I will present the results of the remaining research questions.

Reasons for Pursuing an IT-related Career

The first research question I explored in this study was to identify the influences or motivations that impacted veterans’ decisions for pursuing a career in an IT-related field. When discussing the reasons why the participants decided to pursue their IT career, four themes emerged in their responses.

I Was the Tech Person

The first theme that emerged was that four of the participants stated that they were considered the “tech person” in their family, among friends, or at work. Even before attending a formal education or training program, they had an aptitude towards understanding new technologies and were relied upon by others as a sort of consultant. This theme was not exclusively heard within one of the embedded units; however, three of the four participants who tried something else first did contribute to the theme.

Now, before that I'd already been helping my family, my parents and stuff, when they're like “oh, how do I know what computer to buy? And how do I know what phone to buy? Why is my phone doing this? And why is my phone doing that?” So, I'd been helping them with that, but I just thought it was because they weren't

as knowledgeable as the younger generation. But at that particular job I'd noticed even people my age just didn't know how to use computers in the way that I thought was normal. So that's kind of what made me realize that maybe I had a knack for IT. And so, I started researching trying to figure out how to get into IT and what direction to go. (DSEF)

But I was just always, in my family, I was the tech guy. I was the guy who just you could hand me, back then, an iPod, and I had never touched it before, and would in five minutes figure it out. That kind of thing. It was just always my skillset I guess you would say.... Even during my deployment...they needed an admin IT person for the [computer] networks....we needed two individuals, and they had to be able to pass a networking, really intro level, but there was a test in order to be able to service those machines. And so, I got "volun-told" that I was the guy to do it, so I became an impromptu admin staff throughout my deployment, for better or worse. (ACDU)

And so, I'd always had that, I was like the IT guy for my family anytime somebody had problems with a printer or something, they were like, "hey, ask [name removed] if he can figure this out or whatever. And kind of dabbled in building computers with friends and stuff, and actually built my computer that I'm on right now, and I built my son's computer. So that was pretty, that was kind of the big IT stuff that I did before I got into starting my degree in actually trying to get into the IT field after I realized that there wasn't really a future in that automotive factory that I was in. (DSEF)

Influential Other

The second theme that emerged about why participants entered the IT field was that five of the participants in the study stated that their decision to pursue a career in IT was largely influenced by another individual. While this theme was also not exclusively heard within one of the embedded units, three of the four active duty direct IT pathway transition participants contributed to the theme.

So, I'm subscribed to the VA's emailing list, and then just out of nowhere randomly, they're like, "Hey, we're offering this pilot program. Does anyone on the phone want to try it?" I'm like, "Okay, let me just see if I can't get approved. If I don't, okay. But, if I do, that's great." (DSEF)

I think there were a lot of movie influences maybe, but I mean it was curiosity for me. Again, I was exposed to a computer when I was five or six, and I just always

had a kind of fundamental or inherent curiosity with technology. And again, my dad was, or I never mentioned this, but my dad was a mechanical engineer, and so when it came to fixing stuff, he was a guru, right? And so, I think I ultimately wanted to play out that same capacity and fix things, but I just didn't want to do it with mechanical aspects, I'd rather do it with technology. (ACDU)

And I guess the person who probably steered me the most was probably my dad.... He worked for the [same organization] for a time and I guess he was the one that kind of solve [inaudible] system engineering. "They got a, you know, degrees in systems engineering at this school you're going to, why don't you check that out?" One thing led to another and I ended up going down systems engineering. (RES)

So, after I got out, like most Marines, I tried to do something that was closer to what I did in the military. But as far as my MOS [military occupational specialty] was concerned, that had dealt with human resources. And I don't know if you're aware of it, that's [not] a male-dominant career field. So, it was kind of hard for me to get into it. But when I started and I tried it.... My first major was administrative office technology, something like that. And I did one semester and I got completely bored. It was a lot of paperwork, letter writing, and correspondence. It put me to sleep to be honest. And from there, I decided when I was in the military—I spent a lot of time with the comm guys and the data Marines. Those are some of my best friends. And ultimately, I was kind of jealous. Because when I'd seen what they would do, like send up [data] to satellites and all this cool stuff they would get into. It was stuff I wanted to learn, but didn't have the time to. And so, during college, when I got bored with my first major, I decided to try the IT side. I had always spent a lot of time on computers and I knew the inner workings of them and using them every day, so figured I would try my hand at it. (ACDU)

Actually, a friend of mine had gone through the apprenticeship program for [my company]. And he suggested that I look into it and that's what led me down this path to the apprenticeship program.... And so, this guy actually got on LinkedIn. That's how we connected. And then he was the one that was like, "oh, I'm doing this apprenticeship program. You should look into this. We got computers...." We were talking and it that's what led me down this path. (ACDU)

Personal Interest

The third theme associated with why participants decided to pursue a career in IT was that nine of the participants stated their decision was largely a result of a prior interest in IT. This theme was articulated across all of the embedded units, except for the

group of military retirees. Both of those individuals expressed other reasons for entering the IT career field.

Honestly, it all started with Doom [video game], to be totally frank. My father was doing an undergrad while he was working, and the closest college to where we were living...was about an hour and 15 minutes. And so, at that point in time, he would have to go to the library to write up papers, or do research. And so, he used some school money to buy a giant desktop Windows 3.1 machine. And once we got dial-up internet, I was basically hooked, man. Just running programs. I thought it was the coolest thing, being able to connect to the internet, play video games on it. All that just hooked me in. (RES)

So, from the womb pretty much; I was always interested in computers. I've always had a knack for it. I was playing around with Windows DOS when I was like 5 or 6 years old. So, by the time I was 16 or 15, I was messing around with penetration testing and doing a lot of fun things with computers. I initially went to school for accounting, and I was working in the private sector doing internal audit for a number of years before I joined the Army. And when I was in the Army, I was realizing, "All right, this is not what I want to do full time. It's now or never. Carpe diem. Right? Seize the day. So, I'm going to go ahead and choose IT. This is it." So, I started my second bachelor's in cybersecurity from [name removed] University, and when I transitioned, I had about eight months left of my degree, so I finished the majority of my degree while I was enlisted. (ACDU)

Yeah, as a kid I've always been playing around with computers. And I knew that I was more "techy" than my other friends. So, I used to also be a DJ. I used to play with audio recording, did a little bit of video editing. And so, I've had [IT] interest as a young child. (DSEF)

Prior Experience

The fourth theme related to why veterans in this study decided to pursue a career in IT was that eight of the participants had some kind of prior work or personal experience that influenced their entry into an IT-related career field. This theme was articulated across all of the embedded units, and both military retiree participants expressed this reason for entering the IT career field. In particular, both retirees ended up

in an IT-related field because of prior experience that tied back to what they did while still in the military.

I was a...fire direction specialist for the Field Artillery in the Army. I heavily worked with computers, networking, the computers for fire mission data, and that sort of stuff.... So, where I work...we have our IT relations with soldiers, our war fighter exercises where everything is simulated, and I worked with them prior to getting out and they knew I was getting out and offered me a job because they knew my work ethic and all that good stuff.... So, the two main systems that I teach in my class are the two main systems I used in the Army. I do have other systems now that I didn't work with prior to, but for the most part, it's the same exact thing. (RET)

[My previous job] was just doing exercises with the [military]. So not real dissimilar to what I had done [on active duty].... So, I started looking for a job and saw an exercise, a cyber exercise planner.... And so, I applied to that and, you know, I was pretty honest that [I was] not a cyber expert, but I'm pretty good at exercise stuff. And, and he's like, "you know, we can teach you the cyber piece of that." They were looking for the exercise part. (RET)

I had an aptitude just for picking up things quickly. I really liked just learning different systems and then I started training on these systems and then I started training other people at the firm wanting to use these systems, so I got a promotion, a couple of promotions. The next thing you know, my job was to actually go to different member firms and actually show the capability of new technologies and how we could implement those to save time and save money or just help our clients. One thing led to another. I was writing—my team needed someone to write some HTML code to send emails. I did that very easily, so it was something I fell into. One thing led to another then I realized, hey, I like the coding part more than I like my actual job. I literally resigned, took a coding boot camp, enrolled in [my current university] and then yeah. Here I am. (DSEF)

Just from working in the Navy and being around the comms [communications] gear and seeing all the ways it was secured and how everything had changed and how computers were being utilized for that, it just kind of opened my eyes up to the possibility of, "Hey, maybe consider computers when you get out." (ACDU)

Overall, according to the participants within this study, there are various reasons veterans decided to pursue IT-related careers. While influential people helped guide some of the participants into the IT field, others had developed a personal interest in IT

somewhere along their path that helped them arrive at their decision, and still others had a more gradual introduction into the field resulting from related prior experiences. While I followed an inductive approach when inquiring about the influences on participants' decision to pursue an IT pathway, I did ask one targeted question about the influence of the military transition process.

Transition Assistance Program (TAP)

One specific question I asked of participants pertaining to their transition out of the military was to discuss their experiences regarding the transition assistance educational programs offered by the military services to veterans prior to their separation, and whether those programs influenced participants' transition decisions to pursue IT. Participants in this study offered varying perspectives regarding the influence of transition programs on their post-military decisions—some perspectives were positive and others were negative. None of the participants discussed experiencing influences that focused on IT or on transitions into any other particular industry. Since the VA has taken steps to improve transition courses within the last decade, I am only reporting results that occurred within the last few years. Two themes emerged regarding transition assistance courses.

Employment Preparation

The first theme that emerged when discussing transition assistance courses dealt with an intended benefit of the courses. Several participants explained how their military transition course helped prepare them for the steps of networking or finding, applying, and interviewing for an employment opportunity.

So, it did help me with the resume building. When I graduated high school, I never had a job. I graduated high school on a Friday and that following Monday I was in boot camp. I had no prior job experience. So, TAPS did help me out with preparing yourself for a job interview. And showing you how to build your resume. (ACDU)

So, the one benefit that did.... Where I said I had a friend who'd gone through [the same internship] program—I actually met him in the TAPS program. He wasn't actually [in my unit] or anyone I had actually known. He was just someone that was going through TAPS at the same time; we linked up at TAPS. That's one of the other good things. They did have a speaker that came in and helped us fix our [profile] and take pictures and stuff for our LinkedIn.... I have my LinkedIn profile, which is like the best thing I think that came out of TAPS—is my LinkedIn profile. (ACDU)

For the most part, it was just checking the block, but it did help with writing a resume, and kind of get you into the mentality of “I'm getting out, I have to support myself, nobody's going to be there to cradle you and help you get back into society.” It's—you are doing what you got to do and you're supporting yourself and somebody will be there on the back end to just kind of keep an eye on you. (ACDU)

Insufficient Time

The second theme that emerged about transition programs was that some participants expressed they did not have sufficient time to focus on the content of the course. Some of the distractions were due to their competing work responsibilities, others were a result of being on deployment, and still others were distracted due to the online delivery method required as a result of COVID restrictions.

Yeah. I did go through TAPS. What's the best word.... TAPS was a breather from normal work, but at the time that I was going through TAPS we were having a lot of issues. And so, for me to take.... The TAPS is a two-week course—at least it was when I was going through. It was really hard to try to schedule that time to get the two weeks out, off of work, even though I was transitioning out—because the guy I was supposed to be turning over to had not shown up yet. So, for me to leave all my guys unattended and everything, it was just really hard. So that two weeks I'd say...I did less stuff with TAPS and more stuff with work because I would leave that class and go straight back to work to make sure nothing was broken and that, you know, [everything was ok]. (ACDU)

Not a ton, but I was kind of at a disadvantage on that one. When I started my TAPS classes we were on deployment, so it was just kind of a “do it a little bit during your shift” and maybe sneak onto a computer here and there to complete a few more lessons or units. I think if I would've had more time to actually sit down and do it or have a physical classroom to go to, it probably would've been a lot more beneficial. (ACDU)

I feel like it was a waste of my time. Everything was online or we had to call in, and it was very difficult because it wasn't in person, and when we did the online stuff, it wasn't like you and I are here. I had to log in to computer and just listen to the instructor talk the entire time. But me, I already knew what I was going to do whenever I was getting out of the military, so I had a pretty solid path. But as far as the TAP, if you're a younger soldier or a younger person, I feel it's beneficial. But for me being in so long, I had a pretty solid idea [about my plan after transition]. (RET)

With the results regarding the reasons for transition into the IT field and some experiences transitioning out of the military complete, next, I will address another decision veterans faced along their road to an IT career—the decision to select the educational pathway they pursued.

Reasons for and Experiences Within Educational Pathways

The second and third research questions I explored in this study were aimed at learning about the reasons for and motivations behind veterans' decisions for selecting the educational pathway they pursued to enter the IT workforce, and their experiences within the programs. Organized by the four units of analysis, Table 4 presents the educational pathway participants completed, the time when they completed them (during their time in the military, or after separation), and a general description of the type of motivation that guided their decision.

Table 4

Educational Pathway to Information Technology (IT), Timeframe, and Category of Reason for Selection by Unit of Analysis

Pathway	Timeframe	Why did veteran select that pathway?
Active Duty to IT		
Online Bachelor's degree (with internship)	Still in military (mostly)	Needed online – stationed overseas; Google research
Associate's degree (with Internship)	After separation	Geographic proximity to home; programs offered
IT Apprenticeship Program	After separation	Introduced by peer
IT Certificates	Still in military	Military course (required for military field, but not in IT)
Reservists		
Online Associate's degree	Still in military	Needed online – geographically remote; Introduced by peer
Bachelor's/Master's	Still in military (BS) After separation (MS)	Influenced by father (BS); Professional experiences (MS)
Did Something Else First		
IT certification program	After separation	Veteran service advisor (Wounded Warrior Project)
IT certification program	After separation	Veteran service advisor (VA advertising email)
IT certification program	After separation	Veteran service advisor (VA counselor)
Online Associate's degree	After separation	Needed online – working with family; Research
Military Retirees		
Instructor training	Still in military	Required for assignment as military instructor
IT Certificates	After separation	Required for management position

As depicted in Table 4, participants in this study completed various types of educational programs to gain entry into the IT workforce. When looking within the individual units of analysis, in only one case (Did Something Else First) is there a consistent theme of the type of program pursued. As described in Section 2 of this chapter, the participants who tried different career fields before pursuing an IT pathway were all dissatisfied with their vocational direction after the military and found an intervention to help them pursue their passion or find a renewed sense of purpose in their

work. Three of the four participants in that group completed an IT certification program that enabled them to change the direction of their career after a several-week program, and one completed an online associate's degree in IT that allowed entry into the IT workforce.

When describing participants' experiences within the educational pathway they completed, Schlossberg's 4 S theoretical construct of situation, self, support, and strategies offers a useful framework within which participants' responses can be organized. As mentioned above, one of the key findings of this study was directly associated with the *situation* within which veterans approached their transition into an IT educational pathway, and the distinctions between the categories of participants' situations translated into the units of analysis presented herein. Thus, having already addressed the situations from which veterans approached their transitions, next I will describe participants' experiences during their educational pathway pertaining to their personal perspectives or mindsets (self), strategies they applied, and support they received throughout the process.

Self

When participants discussed their experiences throughout their educational program and transitioning into the IT career field, two themes emerged related to their personal characteristics, perspectives, or mindset. Transitioning into a new career field, especially into IT, was not easy for any of the participants. Most of them ascribed at least part of their success to a sense of passion they experienced—expressed either as a sense of drive or self-determination, or as the pursuit of an intellectual curiosity.

Driven. The primary theme participants (nine overall) described regarding self-related attributes that contributed to their success throughout their educational pathway and transition to IT was a sense of drive, hard work, or determination that fueled a passion to succeed.

I think for myself, it was just finding that passion and that drive, and I think that's what really pushed me towards my success. (DSEF)

So, my mindset [to basic training in the military] was there's an end. No matter what, no matter how bad it gets, there's an end. Even the 5,000th pushup I was doing, and my arms were ready to break, it's like "it'll end, it'll end, it'll end." And so, that was just the mindset to persevere. That mindset is what you need to build a really strong career I think in IT. (RES)

I think intelligence is relative, right? And at the end of the day, I think perseverance and tenacity are huge indicators of success. So, I think just because someone is, someone could be hugely articulate, but if they don't have drive or passion, I mean, they may not last. And so, I've seen a lot of really smart people give up over people who are less intelligent but because they had the drive.... I was working 60, 70 hours a week in my former life as an accountant. I hated every minute of it. Whereas now, I may be working 60 to 70 hours a week, but I love talking about what I do. I can talk about cloud virtualization all day if I was given a chance. (ACDU)

I will do work and then usually like on the weekends, after work, I'm sitting at my computer, trying to, <laughing> trying to practice or learn or put new ideas into practice and see if they work. So, it is rigorous, but I enjoy it. That part doesn't feel like work to me. I do enjoy it, so...but if you don't have that passion for it, then it just feels like work. You know, you're not going to...I don't think you'll have the drive to learn everything that you need to learn to do it. (RES)

In my time in the military, I was with an infantry battalion. So, you work constantly, there are no such thing as set hours. And so, I already built that work ethic. So, during that grind in the internship came pretty easy to me, where others kind of failed.... But that's the thing about the military. It does set you apart from...and I'm not downplaying any civilians, but most college kids who never had that experience, they don't really understand the push you have to get through the tough stuff. (ACDU)

Intellectual Curiosity. However, in addition to an overarching sense of drive and determination, another personal attribute that helped participants persevere throughout their transition into the IT workforce, or what they felt would make others successful doing the same, was having an intellectual curiosity. Three of the participants described how an intellectual curiosity about technology in general, or specifically with computers or information technology, helped them succeed.

Somebody who just really doesn't care is probably going to have a little harder time learning IT. If they don't pay attention to details, they might have a little harder time learning IT. But when it comes to just personality type and their experience level, I didn't know that I had a knack for IT until, much later than I thought, "Can I do IT?" I mean, my generation, most people, it seemed like that got into IT, it was because they were messing around with computers in high school. And I didn't have any of that. So, I thought, surely I'm not an IT person, but that wasn't the case. I had a knack for it. I had the curiosity for it. And I found that even when it came to just, "how do I know which computer to buy?" And I think this was one of the factors that helped me learn that I had the curiosity and knack for it. I just did research. (DSEF)

I feel like.... Well, with most things, I personally believe that you have, you get out of something what you put into it, right? If you go into it thinking, "hey, I'm just going to breeze by, just pick up the bare minimum" and you're not very interested in it or have the intellectual curiosity to explore things and look into things on your own or just interested in the field in general, you're going to struggle. There were a lot of guys who just start to, "hey, this is going to be some sort of silver bullet—I do this and now I'm just marketable" and it is...in some sense, but you actually have to, if you're not interested in something, [if] you don't put effort into it, you're not going to succeed at it. There were some people who I think had a big wakeup call with that one. (DSEF)

Research. A lot of research, a lot of Googling, testing as well in Sandbox environments [isolated testing environments]. There are certain things that you may learn theoretically, but until you apply them within a Sandbox environment, they just won't make sense.... Those were expectations [of the program], yeah, but also out of curiosity as well. The project I was working on was a virtualized developer. Sandbox incorporated a lot of security, best practices, and so inherently, my project required me, as most people did as well, to play around within the [development] console.... I think there were a lot of movie influences maybe, but I mean it was curiosity for me. Again, I was exposed to a computer

when I was five or six, and I just always had a kind of fundamental or inherent curiosity with technology. (ACDU)

Strategies

Participants discussed another element of Schlossberg's 4 S theoretical construct regarding career transitions—*strategies*—when describing their experiences, and what made them successful throughout their educational program and transition into IT. Three themes emerged in the results when participants discussed the strategies they applied: online tools, relying on peers, and time management.

Online Tools. The first theme that emerged when participants discussed strategies that helped them succeed during their educational pathway was that they used some type of online tool or aide. While several of the participants discussed the academic resources provided by their institution, those responses are not included herein. These references participants discussed were about online tools that augmented traditional materials provided by educational programs, such as online university libraries or research databases. Some of the tools were informational reference guides, like YouTube, and others were application-based, such as Quizlet. Overall, seven participants described using online tools, but all of the participants in the active duty and reservist units of analysis described relying upon some type of online tool.

Oh yeah. YouTube. Especially some of the concepts that either were old high school—because I was late to college. I had been out almost 10, yeah, actually 10 years before I started college. Brushing up on some of the math, or other concepts that I didn't know. Used some YouTube videos to gloss over.... On the technical aspect, you use Pluralsight, which is an on-demand course website. I still use that to this day for my job. Others like Stack Overflow is pretty big in the software development world, and that became a good resource for that kind of technical classes and concepts. (RES)

In the IT field, Google is your best friend. Honestly there isn't an answer you can't find on Google. No matter what problem you run into, somebody has had that same exact issue. So, you run through all the forums. And still to this day, if I don't understand something, I Google it.... So, internet is one of the greatest resources when it comes to the IT field. If there's something you don't understand, like your instructor isn't really getting it through to you, just Google it and somebody's broken it down to some form where you can regurgitate that knowledge. (ACDU)

We had A Cloud Guru that we could use, Linux Academy before they were bought out by a Cloud Guru. And then we also had WizApps. So those sorts of things we could use to study. Myself, I do pretty good, like audio types. So, I would use those videos to study, but then I would go also to supplement it with actual books. So, O'Reilly.com. I would go use those and get the actual, like physical books and go read those along with the, with the video. So, kind of like, okay, let me supplement this. (ACDU)

Relying on Peers. The second theme that emerged when participants discussed strategies that helped them succeed during their educational pathway was that five of them relied upon their peers. Some of the peer groups that participants discussed were fellow classmates—at times, other veterans completing the same course of study. Other times, participants turned to coworkers or colleagues either while they were still in the military or at their current workplace, to help them understand the application of their classwork in real IT settings. These responses were not consistently found within any individual unit of analysis.

Yeah, it's funny that you asked that, because again, everyone started from ground zero, as far as cybersecurity went. So, when one of our professors, they gave us a task to basically, hack his computer. We all looked at each other on Zoom, or Teams, or whatever. And we're just like, "Dude, how do we even accomplish this?" And everyone's like, "I don't know." But we brainstormed and tried to figure it out. And we were able to figure it out, because we were all just newbies and trying to help each other. (DSEF)

We all helped each other. Like if one of us was struggling while we were studying because again, all of us had to pass those certs in order to complete the apprenticeship program. You know, we would have study sessions and say, "okay,

well what are you not understanding? Well let's, hey, we're going to go over this." And even though we were again, spread out throughout the country, we still looked out for each other, which was something, I think, it's kind of that military training in my opinion, like you look out for each other.... If anybody found any good study material, they'd say, "hey, here's a good site—go to this." Or we would come together like, "hey, we're going to do a group study session and I'm going to have a Zoom call. You want to jump on?" "I'm going to be on Slack. You guys want to jump on and we can quiz each other?" So, we did that and it's like having a teacher right there sometimes. You're not understanding your concept and you're going to be like, "okay, I don't understand this, guys. Can someone help?" And there are like three other guys sitting there—"Oh yeah, no, you got to do this and this." (ACDU)

If I didn't know something, I could go find somebody in the IT side of the house and ask them, "Hey, what is this? What does this mean?" Basically, utilizing whatever resources were around me to try and help me get a better understanding. I never had any physical books on it, but managed to find digital copies online that if I couldn't find anybody, I could reference.... If I don't know something about IT that I have a question about, I've got resources on the ship. I've got people that I can ask and say, "Hey, I don't get this. Can you explain it to me in a way that I would understand?" (ACDU)

So, I rely a lot on my peers because they do a lot of the networking and the security aspect, the information security, so I ask them. I'll look at my coursework and I'll get hands-on with them in real time, in real life, and the benefits through the coursework makes it more familiar, easier to understand what I'm doing.... And then with the Azure [cloud platform], dealing with those applications, I actually used some of that where I work. So, my coworkers are familiar with it and they help me out. (RET)

Time Management. The third theme that emerged when participants discussed strategies that helped them succeed during their educational pathway was that they intentionally managed their time to either be more effective with accomplishing academic tasks, or to maintain a work–life balance. Twenty-five percent of all participants discussed managing their time in some way, but the responses were not unique to any particular unit of analysis.

I set my calendar kind of, same thing I do with school. You know, you set your calendar like, okay, I'm going to go in the office. I'm going to study for Friday,

Saturday, and you know, “okay, babe, we’ll see you on Sunday. We’ll do some family stuff on Sunday, but Friday, Saturday, I need to, I know I’m not at work, but I need to work.” (ACDU)

The counselors really kind of work with you and they try to ask as many questions as they can and they say, “okay, if you’re working like this, then you should probably try doing like Friday, Saturday, and Sunday” or whatever your situation is. They try to give you like the best formula that would work for you to try to get your assignments in on time. And I really took what they told me to heart and did what they advised, and it really worked out for me. (DSEF)

I haven’t really changed; still PT [physical training] every morning before I go to work. It’s kind of hard to break those old habits. (ACDU)

Every day you’re expected to raise the bar so to speak, and so it’s good and bad. I mean, it’s good for just personal drive and bring out the best of myself, but also there’s times where it’s like, “Well, I’m doing a lot of work right now. Maybe I need a break.” And so, it’s, I think incorporating a proper work–life balance is hugely important. If you do not incorporate the work–life balance, you’re going to burn out very, very quickly.... In the Army, we worked out as a necessity, right? You had to wake up at 0500 every day, formation at 0630. You had to work out and that was it, whether you wanted to or not. So, once you transition out, if you don’t force yourself, you’re not going to work out. And I feel as if you, especially if you work in a competitive environment like this, you need to continue to exercise to just to cope, right, to kind of find that peace. (ACDU)

Overall, participants in this study described numerous types of strategies they used to be successful in their coursework or during their transition into an IT-related job. Most commonly, participants used some sort of online program or tool, turned to their peers or colleagues for advice, and managed their time effectively. In addition to situations, self, and strategies, participants also described the importance of the fourth element of Schlossberg’s 4 S framework—receiving support.

Support

All of the participants in this study discussed some type of support they received during their educational program and transition into the IT career field. While three

primary themes of financial assistance, family support, and academic and career counselling emerged in response to questions about the type of support participants received, they also described support received when explaining how they got their first job. While some participants did mention support from peers, the characterizations of those descriptions were more appropriately described as strategies and were therefore included in the Strategies section above.

Financial Assistance. While the GI Bill was the primary source of participants' financial support for education, they also described other sources of financial support to augment their GI Bill benefits.

GI Bill Supplemented With Part-time Work.

That was a big help. Not only was I going to school full time, doing internships. I was also working at Best Buy too. So, I was working seven days a week. Using my GI Bill—using that BAH [Basic Allowance for Housing], that really helped me out a lot. Set myself up for savings and everything. The GI Bill, it really keeps your mind at ease. You might not have to worry about when the next paycheck's coming. It gives you a place to stay if you need it. You don't have to worry about spending money on books.... That was a blessing to me. I don't know where I'd be if I didn't have that. Paying for school—those student loans are crazy. (ACDU)

GI Bill Supplemented With Federal Loans.

It would've covered, I would say probably between federal financial aid and GI Bill, it covered probably 85 to 90%. Unfortunately, [what] we don't get is a proper financial class on how to make sure you're not taking more loans than what you need. Yeah. It seems great to get that refund check, but you're not setting yourself up for success borrowing against your future, for sure. When I went to [a state university], my funds were not enough to cover the courses. That's where I incurred more of my debt. Had I stayed with [the online program], I probably would've walked away with basically debt free. Because for the most part, it [GI Bill] covered just about everything. And that was another thing [the online university] did was for military students, they give you a military discount, but it moved your cost down to the cap for GI Bill assistance. You weren't really going over, and your cost included books, and all this sort of stuff. The real help was the Post-9/11 [GI Bill] with the housing allowance stipend and stuff that helped cover some bills, and take some pain away from the budget. (RES)

In addition to the GI Bill, participants also described other veteran-friendly educational opportunities sponsored by the Federal government or nonprofit organizations that offered quality education programs at no cost to students needing support.

VA-funded Programs.

The VA actually offered a program [called the Vet Tec Program]. It was a pilot program going on and I just read online and it said that it only takes one day out of GI Bill. I figured, “Hey, why not?” So, then I looked up courses online, via an approved site. And so, I found one in [the city] where I currently live right now. And so, I was like, “Hey, let me [inaudible] this out.” And I saw that they were offering cybersecurity and I took a chance at that. And then, I fell in love with IT from there on out. (DSEF)

Nonprofit Association-Funded Programs.

There was a rigorous process [for the CompTIA Tech Career Academy]. I recall when they first had us come and discuss the course to see if we would be appropriate to go into the course because it was free. It was a hundred percent free at the time. So, one of the things that they did is, you applied and then you came and you interviewed and they would select appropriate people who, for whatever reason they felt were appropriate. I'm sure they had criteria. I don't know what all their criteria were, but would be appropriate people to have go through this course for free. So, it was a process, but it wasn't all veterans. (DSEF)

Department of Labor Partially Funded Public–Private Partnership Programs

So, I completed out of the military an apprenticeship program which was through the Department of Labor, a third-party online program, and then [my company]. And it was a one-year apprenticeship program where [they] task us with a whole bunch of tasks of OJT [on-the-job training] plus [an] additional three months of actual classroom training before we got to the OJT. So, the initial process before everything started you, there was a whole interview process. Well, the testing process to get into it, then that's through the third-party program. I think it's Apprenti. [You also have to] pass their tests. They have like logical tests, math tests, and some computer skills, basic computer skills tests, I believe. And if you pass like all three of those with a high enough score, you are then able to interview with them for different opportunities that they have. And basically, companies like AWS [Amazon Web Services] and Microsoft and Google and all, all the, the big five, like FAANG [Meta (FB) (formerly Facebook), Amazon (AMZN), Apple (AAPL), Netflix (NFLX), and Alphabet (GOOG) (formerly Google)], you know, Facebook, Apple, all of those guys like use them.... And for

me, I completed three months of actual classroom training.... But from there after completing that classroom thing, we also, during those three months you had to take a, your initials certs. (ACDU)

Employer-Sponsored Financial Assistance. Especially for veterans whose educational benefits expired, or potentially for those who transferred benefits to family members, another source of income that assisted participants in this study to pay for their education was employer-sponsored tuition reimbursement programs.

And this current employer that I'm with, they also had something called professional development where we could borrow or they give us \$2,000 a year to use, and I used that as well to help with some of the classes. Because actually, I want to say the last two or three classes that I had, I actually had exhausted all the funds that I was able to borrow from the government. So actually, that was a good thing that my company was offering that because I needed it, I had to use it to finish my degree. (DSEF)

Financial support was essential for participants to complete their educational programs. Most, if not all, participants would not have been able to complete their educational pathway without such support. However, perhaps less tangible, family support and academic and career counselling also played important roles for participants during transition.

Family Support. In addition to financial support, participants also described support from family members as critical.

I leaned on my wife a lot. She was really supportive and so any problems that we had that we needed were, she needed to kind of pick up the slack for me or whatever, because I was doing an assignment or writing a paper. She's really great about supporting me on that, and taking care of the kids and all that stuff that I needed while I was doing my schoolwork. (DSEF)

Definitely. Yeah. My family's very supportive. My parents live in [neighboring state], so they're not, they're not too far. They've been very supportive. My wife has been very supportive. And yeah, my support structure probably, you know, it's very good. So, I'm very thankful for that. (RES)

My fiancée, she was a big help, especially when it came to changing my majors, because I was worried about it. And honestly still to this day I hate homework. So, she would help me push through, motivate me to get it done. (ACDU)

My family is very supportive. My wife, she was again, prior military, before we met... [she] got out, got her bachelor's and her master's all while raising her son, my stepson. And so, she was kind of like a really good factor of me getting out [of the military] also. She kind of told me, she's like, "I already did it. I'm here to support you. You go do you, we will be here." So now she makes sure that there is dinner when I get home. Because I now have late days, like I'm in class til like 9:00 sometimes on Monday and Wednesday, I won't get home until almost 10, she makes sure food is ready for me. She's like, "I left for your dinner in the stove." Or, you know, "I put it in the container." We have a puppy and because I stay up so late instead of me getting up because I, I wanted this puppy so bad. But instead of me getting up in the morning she'll take the puppy out then kind of take some of that burden off and she's like, "I know you didn't go to bed till like 3:00. I know because I rolled over and I saw the time and I was like, 'okay, well I'm sorry, you're not getting enough sleep to take the dog out. You'll be fine. I can take him out.'" I'm like, "okay." So having that support system has been great. (ACDU)

Academic and Career Counselors. The third theme that emerged when discussing support was related to academic and career advising. University and VA counselors played a significant role in several participants' path to successful transitions out of the military, through school, and into the IT workforce.

The VA and the voc[ational] rehab was amazing. They were.... I feel like if it was not for the VA, honestly, I feel like I [would be] in a far worse place than I was because I definitely, there were some, a lot of dark days there at the beginning, but they opened my eyes to it and I just got to see just a different, we got to see something that I wanted and I didn't know I wanted. (DSEF)

I also had the support of [name removed] University as well. They were the ones that really kind of guided me into that initial interview. (ACDU)

The [university] counselors, they're really great. Like they really talk with you and walk you through everything, and I mean, it was great. My experience with them was great, so I do definitely recommend anybody that's considering it to at least talk with the counselors from [name removed] University because they were great. And the counselors kind of help you build your resume and give you some

contacts and actually you could join a, I guess some kind of email thing where they highlight employers and you can go to a live seminar where a representative from that company comes and talks about the company. Not really so much as offering the jobs to people, but just explaining [about the] company and all the positions that they have. And so, if they did have IT jobs, which usually they did, they would say, “okay, this is the IT jobs that we have, this is what they do.” Just kind of get people familiar with the company, and I want to say it was like we, once a month where they would highlight an employer, and you could go to the live seminar and you just sign up to get the alerts of when they're going to have an employer talking live. (DSEF)

And I was fortunate enough that my school had an internship program and one of my instructors—myself, and another student, we were excelling at most of the work that she was giving us. So, she had asked us if we wanted to take part in internships.... My instructor, she helped me out greatly because I didn't know anything about internships. I didn't go looking for it. And she [inaudible] and it helped me get where I am now. So, I didn't have to do any crazy interviews, going from door to door, selling myself to different companies. Somebody saw potential in me and gave me the opportunity. So, I'm very grateful. (ACDU)

The three themes—financial assistance, family support, and academic and career counseling—emerged when participants discussed the support they received throughout their transition. In addition, participants also highlighted additional sources of support when discussing how they received their first job offer.

Transition to First Job

As presented in Table 4 and discussed above, a trend did emerge in the Did Something Else First group regarding the type of educational, boot camp-style intervention completed that enabled those participants to transition into the IT workforce. However, when considering the overall transition from the military, through an educational program, and into a career in IT, two other themes seemed to be particularly impactful. First, within the Active Duty unit of analysis, three of the four participants completed an internship or apprenticeship during their educational program and, second,

several participants across groups discussed the importance of using *networking* to find employment.

Internship. Of the ACDU members, three of the four participated in an internship or apprenticeship that played a significant role in their successful transition.

If we completed all those within that timeframe, that one-year timeframe, then you were eligible through the Apprenti program to be hired on through [my company] ...[so they] had already guaranteed us if we completed that portion, that they would hire us on. So, kind of like had a guaranteed job. I completed the work. So, I just knew once I got out here, I was like, okay, my job is to study and learn. And that's kind of what I did. (ACDU)

So, with that, once the [first] internship finished, [my instructor] asked me if I wanted to take on another one, and I told her, "Yeah," because I wanted to get into the IT field head-on as quickly as possible. Because it's a growing field and you learn something new every day in IT.... I started [with my company] in 2016 and after my 6 months, because the internship was a 6-month period, after my 6 months, [they] decided to hire me on, which I was very fortunate. And I hit the ground running.... I finished my degree, I want to say in September, 2016. And I got hired fulltime in August. So, it all worked out perfectly for me. (ACDU)

Huge, huge. I think especially now given my current role at [my company], I would not be as successful without the internship I had during the summer of 2021. (ACDU)

When asked if the internship led directly to the employment opportunity, one participant responded:

A hundred percent. Yep. Yeah. (ACDU)

Networking Referrals. Retirees, along with participants in other groups who had been in the civilian workforce for a longer time, discussed how networking or professional relationships were important when trying to find employment.

Coming out of the military, I didn't know what LinkedIn was, how to use it. Even when I had one, I was just like, oh, whatever. But networking, it's huge. I met so many people just going to events, being invited to an event. I actually found out about [my job] from a networking event. I didn't even consider being a software

developer at a [financial institution]. It was like, “oh, well, I just want to join the Googles and Amazons” and everyone just wants to join the Googles and Amazons. But once I had a networking event and they, talking about [the company] and work–life balance and things that mattered to me, it was a pretty good fit. So, I think that networking is another huge hurdle I had to get over. Just having the confidence to go out and speak to someone about something, reaching out to someone randomly at a company that you want to work for and say, “hey, could you spend 30 minutes or an hour with us just to talk about whatever.” (DSEF)

The job I have currently, I got that through actually a friend of mine. Who's a recruiter.... We had contractors who were working with us at, from the company that I'm currently working at. So, I kind of had a relationship with them already. And a friend who was a recruiter...he was like, “oh, hey, [I was] looking and saw you were on the job market. This company [named company] is the company I work for now. And this company is looking for someone just like you” and turned out like I already had a relationship with them. So, it was a, it was a good match and left [my job and] went to work for them. (RES)

So, where I work...so we have our IT relations with soldiers, our war fighter exercises where everything is simulated, and I worked with them prior to getting out [of the military] and they knew I was getting out and offered me a job because they knew my work ethic and all that good stuff. (RET)

So, I called one of my battalion commanders.... and said, “hey, looking to looking to find a job....” And I had a job about, you know, an hour later. So, we moved to [a new state] and I did that from 2009 through maybe 2017, 18, somewhere in there. And that was just doing exercises with the [military]. So not real dissimilar to what I had done [on active duty]. (RET)

When exploring the themes that emerged as participants described their experiences throughout their educational programs and transition into the IT workforce, these successful veterans discussed their personal perspectives or mindsets (self), strategies they applied, and support they received throughout the process. As these themes aligned with elements of Schlossberg's 4 S theoretical concept of career transition, these were the last themes I identified during the study based upon the participants telling their own stories.

However, in addition to responding to questions about themselves, toward the end of each interview, I also asked participants if they had any advice or recommendations that they would like to convey to future transitioning veterans who may be interested in pursuing a similar post-military career trajectory. Next, I will present the results of those discussions.

Advice for Future Transitioning Veterans

When responding to questions about what advice they would offer to future transitioning veterans who may be interested in pursuing a career in IT after their time in the military, participants' collective recommendations emerged into a three-phased process.

1. Determine Level of Interest

While still in the military, potentially interested service members should take steps to explore their actual level of interest in IT. They should be curious, talk with others who work in IT-related military specializations, and find opportunities to try applying IT skills. Service members should consider watching online tutorials or completing low- to no-cost courses (YouTube, Udemy, LinkedIn Learning, etc.), and realize that anyone with an interest can find a place within the IT industry. There are many ways to enter.

And I guess that would be my advice, is just start with little pieces of research for things that maybe impact you, but maybe don't, maybe you might be curious, "Why do I care about this phone versus that phone?" Because, everybody uses a phone. And if you find that it really doesn't interest you with the research on things that do impact you, then you're probably not going to be interested in it for a career. Be curious, ask the questions, ask why, ask how, why these pieces work together or how they work together. Might not seem interesting at first, but then

when you start realizing how things connect, it starts to get more interesting. (DSEF)

I would essentially just, if you can, even just frolic at a computer, or just play around, watch some YouTube videos. Also, talk to other people that are in the IT field in the Army, or whatever branch they're in and really dig at them. If I had the opportunity to do so back then, I think I would've had a leg up, 10 years ago almost. (DSEF)

If you're interested in it, I would definitely just jump in wherever you feel like you're interested, because you're going to learn different things along the way. Also, things you may think that you're going to be, that you want to do. You have this idea of this thing, there's a million other things that are unheard of and there's so many different niches that you can get into. I would just say, just start playing around with it. You're going to find, you're going to bounce around a little bit and then you're going to settle somewhere that you actually really enjoy; and don't be afraid to learn and don't be afraid to be curious and ask questions, because that's the biggest thing, that's how you learn is literally about doing and asking questions. (DSEF)

Don't be afraid to reach out and talk to mentors and advisors first because they, everybody has apprehensions and has concerns before they start a program. Don't feel like you have to be quiet about that. You can always, there's always people, you can go talk to—don't keep those things to yourself. You have concerns about, whether it's workload or personal concerns or family concerns, anything else. I mean, you can always bring that up and get advice from people who have seen this before and seen other students go through it before. So, I would say, just speak up. Don't be afraid to talk and ask for help for people going through that transition. (RES)

My advice to people is you don't have to be a giant technical expert to get some of these certificates or to go for these degrees. It's not that hard. (RET)

2. Attain Certifications

If service members do find they are interested in the possibility of a career in IT, they should consider attaining one or more entry-level IT certifications.

I definitely recommend, whether it's CompTIA or a different program, but a program [that] does an in-person short-term course that will lead to a certification, an entry-level certification. Now there's probably others out there, but I don't know of them. So, while I'm not saying CompTIA is the only one for me, that was the best route. And they have not just the A+ [certification], but the

one below that, which is Fundamentals of IT or IT Fundamentals. Depending on the level of the person, whether they are ready to start at the lowest level or want to start the next step up, there's a variety of options as far as that goes. But that would be my recommendation as far as to get a foot in the door. (DSEF)

If you're considering it, you're on the fence about it, maybe take that A+ certification and see. It's like a hundred dollars, so it's not going to break the bank to try to see if this is the field that you should be in, if you really should be choosing it. (DSEF)

So those certifications are very important. My suggestion to anybody that's trying to get in the IT field, take the basic one first just to get your foot in the door. Because they're going to ask. My advice is to start at the basics. Even if you don't know anything about computers, to start with the basics and study as hard as you can, because it is a lot of information. They're going to throw a ton of information at you from the start. (ACDU)

3. Pursue Formal Education

Then, if after completing certifications, service members definitively know a career in IT is for them, then a well-researched college degree program that includes an embedded internship is a good next step. If service members do not have time for certification or degrees, explore apprenticeship programs to fast-track the process.

I would tell them to try to get their education while they're in the military still, then you'd have a solid plan on what they want to do to get out. They need to get in contact with the VA or the school that they're going to because there are a lot of programs that help the soldiers out, and they're not aware of those until they're out of the military so they can take advantage of a lot of that stuff before they get out. (RET)

But if you're sure, then definitely jump into an associate's degree program at least, and try to see, go from there and see how it is, because that'll help, that'll really give you a leg up to get those certifications, start doing the kind of work that you're maybe thinking about and then see if you like it, and you can keep going from there. (DSEF)

If someone knows that they want to get an IT and they know that, I would say definitely VET TEC program probably was the most, the largest or the most seismic change that I had, but getting into college and the university level, that's, the degree itself is going to help you out significantly. There's an insatiable

appetite for software engineers and just [inaudible] IT now, I don't think that's going to die out anytime soon, but I would say definitely the VA and the VET TEC program, I know it's a pilot. I think they have certain—they only have certain funds allocated, but it's a really good program that I really, I personally use and I really enjoy. (DSEF)

In addition to offering recommendations or advice to future transitioning veterans that aligned with the three-phased approach presented, several participants also recommended specific tools or resources, which I will address next.

Resources and Tools

Throughout the interviews, participants discussed resources they used to attain their educational goal or resources that they recommended for others to consider. Table 5 presents a summary of the resources described by participants. In some instances, participants described these resources when explaining the educational pathway that they completed. In other situations, participants offered these resources when responding to questions about learning strategies they used, or when specifically asked about advice they offer to future transitioning veterans. While many other resources may be available to help veterans transition into an IT career, these were specifically mentioned by participants during this study. In an effort to maintain participant confidentiality, I did not list the colleges or universities where participants attained their college degrees; in almost every situation, the participants advocated for their institution as well.

Table 5*Tools and Resources Discussed by Participants for Future Veterans Transitioning to Information Technology (IT)*

Resource	Link	Description
Learning Support Tools		
CompTIA CertMaster	https://www.comptia.org/training/certmaster	Provides overview of CompTIA Certifications and Exam Preparation
Pluralsight	https://www.pluralsight.com	Technology workforce development platform
Stack Overflow	https://stackoverflow.co	Collaborative community platform for developers to gain and share ideas
ITProTV	https://www.itpro.tv	Online and on-demand IT training and tutorials
A Cloud Guru	https://acloudguru.com	Online and on-demand IT training and certification focused on cloud computing
Professor Messer	https://www.professormesser.com	Free IT training videos for CompTIA certification
Quizlet	https://quizlet.com	Online study tools for a wide variety of subjects, including computer skills
TestOut	https://w3.testout.com	Online and on-demand IT training and certification
O'Reilly	https://www.oreilly.com	Vetted online learning IT training and certification preparation
LinkedIn Learning	https://www.linkedin.com/learning/	Online Courseware—Veterans benefits for 1 year
Google	https://www.google.com	General internet search for solving IT challenges or problems
YouTube	https://www.youtube.com	General internet search for IT video tutorials
Certification study guides	https://www.amazon.com Search for “IT Certification Books”	Amazon is one example of many book providers
LinkedIn	https://www.linkedin.com	Social networking platform for professionals
Academic Programs		
CompTIA Tech Career Academy	https://www.comptiatech.org	16-week online program to attain CompTIA A+ Certification
Vet Tec	https://www.va.gov/education/about-gi-bill-benefits/how-to-use-benefits/vettec-high-tech-program/	VA-funded IT training courses for veterans with at least 1 day of GI Bill benefit remaining
Scholarship for Service	https://www.sfs.opm.gov	US government-funded scholarships for undergraduate or graduate degrees with a 3-year “payback” work assignment

Apprenti	https://apprenticareers.org	Partially funded by the US Department of Labor, this training and apprenticeship program places candidates in IT careers.
Professional Associations		
CompTIA	https://www.comptia.org	A leading voice and advocate for the global information technology ecosystem. Provides education, training, certifications, philanthropy, and market research
ISACA	https://www.isaca.org	Equips IT professionals with knowledge, credentials, education, and community to advance their career and enable them to transform their organization
ISC ²	https://www.isc2.org	International nonprofit association helping members grow through education, training, and professional certification

Conclusion

In this chapter, I presented and described the findings of this qualitative case study with embedded units of analysis. In support of the purpose of this study—to explore the experiences and motivational factors that have influenced decisions of post-transition US military veterans who currently work in an IT-related career field—I explored three things. First, I investigated the reasons veterans decided to pursue an IT-related career and the educational or vocational programs they completed to gain entry. Next, I inquired about participants’ experiences within the educational program they completed, how they got their first job in IT, and how satisfied they were with their decisions up to that point in their careers. Overall, I asked about their experiences transitioning out of the military and about their advice for future transitioning veterans who aspire to follow a similar path. In the next and last chapter of this dissertation, I will

interpret the meanings of these findings to contribute to the existing scholarship surrounding the veterans' transition literature.

Chapter 5. Discussion

In this final chapter, I will do three things. First, I will summarize the results of this research and articulate the key findings. Next, I will discuss the implications of these findings in two ways—as considerations for future transitioning veterans and how they contribute to existing literature on veterans’ transition to higher education and the workforce. Lastly, I will address recommendations for future research and for practitioners interested in assisting veterans with their transition into the IT workforce.

To review, the purpose of this qualitative embedded case study was to explore the experiences and motivational factors that have influenced decisions of post-transition US military veterans who currently work in an IT-related career field. I examined the reasons veterans decided to pursue an IT-related career, how they selected the educational or vocational programs they completed to get there, and their experiences throughout the transition. I designed this case study to explore the following research questions:

1. Why do transitioning military veterans decide to pursue an IT or cybersecurity career field?
2. Why do transitioning military veterans pursue the educational pathways they select for entry into these fields?
3. What are veterans’ experiences during the educational pathway they select?

4. How satisfied are military veterans after completing their transition into these fields?
5. What are veterans' future career goals after completing the entry-level phase within these fields?

Ultimately, throughout this chapter I will present the lessons I learned from this research—from the participants' stories and the advice they conveyed—that can be passed along to future researchers and, most importantly, to future transitioning veterans who may be interested in pursuing a post-military career in the IT workforce.

Key Findings and Summary of Results

As stated in the beginning of Chapter 4, I will reiterate here that an important consideration to bear in mind when reviewing the findings of this study is that all 12 participants had successfully attained their goal of transitioning out of the military and into the IT workforce. All participants volunteered “to offer advice to transitioning military veterans” (see Appendix B), and all 12 indicated they were satisfied or happy with their choice to pursue a career in IT. Therefore, the following findings are based upon examples of 12 successful veterans. The results that emerged in this study are the basis for the following five key findings.

1. Participants in This Study Were Satisfied With Their Decisions to Pursue Careers in the IT Workforce and had Identified Future Career Goals

The first key finding was based upon participants' responses to research questions four and five—questions about how satisfied military veterans are after completing their transition into IT-related career fields and their plans for the future. As stated above, all

12 participants in this study expressed a sense of satisfaction with their decision to enter the IT career field and all of them articulated career goals for the future. Many of the participants were already pursuing additional educational programs or intended to do so. Three themes emerged in participants' responses to these questions: *satisfied with decisions*, *eager to grow*, and *continuing education*. There were no distinctions between any groups (or units of analysis) within the overarching case study regarding these topics.

2. Participants Approached Career Transition From Different Situations, and Those Situations Influenced the Decisions They Made and Pathways They Pursued to Find Success in the IT Workforce

The second key finding was based upon a combination of participants' responses regarding their demographic information as well as their responses in support of research question three, which focused on their experiences during their educational pathway and transition into the IT workforce. When I initially planned this research, I anticipated finding differences between participants' experiences or different outcomes of their transitions into the IT workforce based upon the educational pathway they completed. While those distinctions did not emerge in the data, other differences did emerge that revealed different groups between participants, or embedded units of analysis within the case. The differences that emerged were related to Schlossberg's (2011) 4 S theoretical construct of *situation*. Life circumstances, time spent in the military, type of military service, prior work experiences, and initial experiences upon military separation contributed to these situational categorizations. The four units of analysis within the case were:

1. Active Duty—transitioned directly into an IT pathway. These participants served within the active duty military forces for several years and transitioned from the military directly into an IT pathway. The key differences between this group and the others were that their educational pathway either included an internship or apprenticeship, or that they began their educational pathway during their time in the military, or both. There were four participants in this group.
2. Reserve Forces—gradual transition to IT. These participants served within the reserve military forces for several years and gradually transitioned into an IT pathway while simultaneously working in their full-time civilian capacity. The key differences between this group and the others were that their families were geographically stable during their departure for and return from an overseas deployment, which reduced transition stress on the family and allowed the participants time to gradually identify their desire for areas within the IT workforce, pursue an appropriate educational pathway, and gain entry into a position in the IT field. There were two participants in this group.
3. Active Duty—did something else first before IT career. These participants served within the active duty military forces for several years, initially transitioned into a different career field before realizing their desire to pursue IT, completed an educational intervention, and subsequently entered the IT workforce. The key differences between this group and the others were that the participants initially transitioned from active duty into a different career

field that they found dissatisfying, completed an educational pathway as a sort of intervention, and subsequently entered the IT workforce. There were four participants in this group.

4. Active Duty—retired. These participants served within the active duty military forces throughout their military career, retired from the military, and entered the IT workforce in a supporting role (as instructors or in managerial roles). The key differences between this group and the others were that participants retired, currently work in supporting functions within the IT workforce, and relied upon their professional network during their transition out of the military and into the civilian workforce. There were two participants in this group.

3. There Are Various Reasons Participants Pursued Careers in IT, but They Based Their Career Decisions Upon Autonomous Motivations

The third key finding was based upon responses related to the first research question I explored in this study, which was to identify the influences or motivations that impacted veterans' decisions to pursue a career in an IT-related field. Four themes emerged in the participants' responses to these questions: *I Was the Tech Person*, *Influential Other*, *Personal Interest*, and *Prior Experience*. According to the participants within this study, there are various reasons veterans decided to pursue IT-related careers. Influential people in their lives helped guide some of the participants into the IT field, others had previously developed a personal interest in or aptitude with IT that influenced their decisions, and still others had a more gradual introduction into the field resulting

from related prior experiences. Deci and Ryan (2014) explain that autonomous motivations include interest and enjoyment as well as recognizing personal value and importance in an activity, and autonomously motivated individuals “behave with a full sense of volition, willingness, and choice” (p. 16) as opposed to being controlled. When specifically asked about their experiences regarding the transition assistance educational programs offered by the military services prior to their separation, and whether those programs influenced participants’ transition decisions to pursue IT, two themes emerged—*Employment Preparation* and *Insufficient Time*—however, none of the participants indicated these courses influenced their decisions to enter IT.

4. Participants Closely Considered the Practicality of Their Circumstances When Selecting the Educational Pathway That Enabled Them to Gain Entry Into a Career in IT

The fourth key finding was based upon participants’ reasons for selecting the educational pathway they completed—the second research question I explored. Table 4, in Chapter 4, is organized by the four units of analysis and presents the educational pathway participants completed, the time when they completed them (during their time in the military, or after separation), and a general description of the reasons that guided their decision for selecting a program.

Participants in this study completed various types of educational programs to gain entry into the IT workforce. The participants who transitioned directly from active duty into an IT pathway completed different types of academic programs that included: an online bachelor’s degree completed while still in the military, an in-residence associate’s

degree completed after separation, a Department of Labor-sponsored apprenticeship program completed after separation, and military training courses to gain IT certifications. Practical considerations such as flexibility of online coursework to complete during overseas assignments, geographic proximity to home, and peer recommendations influenced their program selection. Participants from the reserve forces completed an online associate's degree and an in-residence bachelor's degree, and while they were still members of the reserve during their time in school, they were simultaneously working in the civilian workforce. Practical considerations such as flexibility of online coursework due to living in a rural area and following a parent's advice and example influenced their program selection. Participants from the active duty who retired group worked in supporting roles within the IT workforce. One of them completed an instructor training course, and the other an IT certification exam (along with previously earning a relevant master's degree). Both of these participants completed their programs because they were specifically required to be qualified for their jobs.

In only one of the groups—the active duty participants who tried working in a different career field before transitioning into an IT pathway—was there a consistent theme regarding the type of program pursued. These participants were all dissatisfied with their initial vocational choices and completed an educational intervention to help them pursue their passion or find a renewed sense of purpose in the IT workforce. Three of the participants in that group completed an IT certification program sponsored by the VA or a nonprofit agency, and one completed an online associate's degree. Practical considerations such as flexibility of online coursework due to working full-time with

parental responsibilities and heeding recommendations from veteran service organization advisors influenced their program selection.

5. Participants Attributed Part of Their Success for Completing Their Educational Pathway and Transitioning Into the IT Workforce on Personal Traits, Helpful Strategies, and External Support

The fifth key finding was based upon responses related to the third research question I explored in this study, which was focused on participants' experiences during their educational pathway. When participants were specifically asked about things that contributed to their success, Schlossberg's (2011) 4 S theoretical construct of transition resources—situation, self, support, and strategies—offered a useful framework.

Addressed in point number two above, one of the key findings of this study was directly associated with the *situation* within which veterans approached their transition into an IT educational pathway and transition into IT.

However, participants also discussed how personal traits or mindsets (*self*), *strategies* they applied, and *support* they received assisted them throughout their transitions. During these discussions, two themes emerged related to their personal traits, perspectives, or mindset. While the transitions were not easy for any of the participants, most of them attributed at least part of their success to a personal *drive* or self-determination, or the result of pursuing an *intellectual curiosity*. In addition, participants also described helpful strategies they employed that contributed to their success. The three themes that emerged related to strategies were *online tools*, *relying on peers*, and *time management*. Lastly, participants also described the types of support they received

that contributed to their success. All of the participants discussed some type of support they received during their educational program and transition into the IT career field, which were organized into three themes: *financial assistance*, *family support*, and *academic and career counselling*.

Implications and Discussion

With an overview of the results and findings of this study complete, next, I will discuss the implications of these findings and the ways that these results may be useful to future transitioning veterans. I will discuss how the lessons I learned from the participants' stories, the examples they have set, and the advice they conveyed may be applicable to other veterans who aspire to pursue a career in IT after their time in the military. While this is a qualitative study and generalizations cannot be inferred across populations, as presented in Chapter 3, Yin's (2018) definition of *analytic generalization*, where qualitative findings "can apply to situations beyond the original case study, based on the relevance of similar theoretical concepts or principles" (p. 286), does apply in this case. I will also discuss how the results and findings contribute to existing literature on veterans' transition to higher education and the workforce where applicable. The implications of this research and lessons learned from the findings are organized in the categories of *Career Assessment and Counseling*, *Considerations for Pathway Selection*, and *Elements of Success*.

Career Assessment and Counseling

When you engage in work that taps your talent and fuels your passion—that rises out of a great need in the world that you feel drawn by conscience to meet—therein lies your voice, your calling, your soul's code.

—Stephen Covey, *The 8th Habit* (2004, p. 8)

Based upon participants' overwhelmingly positive responses in this study pertaining to *career satisfaction*, it would seem that future transitioning veterans may wish to automatically consider a career in IT—and they should. That is, however, only after first heeding the advice that the participants provided about fully considering an IT career: Take steps to determine levels of interest, then attain entry-level IT certifications if interested, and ultimately consider pursuing formal degree programs.

While previous research studies have analyzed variables pertaining to veterans' overall *life satisfaction* after transition into the civilian workforce from a quantitative perspective (Castro & Kintzle, 2017; Robertson & Brott, 2014), the qualitative data collected in the present study does not lend itself to the same types of comparison and correlation. Although, regardless of the research methods employed, none of the previous studies found consistently positive results regarding veterans' levels of career or life satisfaction after transition. Robertson and Brott (2014) identified “*satisfied to average*” (p. 143) levels of life satisfaction, and Castro and Kintzle (2017) identified “low to moderate” (p. 19) levels of life satisfaction among veterans. Further, Ahern et al. (2015) revealed that some veterans felt a “loss of purpose” (p. 6) upon return to civilian life, and Zoli et al. (2015) found that 46% of veterans “had difficulty establishing a sense of purpose, value, or meaning in post service life” (p. 30). Lastly, Mobbs and Bonanno (2018) suggest that after transition, “veterans may experience grief-like symptoms in response to the perceived loss of their military self (even if done voluntarily) and the roles, values, and sense of purpose [the military] lifestyle may have held for them” (p. 139).

Alternatively, all of the participants in this study described a sense of satisfaction with their decision to pursue IT. Although, as noted earlier, participation in this study was limited to individuals who had already successfully transitioned into the IT workforce, and were volunteering to offer advice to other veterans, so it comes as no surprise that all 12 participants indicated a sense of satisfaction with their decision to enter an IT career field. Thus, even though the former studies did not focus specifically on veterans in the IT workforce, the findings of this study regarding career satisfaction are not consistent with previous veteran-focused research.

Despite the indication that the findings of previous veteran-focused studies may not be comparable here, the theoretical foundation established in previous research does offer a useful conceptual framework for describing common attributes associated with veterans' *career satisfaction* after transition. Specifically, Castro and Kintzle (2017) explain that their notion of *Assessing the Transition*,

describes outcomes associated with transition. These outcomes are measured through the categories of work, family, health, general well-being and community. More specifically, these include whether the transitioning service member secured adequate employment, the re-acclimation to family life and adjustment to new family roles, physical and psychological health, adaption of new social networks and engagement in the community. Outcomes are interconnected as they impact one another. For example, challenges to physical health may create challenges in finding employment. However, success or failure in one outcome does not indicate success or failure in overall transition. (p. 13)

During the semi-structured interviews with participants, while I asked questions about participants' satisfaction with their decision and how they feel about their current situations, I did not provide a definition of what satisfaction meant. Participants responded in several ways, but one of the participants in the Active Duty group offered a comprehensive summary that was representative of other participants' perspectives:

When I got out [and] into this field, into IT, [it] has been a blessing in disguise. I think because one, it proves that I can get out...as a guy told me, like, "how are you going to retire?" Or, "how are you going to be able to afford to your life if you go? Stay in!" And I got out at 13 years and I'm actually making more right now, even without my bachelor's degree. But in general, I am making more right now than I was when I was in the military. My life is a lot less stressful. Now, mind you, I'm going to school and working at the time, that's a little stress there, but at the same time, I'm not having to worry about being under the ocean, no communication, not even being able to see or hear my wife. Now at least like, okay, I might miss my wife because she's asleep and I only get to kiss her on the forehead, but I still see her. I'm still here with my son and if anything's going on, he can call and I can actually pick up the phone and say, "hey, okay." Yeah, when I was in the military, I didn't have that option. And I'm so happy where I'm at right now career wise, I think it's only up from here. At least the steps I'm taking. And because of this field, because [the] IT field is a growing field. I feel like it's going to be going up for a while. Like I'm not in a declining field or a field that might be replaced or anything like that. I'm in a field that just is going to keep going in the positive direction. (ACDU)

As this participant's response included aspects of work, family, and general well-being in his description of *satisfaction*, again, he offered a summary of the types of responses offered by the others.

Ultimately, the differences in the results of this study compared to previous veteran-focused research beg the questions: Are the consistently positive responses found within this study solely a result of the recruiting methods and participation criteria, or do IT-related careers help facilitate positive perspectives regarding work, family, health, general well-being and community? Or, perhaps, do the participants in this study feel

satisfied with their decisions because they previously identified their passion (some sooner than others), and subsequently pursued a career that aligned—which happened to be IT in this case? I will address these two questions next.

First, when looking outside the veteran-specific research, but focusing on research pertaining to career or job satisfaction in the United States overall, the findings are mixed but lean towards the positive side. In 2017, the Society for Human Resource Management (SHRM) conducted a nationwide survey study entitled, *Employee Job Satisfaction and Engagement: The Doors of Opportunity Are Open*. SHRM (2017) found that 38% of participants responded that they were “very satisfied” with their careers, and an additional 51% responded that they were “satisfied but to a lesser degree” (p. 1). According to the SHRM study, the greatest contributors to job satisfaction were “respectful treatment of all employees at all levels, compensation/pay, trust between employees and senior management, job security, and opportunities to use their skills at work” (p. 1). While these factors did not emerge as themes in this present study, the findings that infer most Americans are at least partially satisfied with their jobs were similar. However, the University of Southern California’s Applied Psychology Program, in the Dornsife College of Letters, Arts and Sciences (USC, n.d.) maintains a narrative and infographic on their website that aggregates the results of numerous nationwide longitudinal surveys dating back to 2005. Their reports of survey data found that since 2005, over half of Americans consistently report not being satisfied with their work. (USC, n.d.). While the top factors contributing to satisfaction in their research were similar to those of the SHRM study, the top three variables contributing to employee

burnout were job security, personal pressure, and manager pressure. More recently, Levanon et al. (2021) presented results from the *Consumer Confidence Survey*, collected by The Nielsen Corporation, which states,

In 2020, overall job satisfaction remained historically high. Despite the pandemic, economic crisis, mass layoffs, and the increase in the unemployment rate, job satisfaction climbed from its lowest ever rate of 42.6 percent recorded in 2010 to 56.9 percent—the highest in 20 years. (p. 2)

Similarly, in 2021, a nationwide Gallup Poll *Work and Workplace*, found 48% of respondents were “completely satisfied” with their job and 39% were “somewhat satisfied” (Gallup, 2022). While on average, survey research indicates that levels of at least some career satisfaction within the US tend to be high, the findings are a bit inconsistent.

Alternatively, when specifically considering career satisfaction within the IT workforce, the data seem to be more reliable. According to the Global Knowledge (2017) *2017 IT Skills and Salary Report*, which reported the results of surveys collected globally, including approximately 4,800 respondents within the United States, 46% of IT professionals report being “satisfied” and an additional 41% report being “somewhat satisfied” with their jobs. Similarly, in the following year, the Global Knowledge (2018) *2018 IT Skills and Salary Report* reported the results of survey data collected globally, which included approximately 6,300 IT professionals in the United States. The results were identical—46% of IT professionals report being “satisfied” and an additional 41% report being “somewhat satisfied” with their jobs. In a related meta-analysis, Statista

(2022) aggregated and presented the results of several nationwide surveys, and the results indicated that employees who work for IT companies, compared to employees in other types of companies, are the most satisfied with their employer and most likely to recommend their company to friends and family. While the Statista report does not focus on individuals working in IT career fields, the logical assertion that IT companies are primarily comprised of employees working in IT careers is relevant in this discussion. Yet, the IT workforce does face challenges as well; work exhaustion and burnout do contribute to employee dissatisfaction (Moro et al., 2019). Overall, the results of these studies indicate that professionals in the IT workforce do seem satisfied with their careers. Thus, in the present study, participants' consistently positive responses about satisfaction are similar to others in the IT workforce.

Nevertheless, even though the IT field appears to provide a sense of satisfaction to most employees, the second question posed above—and what I believe to be one of the primary lessons to learn from this case study—is still worthy of discussion. Career interest exploration, analysis, and self-assessment are also likely reasons why participants in this study found satisfaction in their post-military IT career.

In response to my first research question and as presented in finding number three above, all of the participants in this study had some sort of influential reason that helped guide them into their respective IT career pathway. While the four themes of *I Was the Tech Person*, *Influential Other*, *Personal Interest*, and *Prior Experience* emerged in this study, three of these primary reasons for participants' decisions to pursue careers in IT were attributed to internal self-reflection or realization. In only one theme, *influential*

other, did participants describe primarily following other trustworthy individuals' advice about considering their career choice. Even the participants who were initially dissatisfied when they tried different careers realized their desire to pursue an IT career as a result of experiences. For example, one participant who tried a different career first explained,

Now, before that I'd already been helping my family, my parents and stuff, when they're like "oh, how do I know what computer to buy? And how do I know what phone to buy? Why is my phone doing this? And why is my phone doing that?" So, I'd been helping them with that, but I just thought it was because they weren't as knowledgeable as the younger generation. But at that particular job I'd noticed even people my age just didn't know how to use computers in the way that I thought was normal. So that's kind of what made me realize that maybe I had a knack for IT. And so, I started researching trying to figure out how to get into IT and what direction to go. (DSEF)

Perhaps this participant could have saved years of time and frustration had they experienced a more deliberate career exploration self-assessment prior to separating from the military. Furthermore, the first recommendation participants offered to future transitioning veterans—to take steps to determine their interest in IT—directly aligns with this notion. As another participant who tried a different career first advised future transitioning veterans,

I would essentially just, if you can, even just frolic at a computer, or just play around, watch some YouTube videos. Also, talk to other people that are in the IT field in the Army, or whatever branch they're in and really dig at them. If I had the opportunity to do so back then, I think I would've had a leg up, 10 years ago almost. (DSEF)

Again, according to participants of this study, a more deliberate career interest exploration prior to separation would be beneficial.

While many veterans most likely try to evaluate careers for several months, or years, leading up to their transition, that is not the case for all. For veterans who approach

transition without a deliberate plan, more formalized career interest assessment and career counseling are critical steps they should consider before taking additional preparatory actions towards their separation from the military. Brown and Lent (2013) explain that career counseling refers to

services offered to ameliorate or prevent problems with work behavior, regardless of the prestige or level of education associated with a given work option....

Career counseling typically takes place between an individual client and counselor, though many career counselors also employ group counseling or workshops, particularly in educational settings in which a number of clients are dealing with common developmental challenges (e.g., academic or career-related choices). Career counseling can be directed at a fairly wide range of client presenting problems, but these may largely be captured within three larger categories: (pp. 10-11)

Help in making and implementing career-related decisions. (p. 11)

Help in adjusting to work and managing one's career. (p. 12)

Help in negotiating career transitions and work-life balance. (p. 12)

Career interest assessments are one of several components of career counseling and are helpful when “individuals who must make career and educational choices are undecided. For these [individuals], the scores on interest inventories can serve as powerful stimuli to jump-start the exploration process and develop career ideas and possibilities” (Hansen, 2013, p. 394).

Fortunately, as discussed in Chapter 2, the Departments of Labor (DOL) and Defense (DOD), along with the military services, do provide a transition assistance program (TAP) course for veterans. In fact, as a result of recent legislation, the DOD's Military-Civilian Transition Office published an updated version of TAP curriculum on a new online learning management system in the September 2020 timeframe (Defense Visual Information Distribution Service, 2020) that can be accessed from the website: <https://tapevents.mil/>. When asked about their experiences in TAP, participants discussed some benefits of the courses, but none of them felt the TAP course helped guide them to pursue a particular career interest. A second lesson to learn from this case study is that transitioning veterans could possibly benefit from a more deliberate and comprehensive battery of personality and career interest assessments during the TAP process. The DOD and DOL may wish to consider analyzing the current level of self-assessment provided during TAP courses and, if warranted, consider investing more resources to develop a scalable model of individualized career counseling and assessment to help veterans identify post-military interests and ambitions. Interestingly, when reviewing the Department of Labor's portion of the online TAP curriculum currently offered to veterans (DOL, n.d.), these types of career interest assessments appear to already be included and should be part of veterans' transition experience. However, if accounts such as the ones presented by the participants in this study persist, then the course providers may want to consider analyzing the implementation of TAP policies regarding career assessment.

Ultimately, veterans should take as much time as possible and research as many ways as possible to explore their own capabilities and interests, as well as the

qualifications for and qualities of participants in various career fields, to help them identify a post-military career where they will find career and life satisfaction. Other practical considerations such as compensation and geographic location should also contribute to veterans' planning and decision making. When offering advice about job satisfaction, counseling psychologist and life coach Dr. Joshua Bourne (2022) explains,

determining whether you are satisfied with your job, whether it is right for you, and why that is important often involves personal intuition and circumstances. For some people, the right job might entail earning a certain salary. For others, the right job might involve having a supportive team. (para. 3)

Planning and preparation for a successful career transition are essential; however, as several participants in this study demonstrated, if veterans do start a career path they find dissatisfying, that does not need to be the end of their transition. With additional planning and educational interventions, it is possible to change course. As Schlossberg's model affirms, career transitions take time and they are an ever-evolving cycle of change (Anderson et al., 2012).

Considerations for Pathway Selection

The second category of lessons to take away from this study is related to consideration veterans may wish to consider if selecting an IT-related pathway. As indicated in research questions one and two, when designing this study, I intended to identify the reasons why veterans decided to pursue careers in IT separately from the reasons why they selected their educational pathway. While the responses to these two questions were not always distinct, two overarching findings did emerge based upon

participants' responses. First, these successful veterans based their decisions to pursue their overarching goal of working in an IT-related career on internally or value-based motivations; however, when selecting an educational pathway to attain that goal, they deliberately considered the practicality of their circumstances. These circumstances were largely based upon the situation within which they found themselves when pursuing their goals. As described in the second finding above, distinctions emerged between the four groups, but the lessons that can be learned from the individual groups are relevant for all veterans to consider leading up to a transition out of the military. The four lessons to take away from these participants' stories that may assist veterans during transitions into an IT career field are as follows.

1. Minimize Turbulence During Transitions to the Greatest Extent Possible.

When servicemembers belong to the reserve or National Guard components of the U.S. military, they are often assigned to units based upon the geographical location where they reside and have the opportunity to simultaneously participate in a parallel civilian career. They serve in their military roles in short, part-time increments until periods of activation, when they can deploy alongside the active duty forces for longer durations. As a result of their geographically based assignment, servicemembers' families could potentially remain in place throughout the entirety of an individual's military career. When members of the reserve forces transition out of the military, the stresses placed upon families resulting from geographic relocation may be reduced or eliminated altogether.

Schlossberg (2011) explains that stresses that emanate from transitions are not necessarily a result of the transition itself, but rather “how much it alters one’s roles, relationships, routines, and assumptions [of daily life]” (p. 159). Therefore, while it in no way implies that transitions out of the military are easier for members of the reserve forces or their families, the ability to remove one potentially significant source of transition stress serves as a salient point for all veterans to consider when approaching transitions out of the military. While veterans have to balance many considerations when planning their transition, and they may not have the option to keep their family in the same geographic location, the lesson to consider here is to intentionally try to minimize the turbulence during transition wherever possible when departing the military. Stabilizing the individual’s and family’s roles, relationships, routines, and assumptions as much as possible—whether it be in geographic location, job roles and functions, personal relationships, levels of responsibility, or elsewhere—may help facilitate a smoother transition overall.

2. Consider Bootcamps or Other Financially Sponsored Educational Interventions for More Immediate Transition Assistance. As presented in Table 4, while participants from several of the embedded units of analysis attained IT certifications to gain entry into their respective job in the IT workforce, the group of veterans who “did something else first” demonstrated a trend of completing bootcamp-style IT certification programs to help them quickly transition out of their existing career and into an IT-focused pathway. The particular programs these veterans completed were fully funded and sponsored by either the VA, or a nonprofit association (CompTIA in this

case). Even though the participants in this study completed these bootcamp-style programs several years after they separated from the military, that does not have to be the case for future transitioning veterans. If veterans have thoroughly explored their interest in pursuing an IT career, and determined it would be a good fit for them, they could use their time during transition “leave” (saved vacation days) to attend similar programs while they are technically still in the military.

As discussed in Chapter 1, Meristosis (2016) reiterates that “today’s job-seekers can possess not just four-year college degrees but everything from associate’s degrees and apprenticeships to occupational licenses and education certificates, all the way to digital badges and employer-based certifications” (p. 28). IT certifications provide well-established benefits for both employees within the IT workforce as well as the organizations that employ them, and for some jobs, IT certifications are the singular educational requirement for qualification (Global Knowledge, 2021). Further, in comparison with traditional college degree programs, IT or coding “bootcamps” may offer a fast-track to educational attainment; however, not all programs are equally effective—bootcamps’ purpose and quality can vary widely. Veterans who wish to consider an IT bootcamp must carefully and extensively research the programs before making a selection.

Fortunately, organizations do exist to help veterans select a reputable and beneficial program. Primarily, the Department of Veterans Affairs’ website offers extensive information about the GI Bill and the VET TEC program educational providers (see Table 5 for URL). Even if veterans are not presently eligible to use GI Bill benefits,

selecting educational programs that do accept VA benefits is one assured way to know that the program has been vetted for quality. In addition, the nonprofit association Council on Integrity in Results Reporting (www.cirr.org) is comprised of bootcamp service providers and other stakeholders who are committed to transparency and standardized reporting. Furthermore, while not associated with or vetted by the VA, companies such as Course Report (www.coursereport.com) and Career Karma (www.careerkarma.com) provide annual industry research reports and “matching” services to help interested students try to narrow the expansive number of bootcamp offerings. On the Course Report website, Eggleston (2022) even provides an updated list of bootcamp providers who accept the GI Bill. However, the Department of Veterans Affairs also provides a database of approved GI Bill providers at the following website: <https://www.va.gov/education/gi-bill-comparison-tool/>. Again, regardless of the source of information, veterans must research programs thoroughly to ensure the quality and educational outcomes will meet their intended goals, timeline, and budget.

3. Ensure Degree Programs Include Practical Application Such as Internships or Apprenticeships. When focusing specifically on the active duty group who transitioned directly into an IT pathway, several of the participants completed an internship or apprenticeship program, and all of those participants stated that educational experience directly led to their first job in the IT workforce. In these examples, the internships were requirements of the participants’ associate’s and bachelor’s degree programs and the apprentice program was a Department of Labor-sponsored initiative, facilitated by the third-party service provider Apprenti (www.apprenticareers.org). Any

veteran who does not already have experience working in the IT workforce, but wishes to pursue a college degree in IT, should ensure their academic program includes an internship, or they should consider an apprenticeship program if they are not ready or do not have sufficient time for a traditional college degree.

While internships and apprenticeships share several experiential learning characteristics, they are not the same. Galvin (2018) simplistically explains that the difference between the two is that “an apprenticeship is work-based training while an internship is work-based learning” (para. 2). Wang et al. (2020) elaborate that

Apprenticeships and internships are among the most valuable industry-sponsored learning and career opportunities for cybersecurity students. Both provide students with real world experience for students to learn technical and non-technical professional [knowledge, skills, and abilities] that are included in all tiers of competencies. Cybersecurity apprenticeships are special industry–academia partnerships that allow students [to] earn while they learn and receive training on the job to transition to a full-time career.... Internships are temporary paid or unpaid experiential learning opportunities which have no full-time position commitment. (p. 13)

The US Department of Labor (DOL, 2020) further describes apprenticeships as “an industry-driven, high-quality career pathway where employers can develop and prepare their future workforce, and individuals can obtain paid work experience, classroom instruction, and a nationally-recognized, portable credential” (p. 1). The five key components that differentiate apprenticeships from other educational programs are the

combination of: paid jobs, work-based learning, mentorship, classroom learning, and credentialing (DOL, 2020). Whereas,

An internship is a form of experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting. Internships give students the opportunity to gain valuable applied experience and make connections in professional fields they are considering for career paths; and give employers the opportunity to guide and evaluate talent. (National Association of Colleges and Employers, 2018)

Thus, while there are similarities, internships are typically a component of a college degree program and an apprenticeship can be a stand-alone program, funded by various different sources, but these terms are at times used interchangeably.

When reviewing the higher education literature regarding apprenticeships, the databases are replete with articles focusing on apprenticeship programs in European nations and other international programs; however, few articles address apprenticeships in the United States. Although, within the last decade, US education policymakers have called for a renewed emphasis on incorporating apprenticeships into traditional postsecondary offerings (Jones, 2011). Furthermore, in February 2021, the House of Representatives passed the National Apprenticeship Act of 2021 to establish the Office of Apprenticeship within the Department of Labor in an effort to improve apprenticeship programs within the US post-secondary educational process (H.R. Resolution 477, 2021). However, presently, the bill has yet to become law.

Nevertheless, the Department of Defense has embraced the value of apprenticeships and has recently implemented a program that permits transitioning servicemembers to complete on-the-job training in a new civilian career while still in the military.

The DOD SkillBridge program is an opportunity for Service members to gain valuable civilian work experience through specific industry training, apprenticeships, or internships during the last 180 days of service. SkillBridge connects Service members with industry partners in real-world job experiences. (DOD, 2022)

Thus, while transitioning servicemembers would need to coordinate directly with their respective academic institution to research and coordinate internships, a mechanism now exists to help facilitate apprenticeship programs. Transitioning servicemembers can learn more about the Skillbridge program and explore approved apprenticeship providers at the program website: <https://skillbridge.osd.mil/>.

4. Engage Professional Networks to Learn About Opportunities and Get Introductions to Organizations. The final lesson that emerged from the results of this research regarding pathway selection was most prominently articulated by the participants who had served in the military the longest and retired from the active duty forces, which was that veterans should engage with their professional (and personal) networks when exploring career options and should not be afraid to ask for help. The retired veterans relied directly upon colleagues from their professional network to gain assistance with job placement during or after their transition out of the military. However,

the colleagues who assisted were not new acquaintances; they were longstanding professional, and arguably personal colleagues. Other participants in the study, from other groups, also described finding employment that stemmed from professional relationships, but those relationships were not as longstanding as the ones described by the retirees. One of the participants from the reserve group was asked by a friend, who was also a recruiter, if he would be interested in a new position. A participant from the active duty who transitioned directly into IT group explained how a colleague from his TAP class introduced him to the apprenticeship program he pursued. And one of the participants who tried a different career first was introduced to a recruiter for his future employer at a networking event (or job fair).

All of these examples reinforce the message that is often conveyed to veterans in career transition seminars: the majority of job offers result from professional relationships, contacts, or networking (Kirchner & Yelich Biniecki, 2019; Teller, 2017). However, because of the close professional bonds typically inherent within military culture, veterans do not always clearly understand or feel comfortable with the process of professional networking in the civilian workforce context (Kirchner & Yelich Biniecki, 2019). When student veterans at a large southeastern university participated in a research study to identify career-related topics about which they wanted to learn, Hayden et al. (2014) identified that almost half (43%) selected “Networking Effectively” (p. 133). Teller (2017) explains that “*Networking* represents proactive attempts by individuals to develop and maintain personal and professional relationships with others for the purpose of mutual benefit in their work or career” (pp. 417-418), and that it is a skill that can and

should be taught to students in business school curriculum. While transitioning veterans should definitely try to learn about and employ professional networking throughout their transition, I believe there is an equally salient point to learn from the retiree participants in this study. The longstanding relationships cultivated throughout years of military service do not fade after transition into the civilian workforce. Most veterans are interested and more than willing to help one another—if they are able and if they are aware of an individual's need.

Elements of Success

The third and final category of lessons that can be learned from the participants in this research study are related to research question number three—things they felt contributed to their success throughout their transition experience. The questions I asked to prompt these discussions were aligned with the factors of Schlossberg's *Theory of Adults in Transition* that influence an individual's ability to cope during transition: situation, self, strategies, and support (Anderson et al., 2012; Rullo & Madia, 2014; Schlossberg, 2011). As such, I will address the lessons learned from the participants' responses accordingly.

Self. In Schlossberg's theory, *self* relates to an individual's basic demographics, such as gender, age, ethnicity, health, and socioeconomic status; however, it also pertains to psychological characteristics, such as an individual's inner-strength, overall outlook on life, and level of optimism (Anderson et al., 2012). Similarly, Deci and Ryan's (2014) Self-Determination Theory (SDT) explains there are three evolved psychological needs—the needs for competence, autonomy, and relatedness—"which are considered universal

necessities for wellness” (p. 16). Further, SDT assumes humans are “inherently oriented toward mastering the environment and assimilating experiences into a unified set of inner processes and structures, referred to as *self*, that promotes autonomous motivation and behavior” (p. 16). They further explain that

when people experience satisfaction of the basic psychological needs, they are more *autonomously motivated*, which means that they behave with a full sense of volition, willingness, and choice.... [And] autonomous motivation comprises both intrinsic motivation, which means doing an activity out of interest and enjoyment, and fully internalized extrinsic motivation, which means doing the activity volitionally because of its personal value and importance. (p. 16)

When participants in this study described their experiences during their transitions, through their educational pathway and into the IT workforce, the two themes of *driven* and *intellectual curiosity* that emerged directly align with the theoretical concepts of *self* that contribute to successful transitions. For example, the following two excerpts—one from the active duty to IT group and another from the did something else first group—represent the perspectives of the participants who contributed to these themes:

I think intelligence is relative, right? And at the end of the day, I think perseverance and tenacity are huge indicators of success. So, I think just because someone is, someone could be hugely articulate, but if they don't have drive or passion, I mean, they may not last. And so, I've seen a lot of really smart people give up over people who are less intelligent but because they had the drive.... I was working 60, 70 hours a week in my former life as an accountant. I hated every minute of it. Whereas now, I may be working 60 to 70 hours a week, but I love talking about what I do. I can talk about cloud virtualization all day if I was given a chance. (ACDU)

I feel like.... Well, with most things, I personally believe that you have, you get out of something what you put into it, right? If you go into it thinking, “hey, I’m just going to breeze by, just pick up the bare minimum” and you’re not very interested in it or have the intellectual curiosity to explore things and look into things on your own or just interested in the field in general, you’re going to struggle. There were a lot of guys who just start to, “hey, this is going to be some sort of silver bullet—I do this and now I’m just marketable” and it is...in some sense, but you actually have to, if you’re not interested in something, [if] you don’t put effort into it, you’re not going to succeed at it. There were some people who I think had a big wakeup call with that one. (DSEF)

The message being conveyed by these participants is the underlying reason for needing intentional career assessment and counseling described above. The lesson that future transitioning veterans should take away from this discussion is that, however possible, veterans should find the time and resources that can help them fully explore themselves—their goals and interests—at the earliest stage of their transition planning. While circumstances and external influences will undoubtedly affect their ultimate career opportunities, having a strategic orientation towards a career field that will provide interest, passion, and personal satisfaction may save time and long-term career frustration after transition.

Strategies. From Schlossberg’s (2011) perspective, strategies are tools individuals can use to help alleviate stress throughout the turbulent periods of a transition cycle. “There is no single magical coping strategy. Rather, the person who flexibly uses lots of strategies will be better able to cope [with transition]” (p. 161). Schlossberg’s concept of coping strategies includes actions that individuals take to try to change their situation, reframe their situation, or help to reduce stress overall. While the strategies articulated by participants in this study do generally align with Schlossberg’s perspective—namely changing the situation—the themes of *online tools, relying on*

peers, and *time management* that emerged were more specifically relevant to a discussion of academic study skills or learning strategies.

Previous research that focuses on veterans in higher education does indicate a need for relearning study skills or learning strategies (DiRamio et al., 2008); however, the results of those studies tend to focus on the way institutions can help or the ways student veterans can use campus resources for information seeking—namely, the use of student veteran offices on campus (Griffin & Gilbert, 2015; Jones, 2017). Previous studies have not specifically focused on the learning strategies or study skills that veterans employed during their transition. Although, perhaps more relevant in this discussion, when reviewing research-based websites for university academic support centers, the themes identified in this study regarding learning strategies do align with recommendations for successful academic performance of all students, not solely veterans. For example, to “become a teacher” in a study group (University of North Carolina, 2022) is a commonly recommended strategy that aligns with *relying on peers*, and “one of the biggest factors for determining academic achievement is time management” (Kansas State University, 2020) aligns with *time management*. Furthermore, when reviewing websites that specifically focus on academic success strategies in computer science, recommendations such as “don’t expect to learn everything during courses...[and] focus on developing...practical computer science skills” (Studyportals, 2022) aligns with participants’ application of *online tools*.

Ultimately, the lesson future transitioning veterans can take away from these themes regarding *strategies* is that study strategies do exist to help them succeed in their

educational pursuits. Along with the TAP courses, most educational institutions will likely offer their own advice to help students succeed, but if not, the internet is replete with websites for campus learning centers. Further, in addition to the IT-specific learning resources used by participants in this study provided in Table 5, some universities offer online courses to help student veterans prepare to return to academic environments. For example, Columbia University in New York offers a free, 12-week, online edX course entitled University Studies for Student Veterans that focuses on preparing student veterans for academic success in college and offers to provide an “academic tune-up” (edX, 2022, About this course).

Support. The final element of success according to Schlossberg’s (2011) theory that I will address in this section deals with the *support* participants received throughout their transitions out of the military and into the IT workforce. When discussing support, participants’ responses revealed the themes of *financial assistance*, *family support*, and *academic and career counselors*. These themes aligned with previous research that focused on student veterans’ transition to higher education. Anderson et al. (2012) explain that support during transitions may include family, friends, colleagues, supervisors, professional networks or organizations, cultural support, in addition to career or industry-specific support. DiRamio and Jarvis (2011) add that support in higher education can come from non-role-dependent sources, such as family and friends, as well as role-dependent sources such as institutional support or a “student veteran organization” (p. 15).

In fact, much of the previous research regarding veterans' transition into higher education focuses on elements of support—particularly institutional support on college campuses. While Griffin and Gilbert (2015) found that veterans' needs for and interests in support vary widely, the need for counseling support such as an “institutional point person to coordinate services” (p. 91) is a common theme. DiRamio et al. (2008) agree that there is a need for a *transition coach* to help veterans deal with the administrative and emotional struggles student veterans may encounter. Jones (2017) also found that students' family members provided significant support during transitions; however, Jones' primary recommendation was for institutions to ensure they provided veteran-specific counseling and advising on campus. While Zoli et al. (2015) identified financial troubles as one of veterans' top challenges during transition, this current study's successfully transitioned participants found ways to mitigate financial challenges. In addition to the GI Bill, the participants also described other sources of financial support, such as part-time or full-time jobs, federal loans, sponsored academic programs, and employer tuition assistance.

The lesson that future transitioning veterans can learn from this discussion about support is that they are not alone. Whether it be in TAP courses, through the VA, from family, or fellow veterans, reach out to every source of support possible. As one of the participants advised,

Don't be afraid to reach out and talk to mentors and advisors first because they, everybody has apprehensions and has concerns before they start a program. Don't feel like you have to be quiet about that. You can always, there's always people, you can go talk to—don't keep those things to yourself. You have concerns about, whether it's workload or personal concerns or family concerns, anything else. I mean, you can always bring that up and get advice from people

who have seen this before and seen other students go through it before. So, I would say, just speak up. Don't be afraid to talk and ask for help for people going through that transition. (RES)

Along with finding an intriguing and purposeful pathway that generates drive and curiosity, and embracing effective learning strategies, identifying and using available sources of support are some of the elements that participants in this study attributed to their success.

Overall, by applying Yin's (2018) concept of analytic generalization, in this section I explained the implications of this research that were based upon the results and findings. I also discussed lessons that future transitioning veterans may wish to consider before navigating their own transition—in the categories of *Career Assessment and Counseling*, *Considerations for Pathway Selection*, and *Elements of Success*. Next, I will conclude this dissertation with a brief discussion regarding the limitations of the study and recommendations for future research.

Limitations

There are two areas to consider as limitations of this study. First, as with any qualitative study, the generalizability of this case study is limited to the participants within the study and the parameters, or operational considerations, specifically addressed by the research questions. As discussed previously, generalizations have not been claimed outside of the immediate sample, except in the situations above where Yin's (2018) concept of analytic generalizations applies based upon similar theoretical concepts or principles. However, in those situations, the generalizations are framed as examples or lessons learned from this research which other transitioning veterans may wish to

consider before embarking upon their own transition out of the military. Second, another point previously discussed was the fact that, by design, all of the participants in this study had already successfully transitioned into the IT workforce and volunteered to offer advice to future transitioning veterans. While participants offered critiques and recommendations regarding their transition in many ways, their perspectives about the IT career field were favorable and they all reported being satisfied with their decisions to arrive there.

Recommendations

The findings and implications of this research can be used to advise future transitioning veterans and to inform related research regarding veterans' transition out of the military. This study can specifically serve as a foundation for additional research regarding veterans' transition into IT-related educational pathways and the IT workforce in the US.

I believe this dissertation has introduced numerous additional questions related to this topic that can be explored in future research studies. Primarily, future researchers may wish to consider thoroughly investigating career interest assessments that would be particularly relevant for military populations and serve as primers for veterans' career transition processes. Next, additional research is warranted to determine the specific reasons why these participants unanimously found the IT career field to be satisfying and why many in the field feel the same way. Perhaps there are similar characteristics between military service and the IT career field or other reasons that could help transitioning veterans realize they may find satisfaction in IT careers, and simultaneously

help the personnel shortage in the IT workforce. Finally, researchers may wish to more closely examine the perspectives of transitioning veterans within the individual units of analysis identified herein to better address specific benefits and challenges experienced by the various groups, as well as explore the perspectives of veterans who attempted, but did not succeed, in transitioning into the IT workforce after their time in the service.

Conclusion

In this chapter, I summarized the results of this research and articulated the key findings. I then discussed the implications of these findings as lessons that future transitioning veterans may wish to consider prior to their own separation from the military. I also addressed the limitations of this study and offered recommendations for future researchers and for counseling practitioners who focus on veterans' transition-related topics.

Every year, the Department of Defense invests considerably in the transition of American citizens into the military and, similarly, assists the Department of Veterans Affairs in veterans' transition back into American society once service obligations are complete. In addition to the DOD and VA, many state-level governmental organizations, non-profit groups of various sizes, corporate industry partners, and academic institutions also assist veterans to integrate back into civilian society. However, the topic of veterans' transition into higher education and the workforce still warrants attention, and while researchers at individual and organizational levels have focused resources on investigating the nuanced aspects of veterans' post-service transitions, there is still much to learn. This dissertation focused on one specific case: the transition of veterans into the

information technology workforce. My hope is that the findings and implications of this study can assist future transitioning veterans, as well as to serve as a foundation for future related research. There is still much to learn about veterans' transition into not only this specific industry, but also other industries as well.

Appendix A

Institutional Review Board (IRB) Approval Letter



Office of Research Integrity and Assurance

Research Hall, 4400 University Drive, MS 6D5, Fairfax, Virginia 22030
Phone: 703-993-5445; Fax: 703-993-9590

DATE: January 29, 2021

TO: P. Daniel Chen, PhD
FROM: George Mason University IRB

Project Title: [1690705-1] Educational Pathways for Military Veterans Transitioning Into Information Technology and Cybersecurity Related Career Fields

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: January 29, 2021

REVIEW CATEGORY: Exemption category #2

Thank you for your submission of New Project materials for this project. The Institutional Review Board (IRB) Office has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

You are required to follow the George Mason University Covid-19 research continuity of operations guidance. You may not begin or resume any face-to-face interactions with human subjects until (i) Mason has generally authorized the types of activities you will conduct, or (ii) you have received advance written authorization to do so from Mason's Research Review Committee. In all cases, all safeguards for face-to-face contact that are required by Mason's COVID policies and procedures must be followed.

Please remember that all research must be conducted as described in the submitted materials.

Please note that any revision to previously approved materials must be submitted to the IRB office prior to initiation. Please use the appropriate revision forms for this procedure.

If you have any questions, please contact Michelle Wallerstedt at (703) 993-9628 or mwallers@gmu.edu. Please include your project title and reference number in all correspondence with this committee.

Please note that all research records must be retained for a minimum of five years, or as described in your submission, after the completion of the project.

Please note that department or other approvals may also be required to conduct your research.

GMU IRB Standard Operating Procedures can be found here: <https://oria.gmu.edu/topics-of-interest/human-subjects/>

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within George Mason University IRB's records.

Appendix B

Introductory Email

Subj: Research Study About Military Veterans Transitioning into the IT Workforce

Would you be willing to offer advice to transitioning military veterans who are interested in a career in the information technology workforce?

Greetings,

I am a doctoral student at George Mason University (and also a military veteran) and my dissertation research is focused on exploring the various educational pathways military veterans can pursue that will enable them to transition into a career in the information technology (IT) workforce.

The purpose of this study is to better inform future transitioning veterans about their educational options leading to careers in IT and to contribute to the knowledge and scholarship regarding military veterans' transition into higher education and the civilian workforce.

If you are a US military veteran, who did not specialize in IT while in the military but have completed an educational or training program that enabled you to transition into an information technology-related career field within approximately the last five years, I could really use your help.

Would you consider participating in an interview with me (over Zoom) to discuss your transition out of the military and into the IT workforce? My questions for you would be about why you decided to pursue an IT career, how you selected an educational program, your experiences in the program, and your subsequent career experiences. The interview could last up to one hour.

If you would consider participating, could you please complete a very brief registration form at the following link: https://gmucehd.az1.qualtrics.com/jfe/form/SV_6r0ggB08Sltiux

The only personal information I ask from you on the registration form is your name, email address, military service and occupational specialty, and year of separation. With that, I will contact you to coordinate a time to talk. I can explain more about the study or set up a time to conduct an interview.

If you know other veterans who might be interested in participating, please feel free to forward this email to them as well.

As a veteran myself, I would truly appreciate your consideration and I hope to hear from you.

Sincerely,
Andy Hamilton

This research study has been approved by the George Mason University Institutional Review Board, Case #1690705-1, the principal investigator (my dissertation chairperson) is Dr. P. Daniel Chen, Director of the GMU Higher Education Department.

Appendix C

Recruiting Advertisement

Dissertation Research Study: Military Veterans Transitioning into the Information Technology Workforce

Are you a US military veteran who works in the Information Technology (IT) workforce?

Did you complete an educational or training program within the last five years that enabled you to transition out of the military and into the IT workforce?

Would you be willing to offer advice to future transitioning veterans who are interested in a career in IT?

I am a doctoral student at George Mason University in Fairfax, VA. My dissertation research is focused on exploring the various educational pathways military veterans can pursue that will enable them to transition into a career in the IT workforce.

If you are a US military veteran, who did not specialize in IT while in the military but have completed an educational or training program within the last five years that enabled you to transition into an IT related career field, I would really appreciate the opportunity to speak with you.

Would you consider participating in an interview with me (over my GMU Zoom account) to discuss your transition out of the military, through school, and into the IT workforce? My questions for you would be about why you decided to pursue an IT career, how you selected an educational program, your experiences in the program, and your subsequent career experiences. The interview could last up to one hour.

If you would consider participating or for more information, please complete a very brief registration form at the following GMU Qualtrics link: https://gmucehd.az1.qualtrics.com/jfe/form/SV_6r0ggB08Sltiux



This research study has been approved by the George Mason University Institutional Review Board, Case #1690705-1, the principal investigator (my dissertation chairperson) is Dr. P. Daniel Chen, Director of the GMU Higher Education Department.



Appendix D

Recruiting Notice Posted on LinkedIn

Andrew Hamilton, PMP posted this



**Dissertation
Research Study**


**Military Veterans Transitioning into the
Information Technology Workforce**

Are you a US military veteran who works in the Information Technology (IT) workforce?

Did you complete an educational or training program within the last five years that enabled you to transition out of the military and into the IT workforce?

Would you be willing to offer advice to future transitioning veterans who are interested in a career in IT?

This research study has been approved by the George Mason University Institutional Review Board, Case #1690705-1, the principal investigator (my dissertation chairperson) is Dr. P. Daniel Chen, Director of the GMU Higher Education Department.



**Dissertation Research Study: Military Veterans Transitioning into the
Information Technology Workforce**

Andrew Hamilton, PMP on LinkedIn

January 30, 2022

Selecting the Link (title) of the post opened a LinkedIn “article” with the following text:

Dissertation Research Study: Military Veterans Transitioning into the Information Technology Workforce

Are you a US military veteran who works in the Information Technology (IT) workforce?

Did you complete an educational or training program within the last five years that enabled you to transition out of the military and into the IT workforce?

Would you be willing to offer advice to future transitioning veterans who are interested in a career in IT?

I am a doctoral student at George Mason University in Fairfax, VA. My dissertation research is focused on exploring the various educational pathways military veterans can pursue that will enable them to transition into a career in the IT workforce.

The purpose of this study is to better inform future transitioning veterans about their educational options leading to careers in IT and to contribute to the knowledge and scholarship regarding military veterans’ transition into higher education and the civilian workforce.

If you are a US military veteran, who did not specialize in IT while in the military but have completed an educational or training program within the last five years that enabled you to transition into an IT related career field, I would really appreciate the opportunity to speak with you.

Would you consider participating in an interview with me (over my GMU Zoom account) to discuss your transition out of the military, through school, and into the IT workforce? My questions for you would be about why you decided to pursue an IT career, how you selected an educational program, your experiences in the program, and your subsequent career experiences. The interview could last up to one hour.

If you would consider participating or for more information, please complete a very brief registration form at the following GMU Qualtrics link:

https://gmucehd.az1.qualtrics.com/jfe/form/SV_6r0qgB08Sltiux

Thanks, and I hope to hear from you.

Andy Hamilton

This research study has been approved by the George Mason University Institutional Review Board, Case #1690705-1, the principal investigator (my dissertation chairperson) is Dr. P. Daniel Chen, Director of the GMU Higher Education Department.

Appendix E

Screening Questionnaire in Qualtrics

Registration form for the Veterans in the IT workforce research study

Q1 In which branch(es) of the US military did you serve?

- ☐ US Air Force
- ☐ US Army
- ☐ US Coast Guard
- ☐ US Marine Corps
- ☐ US Navy
- ☐ I did not serve in the US Military

Display This Question:
If In which branch of the US military did you serve? != I did not serve in the US Military

Q2 Were you active duty, reserve, or National Guard? Select all that apply.

- ☐ Active duty
- ☐ Reserve or National Guard (but I've completely separated)
- ☐ Reserve or National Guard (and I'm still in)

Display This Question:
If In which branch of the US military did you serve? != I did not serve in the US Military
And Were you active duty, reserve, or National Guard? != Reserve or National Guard (and I'm still in)

Q3 In what year did you separate from the military?

Display This Question:

If In which branch of the US military did you serve? != I did not serve in the US Military

Q4 What was your military occupational specialty? Please use descriptive title and not the code. For example, write "Artillery" not "0811" or "11C."

Page Break

Q5 Do you currently work in an information technology related career field?

☐ Yes

☐ No

Display This Question:

If Do you currently work in an information technology related career field? = Yes

And In which branch of the US military did you serve? != I did not serve in the US Military

Q6 Approximately how many years have you worked in an information technology related career field?

Display This Question:

If Do you currently work in an information technology related career field? = Yes

Q7 Please select the options that best describe the educational programs you completed before getting a job in the information technology workforce? Select all that apply.

☐

Vendor-provided certifications (CISCO, CompTIA, MS, etc.)

☐

Certificate Program at a College, University, or Technical Training Institution

☐

Associate's Degree at a Community or Technical College

☐

Bachelor's Degree at a College or University

☐

Other

Display This Question:

If Please select the options that best describe the educational programs you completed before II... = Other

Q8 If other, please describe the educational program you co_____

Display This Question:

*If In which branch of the US military did you serve? != I did not serve in the US Military
And Do you currently work in an information technology related career field? = Yes*

Q9 Would you be willing to participate in an online interview (over Zoom) to describe your experiences transitioning out of the military and into the IT workforce?

- ☐ Yes
- ☐ Maybe
- ☐ No

Display This Question:

If Would you be willing to participate in an online interview (over Zoom) to descrll experienc... = Yes

Q10 Please provide your name and email address so I can contact you to schedule an interview. Your name and email address will only be used for logistical coordination and will not be associated with your interview discussion. Your interview responses will be anonymous to the greatest degree possible.

- ☐ Name _____
- ☐ Email address _____
- ☐ Please confirm email address _____

Display This Question:

If Would you be willing to participate in an online interview (over Zollscribe your experienc... = Maybe

Q11 Please provide your name and email address so I can contact you to discuss the possibility of you participating in an interview. Your name and email address would only be used for logistical coordination and would not be associated with your interview discussion. Your interview responses would be anonymous to the greatest degree possible.

- ☐ Name _____
- ☐ Email address _____
- ☐ Please confirm email address _____

End of Block: Default Question Block

Appendix F

Informed Consent Document



George Mason University
4400 University Drive
Fairfax, VA 22030

Educational Pathways for Military Veterans Transitioning into Information Technology and Cybersecurity Related Career Fields

INFORMED CONSENT FORM

RESEARCH PROCEDURES

This research is being conducted to explore the experiences and motivational factors that have influenced the decisions of post-transition military veterans who currently work in information technology related career fields. I will specifically ask veterans about the reasons why they decided to pursue the IT-related educational programs they selected, their experiences during their educational and vocational training programs, and how satisfied they have been during the entry-level phase of their career. The intended outcome of the study is to provide future transitioning veterans with valuable information about educational options that can lead to information technology related career paths and to expand the knowledge and scholarship regarding military veterans' transition into higher education and the workforce. If you agree to participate in the study, you will be asked to conduct an online interview with me over a GMU Zoom account that may take approximately one hour. After initial contact, you will have the option to keep the camera on or off during the interview.

This research will involve audio-recording our discussion. I will not use the Zoom recording feature; however, during the interview, I will use a stand-alone Sony digital voice recorder to record the discussion. After the interview, I will either use a local version of the Nuance Dragon Professional software on my laptop or the online paid transcription service, Rev.com, to transcribe the audio file into a written transcription of the conversation. I will then delete any personally identifiable information from the written transcription and save both the audio and written transcription of the interview on a securely stored external hard drive. I will use the written transcriptions of the interviews to compare the responses from the participants and try to identify themes or ideas that help answer my research questions.

My dissertation chairman and I will be the only individuals who will have access to the audio recording of this interview, but once any personally identifying information is removed from the written transcript, that document could possibly be shared with other researchers assisting me with future follow-on research. The audio files will be destroyed once my dissertation is complete. However, in accordance with GMU research policies, we are required to archive the de-identified written transcripts for at least five years. The de-identified written transcription may be destroyed at that time, but it may also be maintained indefinitely and used for future related research without additional consent from participants.

At the beginning of the interview, I will ask you to state one of the following selections:

_____ Yes, I agree to audio recording.

_____ No, I do not agree to audio recording.

RISKS

There are no foreseeable risks to you for participating in this research.

BENEFITS

There are no benefits to you as a participant other than knowing that your answers will help advance research about veterans' transition into the IT workforce. In addition, while they would not be attributed to you directly, your responses may be used with other participants' responses to provide advice to future transitioning military veterans.

CONFIDENTIALITY

The data in this study will be confidential. Your name and email address will not be associated with your interview responses. During the registration process, I will assign a code to your file, which will be recorded in a handwritten logbook that will be stored separately from the interview audio file and transcription. My dissertation chairman and I will be the only individuals who will have access to the logbook. Names and other identifiable information will not be placed on research files – only the non-identifiable codes.

While it is understood that no computer transmission can be perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmission. Aside from the registration form, I will not store digital files with any sort of identifiable information on shared servers and research files with identifiable information will only be transferred by external hard drive.

Even though I will not be using the recording feature provided by Zoom, participants may review Zoom's website for information about their privacy statement at <https://zoom.us/docs/en-us/privacy-and-security.html>

Participants may also review the Rev.com website for information about their privacy and secure data handling procedures at <https://www.rev.com/security>

The Institutional Review Board (IRB) committee that monitors research on human subjects may inspect study records during internal auditing procedures and are required to keep all information confidential.

PARTICIPATION

Participants in this study will be US military veterans, who did not specialize in IT while in the military but have completed an education or training program, within approximately the last five years, that has enabled them to transition into an information technology related career field. No active military members (active duty or reserve) will be enrolled in the study.

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party. The interviews could take approximately one hour.

CONTACT

This research is being conducted by Andrew Hamilton, a doctoral student at George Mason University's College of Education and Human Development. He may be reached at 540-419-5076 or ahamiltb@gmu.edu for questions or to report a research-related problem. The principal investigator is his dissertation chairman, Dr. P. Daniel Chen, the Director of GMU's Higher Education Program and he can be reached at 703-993-6363 or at pchen23@gmu.edu. You may contact the George Mason University Institutional Review Board office at 703-993-4121 or IRB@gmu.edu if you have questions or comments regarding your rights as a participant in the research. The unique IRBNet tracking number for this study is: 1690705-1.

This research has been reviewed according to George Mason University procedures governing your participation in this research.

CONSENT

At the beginning of the interview, I will ask you to state the following: "I have received and read the informed consent form, all of my questions have been answered by the research staff, I agree to participate in this study, and I agree to an audio recording of our discussion."

Appendix G

Interview Protocol

Introduction
1. Review content in Informed Consent Form (includes purpose of the study) – confirm willingness to audiotape. 2. Turn on audio recorder. 3. State participant code number and we have reviewed IC. Participant states acknowledgment & willingness.
RQ1: Why do transitioning military veterans decide to pursue an IT or cybersecurity career field?
How did you like your time in the military? - What did you enjoy (or dislike) the most? What IT field do you work in now? Why did you decide to pursue a career in IT? *What influenced your decision to pursue this career? [Probe for specifics]: - When you think back, was there a specific person who encouraged you to...? - Tell me about the TAP class during your transition...was the idea discussed there? *Why did you specifically choose to get into the _____ career field?
RQ2: Why do transitioning military veterans pursue the educational pathways they select for entry into these fields?
I noticed on your registration form you completed a _____ program. Can you tell me some of the details about that program? - Where did you complete it...how long...types of courses...online/in person? *Why did you select that program (school, location)? - Did any one person specifically recommend that program (or type of program)? - What about during the TAP class; was it discussed there?
RQ3: What are veterans' experiences during the educational pathway they select?
*What were your experiences during school? - What did you enjoy/dislike the most? - How challenging were the courses for you? *Did you feel prepared for your transition to school? - As you were transitioning into school, did you feel like the conditions were set for you to succeed? - How so/why not? - [Probe for situation variables] trigger, timing, level of control, concurrent stressors ... - Did you feel like you had the skills and abilities to succeed? - How so/why not? - [Probe for self variables] health, prior education, inner strength, optimism... - What kind of support did you have during that time? - Social support – family, friends, veteran's group? - Did you use the GI Bill? How were your experiences with the VA? - Did you receive support from any organizations external to the school?

<p>- Can you remember employing and particular strategies to help you during that time?</p> <p>- Academic, time management, or to reduce stress?</p>
RQ4: How satisfied are military veterans after completing their transition into these fields?
<p>Is this your first job after school?</p> <p>How did you get this job?</p> <p>Now that you're working in IT, how is everything going for you?</p> <p>[Probe for assessment indicators] Work, family, health, well-being, community</p> <p>Overall, do you feel satisfied with the career choices you've made?</p> <p>[Probe compared to experience in military] Roles, Relationships, Responsibilities, Assumptions met</p>
RQ5: What are veterans' future career goals after completing the entry-level phase within these fields?
What are your plans for the future?

Appendix H

Analytical Framework

	Participant 1	Participant 2	Participant 3	Participant 4
Sex				
Service				
Year separated				
Path				
Years in IT				
Situation				
MOS				
IT Career				
Describe pathway? (Recommend to others)				
RQ1) What influenced decision to pursue IT Career? -What was specific influence?				
TAPS?				
RQ2) Why did they select educational pathway? (Consider codes from prior study in ch2)				
RQ 3) Experiences during school?				
Situation?				
Self?				
Support?				
Strategies?				
How entered career?				
RQ4) Assess Satisfaction:				
Work?				
Other indicators?				
Overall Transition (R3A)				
RQ5) Plans for future?				

Recommended resources				
Advice to others				

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Biography

Andrew Hamilton earned his BA in History from the University of Texas at Austin and subsequently served in the US Marine Corps. During his time in service, he completed the Advanced Degree Program where he earned an MS in Education Psychology from George Mason University (GMU), in Fairfax, VA. He subsequently completed his PhD from GMU as a part-time student, initially during his time in service, and then after his transition into the American workforce.