

A PREDICTIVE CORRELATION STUDY EXAMINING PERSISTENCE IN A VIRGINIA
COMMUNITY COLLEGE BASED ON VETERAN STATUS, DEMOGRAPHICS AND
COMPLETION OF DEVELOPMENTAL COURSEWORK

by

Takesha A. Holt-McMiller

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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APPROVED BY:

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Abstract

Despite the significant scope and documented challenges facing veterans, few studies have addressed student veteran graduation persistence. A predictive correlation research design was used to analyze the persistence of veteran and non-veteran students in an associate degree program. In this study, community college students' veteran status (i.e. veteran or non-veteran), enrollment status (part-time or full-time), success in remedial/developmental English (Yes/No pass), and demographic variables, such as gender (male, female, other), race (minority, non-minority), and age, were examined to determine their ability to predict persistence to graduation from associate degree programs. A logistic regression analysis was conducted to examine how persistence can be explained by the set of variables. Participants were drawn from a convenience sample at a community college in an upper-income suburb in Virginia, just outside of Washington, D.C. The primary participants were undergraduate community college students who had served in the military, transitioned into civilian life, and were completing an associate degree; and non-veteran students who completed an associate degree at the same community college. The findings demonstrated that the predictor variables did predict persistence in community college associate's degree programs, with enrollment status being the only variable individually and positively linked to persistence. The variables investigated only predicted 18.8.% to 27.7% of the variance in persistence, additional variables and interactions between variables needed to be further explored to understand this phenomenon fully.

Keywords: community college, graduation, non-veteran, persistence, remedial, veteran

Dedication

I dedicate this manuscript to my dear mother (Dorothy Johnson) and grandmother (Arlena Holt), who passed away before I began my doctorate journey. I know you both would be so proud of me for accomplishing my goal. I could feel your presence each step of the way. Next, I dedicate this manuscript to my husband, Jason, and two sons, Jason and Logan. Without your support and understanding, none of this would be possible. Jason, thank you for your generous support and supporting the extra time and hours getting a babysitter when I needed time alone to think and write. I Love You, and I am forever grateful for your generous support.

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List of Abbreviations

Department of Defense (DoD)

Military Occupational Specialty (MOS)

Northern Virginia Community College (NVCC)

Service members Opportunities Colleges (SOC)

State Council of Higher Education for Virginia (SCHEV)

Variance Inflation Factor (VIF)

Veteran's Administration (VA)

Virginia Community College System (VCCS)

Virginia Employment Commission (VEC)

Virginia Placement Test (VPT)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, predictive correlation study was to examine how, if at all, students' veteran status, enrollment status, success in remedial/developmental English, and demographic variables predict their persistence in an associate degree program. Studies have found that successful completion a remedial/developmental English course by college age students within three semesters of their first enrollment was an important predictor of student likelihood of completing a degree (Moore & Shulock, 2009; VCCS, 2019). On the surface, this idea has merit in that being able to write coherently is vital to assessing a student's understanding of any subject matter. The association between successes in writing with presumed academic persistence to graduation was an area that needed to be explored.

This study was important because more veterans than ever are seeking higher education after separation from their military service, with the belief that completing their degrees will allow them to achieve a more secure foundation financially and personally as they re-enter civilian life (Lockwood et al., 2012; Sloat, 2011). Hiring qualified, well-educated veterans also has a large impact on the national economy, and employers seek them out (Curry et al., 2015; Rosenberg, 2017; Society for Human Resources Foundation, 2018). However, having completed military service is no guarantee to secure employment as it once was since an undergraduate degree opens the door to employment, making higher education more critical for veteran financial success (McDowell, 2017). Further, civilians face employment challenges with just having an undergraduate degree, making more advanced degrees and training critical for ideal employment (Selingo, 2017). According to the American Council on Education (2015), about

40% of students, who are veterans, attend community colleges, making the issue of persistence to graduation not only important but also critical for further education and training.

Data for this study was collected using instruments and procedures that supported quantitative analysis of two areas. The first was the difference between a veteran and non-veteran student persistence to graduation. The second was the difference in persistence rates to graduation with successful completion of a remedial/developmental English course within three semesters of initial enrollment.

Background

Since the passage of Post-9/11 G.I. Bill (Post-9/11 Veterans Assistance Act) in 2008, over a million beneficiaries have been able to receive funding for education, including supplemental (for private institutions, out-of-state) or full (for public institutions and in-state) tuition and fees coverage, housing, and book expenses (McBain et al., 2012). In 2013 alone, \$10.8 billion was invested by the federal government in post-9/11 G.I Bill, which benefited close to 800,000 veterans (Student Veterans of America, 2014). O'Herrin (2011) argued that little has been reported concerning academic performance, related financial need, or workforce-related outcomes, despite the heavy investment of funding. Although most public colleges (74%) and universities (66%) of public four- and two-year institutions respectively have programming precisely for students who are veterans, the outcomes provided on data related to their scholarly persistence or achievement remain scanty.

Massa and Gogia (2017) argued that to promote student veteran success, institutions of higher learning need to collect and analyze more comprehensive data than can currently be accessed. Federal and institutional data collection can be augmented by longitudinal data systems and statewide longitudinal data systems to provide a more nuanced and systematic

approach to understand the learning pathways relating to the success of student veterans. Data collection should start with the counting of overall enrollment and extend into data elements that address student experience, financial needs, post-completion employment, and degree completion. The lack of studies conducted on veteran students, especially those who attended community colleges, has created a gap in output data for this cohort. O'Herrin (2011) asserted that the unavailability of evidence of veteran outcomes is referred to as a current "data black hole" (Daly & Fox Garrity, 2013). The Servicemen's Readjustment Act, commonly known as the GI Bill since passage in 1944, has long been considered a means to achieving educational and professional goals (Humes, 2006). The benefits were meant to integrate members of the armed forces into the academic world rather than leaving them to join the job market. Mettler (2002, 2005) and Smole and Loane (2008) stated that these benefits were aimed at showing appreciation to citizens for the sacrifices they made during war time, helping them recover from the devastation and integrate into peaceful leadership.

The enactment of the Servicemen Readjustment Act in 1944 helped in the reconstruction of citizenship and community leadership among veterans (Mentzer et al., 2015). The most recent GI Bill-Veterans Educational Assistance Act signed into law in 2017 was also called the Forever GI Bill and was named after Harry W. Colmery, the American Legion national commander in America, who wrote the original GI Bill language in 1944 (U.S. Department of Veterans Affairs, 2018a). This legislation has 34 new provisions, most of which expanded or enhanced education benefits for service members, veterans, survivor, and families. Most remarkably, those veterans who transitioned out of the military after January 1, 2013 can still use their GI Bill benefits notwithstanding the 15-year deadline; hence, this legislation became known as the Forever GI Bill (U.S. Department of Veterans Affairs, 2018a). Veterans who were affected by the closure of

schools from the year 2015 saw their benefits restored by the law. Also, among other key changes were the expansion of benefits to surviving dependents, reservists, and Purple Heart recipients, as stated by the U.S. Department of Veterans Affairs (2018b).

There were different education and training benefits that were provided by the VA for veterans who have various academic goals, such as certificate programs, work-study programs, and post-secondary degrees. The U.S. Department of Veterans Affairs (2018a) pointed out that over \$41 billion have been paid by the VA in Post-9/11 GI Bill benefits from August 2009 to fund 1.2 million education beneficiaries. Provision of education and training were the most important benefits to secure employment and training to the nation's veterans when returning home from wartime (U.S. Department of Veterans Affairs, 2018a)

The GI Bill federal program continues to have a significant fiscal impact on colleges and universities. This was one reason it was essential to analyze how well veterans are doing in obtaining their educational goals when compared to non-military students.

This study was guided by Tinto's (1975, 2007) student integration theory, which put more emphasis on social and academic integration and provided a framework for the investigation of students' experiences throughout their course of study. Student integration into an institution may occur alongside social and academic dimensions as asserted by Hlinka, (2017). Academic integration results from a student's attachment to the intellectual life of the college; whereas social integration happens when students create connections and relationships outside of the classroom (Hlinka, 2017).

Hisada (1988) stated, even though the persistence of college students has been studied in the literature of 4-year institutions of higher learning, there was no underlying and unifying theoretical approaches. Most persistence studies were dependent on the theory of Tinto's

Student Departure theory (1975) that was based on Durkheim's (1951) work on suicide and the rights of passage theory that was proposed by van Gannep in (1960). According to Everett (2017), research on student persistence in the late 20th century took on a sociological perspective and focused on identifying individual and group attributes which would lead to dropout or persistence in college. Everett (2017) insisted that research on persistence was not only concerned with interactions but also with a person's psychological assessments of the phenomenon.

Primarily, persistence research developed from its origins in the student departure theory, focusing on the comparison between nontraditional and traditional students, to its present focus on psychological relationships and evaluations as poised by Everett (2017). It has been very difficult to understand how veteran and non-veteran persistence differ within Virginia community colleges without proper research.

Moore and Shulock (2009) posited that completing developmental or remedial coursework in the first semesters at a community college was a healthy predictor of graduation and postsecondary educational success, and it provided a healthy preparation for success for students who then transfer to four-year institutions. This was backed by Fike and Fike (2008), who saw a strong link between solid academic preparation and persistence. Leake and Lesik (2007) and Lesik (2007) suggested a social component to successful completion of developmental coursework in that these underprepared students then felt part of the academic culture of the college community and therefore persisted. These findings, however, did not specify nontraditional students nor veteran students. It was therefore important to examine veteran persistence in light of the completion of remedial English courses.

Problem Statement

The problem on which this study focused was that there existed little research regarding graduation persistence and the efficacy of remedial or developmental coursework between veterans and non-veteran students attending two-year community colleges. Though prior research had addressed the persistence of veteran students attending four-year institutions, there was a need to learn more about how veteran students persist in the community college environment, especially since veterans are enrolling in community colleges at a higher percentage than non-veteran students when they transition from the military (Cavendish, 2017). According to Cavendish (2017), more than 1.027 million military veterans in the U.S are said to have gone back to civilian life between 2013 and 2017. It has been very difficult to obtain accurate information on postsecondary academic results for student veterans using military education benefits in the post-9/11 era, and the inconsistency in data collection methods for such information has confused student veterans' rate of completion in institutions of higher learning (Cate, 2014). However, this uncertainty was likely to continue if there was no strong empirical data (2014).

On the other hand, Wilson (2009) acknowledged that there had been a transformation in the academic environment whereby veteran students were allowed to acquire postsecondary degrees at a minimal or no cost because of the enactment of Post-9/11 G.I. Bills. It was expected that more than five million post-9/11 service members would have transitioned from the military by the year 2020. Veteran Affairs departments were established in all community colleges across the country in response to the increasing number of veteran student enrollment (Cavendish, 2017). Alongside the American Council on Education, Cook and Kim (2009) asserted that the veteran affairs departments were responsible for the expansion of services to

include veteran students as well as the military to promote a successful transition. Furthermore, the veteran affairs departments sustain and enhance classroom academic achievement.

Radford (2011) also stated that 43% of all postsecondary student veterans enroll in community colleges. However, Kim and Cole (2013) pointed out that that percentage had increased to 84% because it included those who start postsecondary education in two-year academic institutions and then transfer to a 4-year college or university (as cited in De La Gaza, 2016). In utilizing the benefits that came with the Post-9/11 G.I. Bill, the community college was the best option for the acquisition of postsecondary education as stated by the United States Department of Veteran Affairs (2014). According to Durdella and Kim (2012), Naphan and Elliot (2015), and De La Garza (2016), college GPAs of veteran students were lower, compared to that of non-veteran students, and this made it challenging to support and enhance student veteran success in colleges.

While approximate 80% of all community college students desired to complete their degrees, only 20% successfully completed their goals (Paterson, 2019a). It is logical to assume that veterans, who are also within the community college population, fail to persist to graduation. However, accurate numbers were lacking due to limited quantitative research on student veterans in institutions of higher education (DiRamio & Jarvis, 2011).

In addition, research regarding remedial classes and veterans was not only lacking but also showed that what does exist about remedial education had mixed results, with some offering discouraging rates of persistence. Ulmer et al.'s (2016) limited study of students in a for-profit university, however, did find that remedial courses were helpful for students from specific race, ethnic, and cultural groups. Paterson (2019b) stated that those in remedial coursework were less likely to matriculate than those who took standard courses, even when their time pursuing higher

education was extended to six years. Equally troublesome statistics state that half of freshmen students were locked into English or math remedial courses because of student placement scores that did not always determine or reflect student success with college-level coursework (Complete College America, 2011; Paterson, 2019b). Research on persistence rates of veterans who took remedial courses was lacking. This study provided much needed insight into how veteran status and taking remedial/developmental English courses predicts persistence.

Purpose Statement

The purpose of this research was to investigate veteran and non-veteran students' persistence, defined as degree completion at a community college in Virginia. A predictive correlation research design was used to analyze the persistence of veteran and non-veteran students. In this study, veteran status enrollment status, success in remedial/developmental English, and demographics to predict persistence to graduation was investigated. The rationale for the use of this predictive correlation was at the heart of the study. The aim of the study was to examine the association of a set of variables with the variable of persistence.

The independent or predictor variables for this study included student veteran status (i.e. veteran or non-veteran), enrollment status (part-time or full-time), success in remedial/developmental English (i.e., yes, no pass), gender (male, female, other), race (minority, non-minority), and age. The dependent or criterion variable was persistence (i.e., yes, no) (Gall et al., 2007). Archival data was collected and then analyzed for this study. The participants for this study were drawn from an ex-post facto convenience sample of community college veteran and non-veteran students, drawn from data obtained from the Office of Institutional Effectiveness and Student Success at the community college study site during the fall semester of the academic school year of 2016. The site selected to conduct the study was obtained from the

largest veteran population within the Virginia Community College System (VCCS), out of 23 colleges within the system; therefore obtaining a sufficient sample size did not pose a problem. The school year 2016-2017 was selected because National Education for Education Statistics (2016) influenced the choice of allowing students four years to complete their academic goal of pursuing their associate degrees. This would have students completing in the spring of 2020. Van Dusen (2011) stated despite ample research that showed the positive impact of the G.I. Bill, there had been little done since the Vietnam era about G.I. Bill users' success in finishing college.

Significance of the Study

From the time when the Post-9/11 G.I. Bill was enacted, over a million beneficiaries have been able to receive funding including supplemental benefits for private and out-of-state institutions, and full benefits for public and in-state institutions. According to McBain et al. (2012), this funding covered housing, tuition, book expenses, and fees. Student Veterans of America (2014) established that about \$10.8 billion were invested as Post-9/11 G.I. Bill benefits to serve around 800,000 veterans in 2013. However, there was limited information on academic performance, workforce-related outcomes, and financial needs despite the substantial financial investment made by the government. As such, the data collected regarding every student veteran at the national level was relative to fund disbursement tracking. Little attention on the disbursement of funds affected the data collection quality in two ways. To begin, student veterans who were enrolled in a postsecondary institution in Virginia were not identified by the collected data and their outcomes specifically. Also, the use of tuition codes in identification and follow-up of student veterans enrolled in institutions of higher learning did not include nonnative Virginia resident students, who qualified to be residents of the state in other criteria (as cited in Massa & Gogia, 2017).

The other way in which the data collection quality was affected was that the data collected did not indicate student veteran performance measures. The data did not also show the relationship between performance, access, and affordability affected by programs aiming to serve student veterans and experienced by them as required by the Commonwealth of Virginia (2016). A good example of this was Virginia's Pell grant reporting history. One of the elements that made Pell grants and the Post-9/11 G.I. Bill resemble each other was the fact that all of them were federal programs which were aimed at increasing access to postsecondary education for those having problems with affordability and accessibility. The State Council for Higher Education for Virginia started publishing the rates of graduation for Virginia's Pell grant beneficiaries in 2008. This revealed a gap in the rates of graduation among the beneficiaries of Pell grant and those who did not benefit from the grant (Massa & Gogia, 2017).

The number of studies on veterans transitioning from military service and their classroom experiences has been growing exponentially. However, little or no research had been conducted on veteran graduation persistence and how they survive within the community college system in comparison with non-veteran students. This study added to the literature by studying the difference between veteran and non-veteran persistence at a Virginia community college. The contribution of this study to the knowledge base on veterans in institutions of higher learning sought to improve data collection across federal and state agencies including the Department of Defense, Department of Veteran Affairs, Virginia Employment Commission (VEC), and many postsecondary institutions. These agencies tracked financial resources that were spent. However, no agency tracked the academic performance measure of the students, thus allowing for improvements to be made in the types of programs offered in academic institutions. Massa and Gogia (2017) argued that being able to track the progress and journey of a person in an

institution helped in understanding the person in a broader perspective, including how sectors interact with each other and the relationship between institutions, as well as student behavioral patterns. The authors established that information concerning the enrollment of student veterans and associated funding disbursement was presently being collected by the federal government (Massa & Gogia, 2017).

In addition, determining whether the completion of developmental or standard coursework had a bearing on persistence of veteran students was investigated. If positive predictors for persistence of veteran students to completion of a degree, such as completion of college English, were found, this information had an impact on services that prepared service members for transition into the civilian section who went on to pursue higher education.

Research Question

RQ1: How accurately can persistence to graduation be predicted from a linear combination of veteran status, students' enrollment status success in remedial/developmental English, and student demographics for community college students?

Definitions

1. *Active duty military:* This is defined as “full-time duty in the active military service of the United States, including active duty or full-time training duty in the Reserve Component” (DoD, 2018, p.7).
2. *Degree program:* The term program refers to an associate degree with its own curriculum code and all related specializations, certificates, and career studies certificates (Northern Virginia Community College, 2018). A degree program is a broadly structured curriculum leading to the award of an associate degree and is listed on a student’s diploma (2018).

3. *Department of Defense Installation*: This refers to any active duty military, National Guard owned, operated or leased base, reservation, post, building, camp, site, or any other facility where the military servicemen/women have been assigned for duty (Castillo, 2018).
4. *Developmental Education*: This term in higher education is used interchangeably with remedial education and basic skills courses, referring to noncredit courses in English, math, reading and writing (Jimenez et al., 2016). (Variable 1) For the purpose of this study, *developmental education* will be measured by the collections of students test scores on the Virginia Placement Test (VPT) in English. Students are considered to be successful in a course if they earned a grade of “A,” “B,” or “C.” In addition, “D” is a passing grade; “F” signifies failure of a course. A grade of “I” represents an incomplete and is used when a student is unable to complete a course within the normal time frame. A “W” is given if a student withdraws from the course after the add/drop period but prior to completion of 60 percent of the course session (Education Brief, 2015).
5. *Nontraditional Student*: According to educators and scholars such as Cavendish (2017) and the National Statistics Education Center (2012), a nontraditional student refers to someone who has more than one of the following features: not living on campus, more than 24 years old, working full-time, seeking non-degree or occupational credentials, married or having dependents, not enrolled in the full-time program, and not fitting the institution’s homogenous characteristic because of ethnicity, race, and gender among other cohort features.
6. *Non-veteran*: This refers to a person who has never been in the U.S active military service. (Variable 3) For the purpose of this study, non-veteran will refer to a person who never has served in the U.S active military.

7. *Remedial Education*: Refers to coursework below college-level credit courses, usually for no credit, in reading, writing, and/or math that are aimed at teaching students the academic competencies necessary to succeed in college-level coursework (Jimenez, Sargrad, Morales, & Thompson, 2016). Remedial Education is interchangeable with the term “Developmental Education.”
8. *Post-9/11 G.I. Bill*: The Post-9/11 Veterans Educational Assistance Act of 2008 is a law that provides academic benefits to servicemen and women, who have actively been in service for more than 90 days from the 10th of September 2001. The benefits cover additional academic expenses, living allowance, and money for books, as well as the ability to transfer unused educational benefits to children or spouses (U. S. Department of Veteran Affairs, n.d).
9. *Veteran*: According to Title 38 of the Code of Federal Regulations, a veteran is someone who served in the active military, naval, or air service and who was discharged or released under conditions other than dishonorable (U. S. Department of Veteran Affairs, n.d.). (Variable 2)
For the purposes of this study, only veterans who have been discharged from active duty and/or continue to serve as active reservists or National Guard will be considered.

Summary

This chapter discussed the importance of the impact of completing a college degree on the financial success of service members, who have transitioned into civilian life. It also pointed toward the lack of information about the successful completion of college degrees among students who are veterans and the need to determine rates of persistence to graduation of those students in order to better serve those who are veterans. In addition, successfully completing a developmental or standard college English course within the first three semesters of enrolling was discussed as a possible predictor for positive persistence to graduation. Successfully

completing a developmental English course was defined and measured as obtaining a passing score on the Virginia Placement Test (VPT) after taking the course, earning a grade of “A,” “B,” or “C.” In addition, “D” is a passing grade, and “F” signifies failure of a course. A grade of “I” represented an incomplete when the student could not complete the course within the normal timeframe. These factors laid the groundwork for this new study to examine rates of persistence to graduation between students who were veterans and those who were not and how completing English courses early in one’s college career impacts successful persistence to graduation.

CHAPTER TWO: LITERATURE REVIEW

Overview

This literature review provides a theoretical understanding of veteran graduation persistence and related literature on veterans compared to non-veterans continuing to complete their education goals at a community college in Virginia. More than one million military veterans were projected to return to non-military life between fiscal years 2013 and 2017 and are now in civilian life, and 44% of those individuals were anticipated to select two-year institutions (American Association of Community Colleges, 2012; Cavendish, 2017; U. S. Department of Veterans Affairs, 2014). Acquisition of accurate data on the postsecondary academic outcomes of today's generation of student veterans has been difficult (Cate, 2014). In 2007 and 2008, 43% of the postsecondary student veteran population was enrolled in community colleges (Radford, 2011). Those numbers have grown to 84% of student veterans beginning their postsecondary education enrolled in two-year institutions (De La Garza, 2016; Kim & Cole, 2013). Supporting and enabling student veteran achievement at postsecondary institutions is a problematic endeavor considering quantitative research on student veterans on a large scale is limited (DiRamio & Jarvis, 2011). It has been found that student veterans tend to earn lower college GPAs than their nonveteran counterparts (De La Garza, 2016; Durdella & Kim, 2012; Naphan & Elliot, 2015). Exploring rates of student veteran persistence, therefore, and factors, such as remedial coursework, that impact student veterans completing their degrees is important.

Theoretical Framework

Tinto's theory on the persistence of students toward graduation has been in application for several decades and, as a result, has helped in improving the success of students (Tinto, 1975). Research on the persistence of students has shifted from focusing on the institutional

setting to identifying reasons for dropouts among learners (Feldman & Newcomb, 1969; Tinto, 1975). The focus shifted further to linking degree completion to drop-out rates and encouraging learners to continuous enrollment (Mentzer et al., 2015; Pascarella & Terenzini, 1991). The shift finally returned to focusing on institutional settings, mainly in the form of institutional action (Tinto, 2010, 2012). The Model of Student Veteran Support provided by Vacchi and Berger (2014) offered a conceptualization framework to assess the effort by learning institutions to improve the success of student veterans (Thompson-Ebanks et al., 2017).

Persistence research has evolved from its origins in student departure theory, with its emphasis on comparison between groups (traditional and nontraditional students), to its current focus on individual psychological assessments and relationships (Everett, 2017). The seminal persistence and attrition models developed by Tinto (1993) and Bean and Metzner (1985) also spoke to the military learner's transition to college, although the conceptual focus of these models was primarily on the subsequent engagement and support factors believed to influence college persistence or attrition (Ford & Vignare, 2015). Tinto's (1993) model originally focused on the successful academic and social integration of traditional learners as a pre-condition for avoiding early college departure and completing a degree (Ford & Vignare, 2015). In 1997, Tinto updated the theoretical language and construction of the model to incorporate differences found in the academic engagement profile for nontraditional learners (Ford & Vignare, 2015). Central to these revisions was an emphasis on how the classroom can foster both social integration and academic success for traditional and non-traditional learners, making the model

somewhat more useful in framing the persistence of military learners. (Factors in College Retention and Persistence, n.d.).

Persistence/attrition models assume that institutions of higher education only conclude with students persisting or departing as outcomes. Consequently, they don't account for the mobility of military students that include duty station transfers or frequent stoppages due to exercises or deployments. These models were developed before the proliferation of online learning environments. They did not account for military learner persistence in online learning environments, according to Hayek (2011), whose research called into question Bean and Metzner's (1985) conceptual model of nontraditional student attrition (Ford & Vignare, 2015). The use of a multi-theoretical model to frame college learner persistence responded to the recommendations of several retention researchers who posited that existing theoretical models failed to adequately address the complexity of college persistence, particularly for marginalized or nontraditional learner populations (Braxton & Milem, 2000; Ford & Vignare, 2015; Park & Choi, 2008; Rovai, 2003; Wapole, 2007).

Persistence Theories and Higher Education Research

Tinto's (1975) theory purported that the integration of academic and social aspects helped in improving the retention capabilities of a learner. Tinto initially published the student departure theory in 1975, one of several persistence theories that have been understood in a variety of ways (Everett, 2017). There was a characterization that student veterans were often nontraditional students (Ackerman & DiRamio, 2009; McBain et al., 2012; Radford, 2011; Vacchi, 2012). However, the student departure theory, whose main focus was placed on traditional student populations, could not be applied to nontraditional students, including student veterans (Everett, 2017). Until today, studies conducted on learners have depended heavily on

Tinto's (1975) student departure theory, which provided that student veterans were required to integrate and adapt socially to the learning environment for them to succeed; although the research on nontraditional student research outlined these findings to be inaccurate (Bean & Metzner, 1985). The traditional student model did not take into consideration the variance between student veterans and their traditional student peers, including traditionally aged student veterans (Vacchi, 2012). Such deficiency was referred by Freire (1970) as “deficit modeling.” As support to academic persistence of student veterans, it was essential to understand the variance from other students, due to the different subpopulations and subcultures within this group (Everett, 2017). Berger (2000) reaffirmed that organizations were required to adapt to unique subpopulations of students, instead of placing expectations on these students, including veterans who improved their adaptation to the university. By using such steps as the rites of cultural passage, Tinto (1975) provided that students should socially adapt or integrate into the campus community (Everett, 2017). Such steps of passage included separation, transition, and incorporation (Everett, 2017).

It is important for institutions to understand their unique cultures and subpopulations, such as student veterans, to better support their persistence toward their educational goals, whether completion of a college course, certificate, degree, or diploma. Tinto (1993) made changes to his persistence model based on a review of the literature, examining selective private schools retaining students at a higher rate (57.6%) than open admissions institutions, such as community colleges (38.7%) (Everett, 2017). Data comparing the National Longitudinal Survey of the High School Graduation Class of 1972 (NLS) to the High School and Beyond Studies of the High School Class of 1980 (HSB) revealed an increase in enrollment, attendance, and attainment for community college students over those eight years (Everett, 2017). Tinto

concluded his review of the literature by positing that more students were taking advantage of community colleges to determine their fit with higher education (Everett, 2017).

Remedial Courses and Persistence

Cohen and Brawer (2003) found that nearly half of the English classes taught at community colleges were remedial classes. Hawley and Harris (2005) echoed the link between English proficiency and college persistence. However, participation in remedial English classes were problematic because often these classes were a repeat of the type of English classes that students were taught in high school and these courses were non-credit courses and did not count toward graduation. Taking developmental classes, however, was no guarantee of college success; although the experiences of students who took them often determined whether or not they would continue their college education (Northern Virginia Community College, 2019).

Remedial education's changing roles in colleges. The role of remedial education seemed to have taken on a more important role in higher education since colleges were tasked with improving graduation rates among their students. Colleges learned that many students were not completing their programs of study because they could not pass Standard English and Math courses and developed remedial courses to solve this problem (Paterson, 2019b). However, offering remedial courses was not a complete solution because students often did not even complete these remedial classes and therefore dropped out. Even when students did pass these courses, it was no guarantee that students would continue on to complete their coursework and graduate (Paterson, 2019b). Further, many students were identified in error to take remedial courses through standardized testing and did go on to do well in regular English and math courses, especially if support services such as tutoring were available (Paterson, 2019b; Ulmer et al., 2016).

Colleges today are seeking better ways to remediate students to help them complete their program in a timelier manner and in an affordable way (Paterson, 2019b). Colleges must do more to find a better alternative to remedial education because they are an added expense to a college program (Paterson, 2019b). Total yearly expense to students and their families are projected at \$1.3 billion and \$7 billion are costs to colleges (Paterson, 2019b). The goal of developmental education was created to assist students who were not academic prepared for college, but it did not work. Paterson (2019b) insisted that colleges needed to replace remedial courses with better assessment tools and implement support systems such as tutoring. This was echoed by Ulmer et al. (2016). Having better assessment measures was critical because about one-fourth of students have been incorrectly placed in remedial math and one-third in remedial English (Paterson, 2019b).

New measures for determining remedial education: Multiple measures. Colleges continue to seek ways to place struggling students in developmental courses in a way that students will be successful. Multiple measures have been designed to allow colleges a variety of assessment factors to determine the appropriate remedial course. Standardized test scores have been the most common tool for remedial class placement for high-risk students. Those students thrive when other factors and supports are combined with standardized test scores. Those supports often are high school and current GPA, college entrance exams, and work experience (Paterson, 2019b). Since the concept of multiple measures, schools in 19 states now use some amalgamation of high school grades, standard testing, college entrance scores, and work experience (2019b). Those states have reported higher persistent rates.

According to Sarah Truelsch, director of policy research, “For some time, we knew the two primary assessments (the ACT’s Compass and the College Board’s Accuplacer) for

placement into remediation were not doing a very good job of predicting how students would do in college courses” (Paterson, 2019b, par. 10). Some colleges in Arkansas reported success in developing alternatives to remedial placement. Mike Leach, director of the Center for Student Success at Arkansas Community Colleges, states “placing students more accurately by collecting and examining more student data is one simple step colleges and systems can take” (2019b, par. 15). Arkansas Tech University used a combination of GPA, ACT scores, and Accuplacer scores that helped them decrease the number of students in remedial classes (1,032 in 2017 to 794 in 2018) (2019b). In addition, 55% of students who took remedial classes passed, showing a 4% rise in remedial classes passed between 2017 and 2018 (2019b).

The California Community College System, bound by legislation from the Public Policy Institute of California (State Assembly Bill 705), reported more students entered their schools and completed transfer-level courses (Paterson, 2019b). This is significant since Alice Perez, vice-chancellor for academic affairs, reported “Most students who enter a community college never complete a degree or certificate or transfer to a four-year university” (Paterson, 2019b, par. 19).

The City University of New York reported that what remedial courses they offered were at a fraction of regular college unit prices (\$35 to \$75) and combined tutoring and solid academic advising (Paterson, 2019b). In addition, their introductory math courses coincide with student majors instead of theoretical mathematics, offering quantitative reasoning or statistics instead (2019b)

The Virginia Community College System (2019) also has developed more comprehensive remedial courses. For example, a combined remedial reading and writing course

is offered and it is based on ability levels (Paterson, 2019). This allows the course to fit the specific needs of more students.

Additional Factors Influencing College Persistence

Other factors can influence college persistence. Nakajima et al. (2012) noted having good grades was important, whereas DeAngelo et al. (2011) looked at those factors and SAT scores, in addition to socioeconomic factors such as cost, family background and encouragement, previous school experience, student goals, and college choice. DeAngelo et al. (2011) found that college choice that involved early admittance, cost, and size of the institution were the biggest factors for traditional students. These researchers also found that private four-year institutions had the highest rates of persistence to graduation and that public four-year schools had the lowest (DeAngelo et al., 2011). This data is interesting in the context of traditional students. However, this research does not identify nontraditional students nor veteran students.

Another factor in college persistence is the length of time it takes students to complete a degree. DeAngelo et al. (2011) found that today's college students are taking longer than average time to finish their degrees, with associate's degrees that are normally two-year programs taking three years and bachelor's degrees that normally take four years now take five to six. This extended period to finish a program of study may be a significant factor for nontraditional students and veteran students who also work and have families.

Related Literature

After the enactment of the Post-9/11 Veterans Assistance Act of 2008, also known as the Post-9/11 G.I. Bill, more than a million individuals now have access to either full funding by state and public institutions or supplemental funding by out-of-state and private institutions.

This funding included tuition and fees, housing, and book expenses (McBain et al., 2012). During the 2013 financial year, the federal government made an investment of \$10.8 billion after the Post-9/11 G.I. Bill, which was advantageous for over 800,000 veterans (Student Veterans of America, 2014). Although a vast funding investment, limited reports have been made regarding the financial need, academic performance, or workforce-related outcomes. Even though most of the 74% and 66% of public 4 year- and 2-year, respectively, colleges and universities had programs in place for student veterans, only a few offered outcome data associated with student veteran persistence and success (O'Herrin, 2011). The promotion of success in higher education institutions outlined that the collection and analysis of comprehensive data needed to be accessible (O'Herrin, 2011). Longitudinal data systems (LDS) and statewide longitudinal data systems (SLDS) have been known to increase the collection of both institutional and federal data, as it offered a systematic and nuanced approach that helped in understanding the educational pathways, which were linked with the success of student veterans (O'Herrin, 2011).

The process of data collection starts with complete enrollment counts, which currently was missing across the institutional and state level, especially data elements that speak to financial needs, the experience of the students, their magnitude of completion, and the rate of employment following degree completion (Massa & Gogia, 2017). One of the potential reasons for insufficient research regarding veteran students has been due to inadequate output data for this cohort, including such aspects as retention and graduation rates (Daly & Fox Garrity, 2013; Lawson, 2010). Elizabeth O'Herrin, Associate Director of Military Programs at the American Council on Education, referred to this lack of evidence for veteran outcomes as an existing "data black hole" (Lawson, 2010, p. 1).

History of the Servicemen's Readjustment Act

The G.I. Bill was previously used in promoting success in the education and professional field before the passage of the Servicemen's Readjustment Act in 1944 (Humes, 2006). Previous to this, the Bonus March in Washington in 1932 demanded additional benefits for WWI veterans, with education as a much-needed component to allow competition in the job market (Mentzer et al., 2015). By allowing these individuals to compete in the job market equally, the platform allowed for the repayment of veterans for their wartime sacrifices, thus creating a swift transition in their return from the devastation of war to peaceful leadership (Mentzer et al., 2015; Mettler, 2005; Smole & Loane, 2008). Further, the 1944 legislation was essential in supporting the rebuilding of community leadership and promoting stronger citizenship among veterans (Mentzer et al., 2015; Mettler, 2002, 2005).

Today, the original GI Bill and the Post-9/11 G.I. Bill greatly impact colleges and universities financially. However, there has been scant research on how much local higher education communities have benefited from the \$41 billion the federal government has provided in funding (Everett, 2017).

Terms Related to Student Veteran Populations

College learning institutions have been identified as enrolling diverse students linked to the armed forces. It is essential to understand the terms applied in referring to learners that have affiliation with this population (De Sawal, 2013). *Veterans* are individuals who have left service or separated from military forces, whereas the term *combat veteran* refers to any veteran who was in active duty during a period of war (De Sawal, 2013). *Military undergraduate* refers to veterans and others who are currently on active duty or are part of the reserve component of the National Guard. The population of military undergraduates has been growing and is expected to

be at 10% of the campus population (Molina & Morse, 2015). The legal definition of a veteran that is recognized by many organization such as VFW, American Legion and others are supported by Title 38 of the Code of Federal Regulations defines a veteran as “a person who served in the active military, naval, or air service and who was discharged or released under conditions other than dishonorable” (Code of Federal Regulations, 2020, p. 152). Furthermore, the definition explains that any individual who completed service for any branch of armed forces classifies as a veteran as long as they were not dishonorably discharged (Code of Federal Regulations, 2020).

The General Accounting Office (2019) reported that every year 200,000 service members transition from military life to civilian life (as veterans) and that number is expected to increase significantly. These student veterans will be enrolling in American’s colleges and universities as they seek to become career-ready and to improvement their future prospects for employment. During the 2007 and 2008 financial year, 1% of all students were military undergraduates, with 75% of those being veterans, 16% were military service members on active duty, and 1% were military service members in the reserves (De Sawal, 2013; Hamrick & Rumann, 2013).

Profile of Veteran Students

Some of the most frequently cited demographic data on current generation military learners came from two national data sets that are somewhat dated, namely the National Center for Education Statistics (NCES) 2004/09 Beginning Postsecondary Students Longitudinal Study (BPS: 04/09) and the 2007-2008 National Postsecondary Student Aid Study (NPSAS:08) (Ford & Vignare, 2015; Radford 2009; Radford & Wun, 2009; Radford, 2011). This data represented a cohort of military learners who entered higher education just prior to the implementation of the more generous Post-9/11 GI Bill (Ford & Vignare, 2015). The NPSAS:08 dataset showed that

military learners represented approximately 4% of the total student population enrolled in higher education, with veterans significantly outnumbering active-duty service member enrollments (Ford & Vignare, 2015; Radford & Wun, 2009).

Military students were similar to their nontraditional counterparts in several distinct ways. They were older, usually over 24 years old, and combined work, school, and family. In addition, they were more often enrolled as part-time students. Military students also dedicated as much of their time on educational pursuits as their nontraditional peers, even though they had more work and family responsibilities (Ford & Vignare, 2015; National Survey of Student Engagement, 2010).

Military students also received financial aid awards and GI Bill benefits comparable to or larger than those received by nontraditional learners, with for-profit institutions most often awarding the highest amount of aid, typically in the form of loans (Radford & Wun, 2009). These findings were consistent with a small sample study by Cate (2011), in which all respondents reported using financial aid to pay for college, with 60% using multiple forms of aid, including GI Bill benefits, grants, and scholarships (Ford & Vignare, 2015). Almost half of the respondents reported also using personal savings and federal loans.

Veteran and active duty military personnel were similar to other nontraditional learners in their choice of college in that military undergraduate students enrolled more often at community colleges and private for-profit institutions than traditional undergraduates. However, all nontraditional students, both military and nonmilitary, who were undergraduates and graduates, were enrolled more often at four-year public institutions than for-profit institutions (Ford & Vignare, 2015; Radford, 2011).

Demographics compiled by the Department of Veterans Affairs (2014) indicated that 73% of military learners were male, and 27% were female (Ford & Vignare, 2015). Slightly less than half were married and had children. Most military learners were 24-40 years old, although 15% fell within the same age range (18-24) as traditional college learners. Also, 62% of military learners were first-generation learners (Ford & Vignare, 2015). These statistics were mainly consistent with those reported by the National Survey of Student Engagement (2010), which indicated that military learners were also more likely to be transfer students.

Wurster et al. (2013) echoed Falcone's (2011) persistence model in their study and posited that many student veterans were also first-generation learners, thus adding to the challenges that face this population (Ford & Vignare, 2015). Student veterans shared similar characteristics with first-generation students. They delayed enrollment in higher education, were often from low-income backgrounds, did not live on campus, worked full time, had children, and lacked the cultural capital that came from having parents who had college experience. This last factor is critical because it influences how academically well prepared a student is, what his or her educational goals are, and the ability to understand how to apply to, enroll in, and survive college life (Ford & Vignare, 2015).

Veteran Data in Higher Education

Longitudinal data collection by states adds significant value to institutional data because it links what has been collected by institutions to expand the understanding of student veteran needs and successes, to promote higher education, and to advance broader statewide goals (Massa & Gogia, 2017; O'Herrin, 2011). Data collection by states is not limited by what happens within a single college or university but shows broad trends across all institutions with that state. However, this data is also summed to include all veterans across all student veteran

groups and may not show the migration of some students across different institutions nor the variation within specific groups.

Barriers to data collection. Nevertheless, the presence of well-established LDS and SLDS data cannot overcome all the barriers to comprehensive data collection that have been created by policy and resource allocation. As previously described, Virginia serves as a national exemplar for state-level collection for longitudinal systems, with a postsecondary LDS since 1992 and VLDS since 2009 (Massa, Gogia, 2017). However, the State Council of Higher Education for Virginia, which administers the postsecondary LDS and VLDS, cannot reliably identify student veterans within Virginia institutions of higher education, nor can it provide any information on common measures of success, such as retention, time to completion, or graduation rates.

In Virginia, the lack of data on student veterans does not demonstrate a failure in intellectual or logistical capacity, but rather it represents the limitations related to the orientation of public policy and resource allocation. Statewide data collection requires time, skilled personnel, and technology at the institutional and state level. Therefore, agencies tend to add elements to data collection only when there is a clear legislative mandate. The real question of institutional effectiveness, especially as it relates to degree completion, cannot be adequately addressed without considering the kinds of students who initially enroll (Astin & Oseguera, 2005). For this and other reasons, the Federal Student Right-to-Know and Campus Security Act, which requires institutions to report raw degree completion rates without simultaneously reporting data about the students when they enrolled, should be questioned (Astin, 1993, 1996; Astin & Oseguera, 2005).

Head-count reporting. Massa and Gogia (2017) identified head-count reporting as a simple counting process. This process made it convenient to do comparisons across a variety of institutions regarding enrollment, demographics, and retention and graduation rates. By demographics, a more precise count was ensured to indicate trends in student veteran data (Massa & Gogia, 2017).

Cohort life-cycle analysis. This type of analysis was based on Rice et al.'s (2012) Student Learning Progress Model and tracks progress semester by semester for ten years and helps fill the gap in data when a student enrolls in a new institution as an undergraduate. The cohort life-cycle looks at not only demographics and current registration, but past enrollment in other institutions, transfer status, and stop-out and dropout rates (Massa & Gogia, 2017). This level of detail allows for specific student classifications (such as full-time and part-time, first-time enrolled, and new transfer students). In addition, it collects data to show behavior across cohort groups based on demographics, financial aid recipients, and those with financial need. It could also amass standardized test scores or even course load attempts (Massa & Gogia, 2017).

Community College Student Persistence

Student persistence has been one of the well-studied themes in higher education (Tinto & Pusser, 2006). Stewart et al. (2015) found that traditional students who were academically prepared for college were more likely to persist to graduation than those who were not. To help those not prepared, they recommended interventions such as remedial help, tutoring, mentoring, counseling, and financial assistance (Stewart et al, 2015). Identification of specific groups that may or may not need such interventions, however, has been erratic. Daly and Fox Garrity (2013) identified efforts by institutions that focused on college students in general to identify groups/categories of students specifically (Daly & Fox Garrity, 2013). A short and non-

exhaustive list of these groups included first-term freshmen students, minority students, students from historically underrepresented ethnic groups, women, underprepared students, and at-risk students. Despite their long history of engagement with higher education, one group that has not been explored in the same manner or scope was U.S. military veteran students (Cook & Kim, 2009; Daly & Fox Garrity, 2013).

A total of 1,132 community colleges are enrolling up to half of all first-time learners in 2-year degree or certificate programs (American Association of Community Colleges, 2013; Cohen et al., 2014; National Center for Education Statistics, 2011). Further, community colleges are enrolling an estimated 35% of the total enrollments of all degree-offering institutions (National Center for Education Statistics, 2016). Even though community colleges have been identified as promoting the success of learners, their efforts are not adequate to guarantee the learner's success and persistence (American Association of Community Colleges, 2012). Research in persistence of college students, especially within four-year degree institutions, however, has been undertaken despite any sufficient unifying theory or approach (Hisada, 1988). A considerable proportion of the research on the persistence of students has been founded on the student departure theory authored by Tinto (1973) but based on Durkheim's (1951) content that focused on suicide rates among college students and van Gannep's (1960) theory for rites of passage. Durkheim's research pointed to the risk of suicide as being high when veterans were not able to smoothly integrate into society, which was a valid finding. However, research on learner's persistence implemented over the past few years focused on promoting the understanding of the attributes of various student groups, including veterans, since it impacted the persistence levels and well as the college dropout rate (Pascarella & Terenzini, 1991).

Though minority and first-generation students felt more comfortable attending community colleges, the student dropout rate in community colleges, however, has been recorded as being significantly higher compared to the students in four-year institutions (Everett, 2017; Johnson, 1991; Mohammadi, 1994, 1996; Nakajima et al., 2012; Provasnik & Planty, 2008; Sorey & Duggan, 2008; Schwartz, 2020; Tinto & Russo, 1994). Nearly half of the students in community colleges who enter the fall term drop out before the start of the next fall term (ACT, Inc., 2010; Everett, 2017; Schuetz, 2005). Only 46% of learners in community colleges, who have earned a degree or certificate, transfer to a four-year institution or enroll six years later (Everett, 2017; Radford et al., 2010). A high attrition rate has been documented among community college students who are considered a high-risk population. These students are identified to be either three or four times more likely to be exposed to factors that threaten their persistence (Cohen et al., 2014; Sorey & Duggan, 2008). Some of those factors include age at enrollment, racial and ethnic group, academic qualifications, and family income, particularly if these students come from lower-income families (Cohen et al., 2014; Sorey & Duggan, 2008). These statistics reflect all students and are not separated for specific groups within this populations, including veterans. However, since veterans and other non-traditional students make up a large portion of community college enrollment, it is logical to conclude these factors affect them as well (Ford & Vignare, 2015).

Persistence of Nontraditional Students vs. Traditional

Governmental reports on post-secondary education have provided crucial evidence on debates of student persistence (Choy, 2002). Some of the common themes identified include factors influencing the accessibility of colleges, the importance of completing a degree, and continuous enrollment. More than nine million learners were identified as being enrolled in

higher learning institutions in the 1990s, reflecting an increase of 25% from the 1970s (Choi, 1998). The influx of traditional students, however, has reflected a change in demographics on college campuses.

Choy (2002) identified a traditional student as a learner enrolling full-time following the completion of high school and who depends on parents for money for college and other expenses because the student does not work or only works part-time (Everett, 2017). These traditional students today make up a minority of the college population, with 60% of students failing to fit within this definition. This change in enrollment population is significant since college programs and curricula are designed to target traditional students. It seems, therefore, unrealistic in current society to target traditional students (Everett, 2017).

By strict definition, student veterans are likely to be classified as nontraditional students. Many are older than early adulthood, being over 25 years old. Many are persons of color and are independent adults who have families (Massa & Gogia, 2017; O'Herrin, 2011).

Additional research by Choy (2002) has also pointed out the main factors that shape accessibility to college by learners. One such factor was the educational level of the parents of new students. Other factors focused on elements of the home environment of the learners, the influence of the curriculum, and the awareness of college costs, as well as the accessibility of financial aid (Everett, 2017). Choy pointed out that learner's parents, who took high-level mathematics during secondary school, and those who applied and received financial aid were more likely to enroll their children in college (Everett, 2017). Choy (2002) also identified different personal, financial, and educational reasons that influenced enrollment of learners to higher education.

In addition, data collected about nontraditional students, which would include veteran students as a component, was spotty and often lacking because this data was grouped with all student data (Miller, 2014). National databases do monitor and measure student persistence to graduation. Among those are the National Student Clearinghouse (NSC), the National Postsecondary Student Aid Study (NPSAS), and the Integrated Postsecondary Education Data System (IPED). However, distinctions were not made that define non-traditional students and/or veterans. Miller (2014) called for better data collection methods and benchmarks to identify these students in order that universities might better serve them.

Enrollment and Degree Completion

More new recruits and veterans are stating their intention to use education benefits, and that factor may be a positive reason many enlist (Wenger et al., 2017). This and the motivating influence of increased education benefits for veterans have received targeted attention from higher education institutions in which they later choose to enroll. Despite multiple incentives for military personnel to continue their educations, several barriers persist that may complicate or limit their enrollment decisions (Mikelson & Saunders, 2012; Wenger et al., 2017). Lack of specific knowledge of education benefits, how to access them, and how to navigate the academic system are initial barriers (Wenger et al., 2017). This is especially true for new recruits; although veterans and new recruits who go through the Tuition Assistance program fare better (Wenger et al., 2017).

In addition, some veterans may not be able to gain admission to a highly selective institution. “Boredom or frustration with high school, often accompanied by mediocre transcripts and SAT scores led many into the military in the first place” (Alvarez, 2008, para.17; Mikelson & Saunders, 2012). Once veterans receive an offer of admission, they face additional

challenges that can affect their enrollment decisions related to financing education (Radford, 2009), balancing family responsibilities with school (Winston Group, 2008), and navigating course standards and expectations that may align more closely with the needs of traditional residential students (Brown & Gross, 2011; Mikelson & Saunders, 2012).

Military personnel and veterans may also face financial challenges that interfere with or preclude enrollment. Individuals who expect that the GI Bill will cover all expenses associated with education can be surprised when faced with the need to pay penalties associated with late tuition payments because of delays in reimbursements or the need to find supplement benefits with student loans (Mikelson & Saunders, 2012; Radford, 2009; Steele et al., 2010; Wenger et al., 2017). For example, under the new rules (as of September 2011), payment through the Post-9/11 GI Bill must be applied after all other aid is considered, which can delay payments through the VA as other forms of financial aid are processed.

Many institutions provide financial assistance designed specifically for veterans. The most common forms include eligibility for in-state tuition rates at public institutions (Cook & Kim, 2009; Mikelson & Saunders, 2012). Although there are several forms of federal and institutional financial assistance, students may have varying levels of financial aid awareness (Hamrick & Rumann, 2013; Wenger et al., 2017). One study found that whereas some veterans and service members understood the various types of financial aid, others were unaware or confused about Title IV programs, campus-based aid, and relevant eligibility, or mistakenly thought that GI Bill benefits covered all costs, which is not always the case (Mikelson & Saunders, 2012; Scott, 2011; Wenger et al., 2017). In a different study, 38% of respondents reported having difficulty understanding their GI Bill benefit options (Steele et al., 2010). This

was supported by Wenger et al.'s study where the researchers interviewed new recruits and advisors in advisors in military and veteran student offices (2017).

The ability of a college representative to adequately address questions about academic programs likely had an essential impact on veterans' enrollment decisions (Mikelson & Saunders, 2012). For example, a highly desired service from the institution was information about whether specific degrees or certificates would provide a meaningful credential for students after completion (Cook & Kim, 2009; Mikelson & Saunders, 2012). As O'Herrin (2011) described, veterans are typically older, and they often bring credit earned through courses completed in the military. Many seek to enhance their employment prospects after military services and want assurance that their institution and program selections will support their employment goals (Hammick & Rumann, 2013; Mikelson & Saunders, 2012). Many active-duty military students are opting for degrees within their field of training and active duty experiences in order to advance their rank; while older veterans are being directed through advisors to finance, accounting, and business administration (Wenger et al., 2017)

In addition to awareness of financial barriers and student veteran needs for assurance of benefits of degrees and academic programs, institutions need to recognize the challenges associated with student veterans who stop or drop out due to military services (Mikelson & Saunders, 2012). Veterans who are called to service and subsequently return to campus are likely to face unique challenges when they seek to return to their institutions. Cook and Kim (2009) noted that of responding institutions that offered programs or services for veterans or military personnel, only 22% had expedited re-enrollment processes to help students return to their academic pursuits (Mikelson & Saunders, 2012). The authors also reported that a majority of responding institutions with services, 62% required students returning from deployment to

complete standard enrollment processes. While some of these efforts may represent standard administrative practices that are applied consistently to students who drop out or stop for various reasons, these administrative barriers may delay veteran students' reengagement with their institutions and send unintended but clear messages regarding the campus climate for returning veterans (Hammick & Rumann, 2013; Mikelson & Saunders, 2012).

Wenger et al. (2017) found that military students are using their Tuition Assistance (TA) benefits first and then tapping into their Post GI Bill benefits. They are not using GI Bill benefits to supplement their TA benefits. Many are using only TA benefits and then taking out student loans or using state and local military tuition assistance (Wenger et al., 2017).

No consistent tracking of completion rates for students using GI Bill benefits exists yet (Mikelson & Saunders, 2012). In part, the difficulty in understanding completion rates is that there is no single database that can calculate annual, comprehensive graduation rates for all institutions and students enrolled in higher education in the United States (Hammick & Rumann, 2013; Mikelson & Saunders, 2012). Although several data sources exist to help understand completion rates (including institutional and non-institutional databases), this information is often incomplete because of the difficulty in tracking individual students across multiple institutions, such as those who transfer or who enter with various degree or program goals, such as certificate, associates degrees, and bachelor's degrees (Cook & Pullaro, 2010; Mikelson & Saunders, 2012).

A new tracking program initiated by the Student Veterans of America holds promise to provide better veteran persistence data. Because most persistence data are based on enrolling and graduating from the same institution, most data are incomplete. Veterans often start college where they are based or from where they are transitioned and then transfer to another institution

when they complete their separation from service. Called the National Veteran Education Success Tracker, this new method tracks individual veterans and may show a truer picture of veteran persistence (Mathewson, 2017).

Rolen (2017) reported that in 2016 nearly all veterans had earned a high school diploma and two-thirds of them had attended some college classes. Interestingly, though, more veterans had had some college education or had earned an associate's degree (Rolen, 2017). Researchers such as Field (2008), Mikelson and Saunders (2012), and Wenger et al. (2017), however, suggested that many veterans were not using or underusing their earned education benefits. Field (2008) reported that only 6% of veterans had used the entire 36 months of their educational benefits. This suggested that many veterans may complete technical training or earn associate's degrees, but they may not use the benefits to earn bachelor's degrees in less than the 36 months allotted or they may already have bachelor's degrees or they may drop out or stop their education (Mikelson & Saunders, 2012). Wenger et al. (2017) posited that veterans and new recruits, especially, were not fully informed in what their benefits were or how to properly access them.

Although national data may not provide a clear picture of degree completion or educational progress for veterans, Mikelson and Saunders (2012) noted several challenges that can either delay or interfere with educational progress for veterans. One significant challenge facing military students was the possibility of active duty responsibilities. Ongoing duties can cause students to drop courses, change schedules, or miss classes (Mikelson & Saunders, 2012). With constant travel demands, frequent training exercises, and possible deployments, active members of the military find themselves in unique circumstances that diminish their academic experience and reduce the likelihood of sustained connection to their campus communities

(Mikelson & Saunders, 2012; Wenger et al., 2017). For example, a deployment or active duty assignment can take students away from educational resources, including Internet access, which may limit access to instructional materials, thwart the ability to respond to course requirements in a timely manner, and make engaging in group work difficult (Brown & Gross, 2011; Mikelson & Saunders, 2012). In addition, transfers, promotions, and deployment may cause military students to withdraw from one university and apply at another (Wenger et al., 2017).

Mikelson and Saunders (2012) and Woo (2006) stated that 80% of colleges and universities reported that they had a student or students who needed to withdraw for military services, and about two-thirds of all institutions implemented policies regarding tuition refunds or academic transition provisions related to withdrawal for military service (Mikelson & Saunders, 2012; Woo, 2006). Despite institutions' attempts to ease these transitions for students who withdraw, student veterans can experience extended time to degree completion due to the need to wait to take infrequently offered courses or because they miss sequenced courses during deployment (Hamrick & Rumann, 2013; Mikelson & Saunders, 2012; Wenger et al., 2017).

Creating Conditions for Veteran Success

O'Herrin (2011) outlined a number of practices that institutions have implemented to foster the conditions necessary for the success of veterans, including:

- Creating groups for veteran students.
- Establishing learning groups, safe spaces, and resource centers for veterans.
- Establishing working groups across campus departments that can aid veterans.
- Identifying sources within campus departments and offices that veterans use
- Creating more effective disability and other services for veterans.
- Creating orientation programs specifically for veterans.

- Educating faculty and staff about specific issues that face veterans.
- Creating partnerships with community organizations to supplement services for veterans

These practices stressed that contemporary student veterans and service members seek orientation to the collegiate environment that complements the military cultures they have experienced, campus climates that respect their background, community members who understand how to interact respectfully and engage in thoughtful dialogue, and programs and services that allow student veterans and service members to connect with one another (De Sawal, 2013; Hamrick & Rumann, 2013).

Many of these recommendations highlight the need to understand military culture within higher education contexts. Campus administrators need to meet these students where they are developmentally in relation to their transitions to college (De Sawal, 2013). Environments that recognize that these students are looking for elements of social order, discipline, and structure can use that framework to create conditions for students to explore and transition to educational outcomes that focus on reflective learning and high-order thinking (De Sawal, 2013). It is, therefore, important to identify campus administrators and staff who can offer support to this student population with the ultimate goal of hiring designated point persons or coordinators who can work with student veterans and service members (De Sawal, 2013).

Analyzing Veterans Success

Campus personnel, when developing and implementing initiatives, need to question the way they are required to detect whether the actions are successful. One such approach can involve assessing the participation rate in programs and services to understand the number and types of veterans taking advantage of the initiatives. When a specific demographic has not

participated, a new approach can be used to provide information on the success of the program. Campus participants should aim to gain more information on the satisfaction levels of participants, focusing on their encounters with such events as mentorship actions and orientation programs, as well as sessions of counseling. The assessment can be conducted through the use of point-of-services satisfaction surveys to help in obtaining the necessary feedback from the participants and practitioners and to help in the identification of the field for improved performance and the opportunities for improvement.

In general, administrators are needed to acquire improved images of the enrolled population; some of these changes after the 9/11 GI Bill exhibit the need for basic exit data among benefits recipients (U.S. Department of Veterans Affairs, 2018b). Legislators have posed questions on the effectiveness of the GI Bill in promoting the persistence of veterans and the potential of their graduation. Legislators are required to request data for upcoming years to assess the rate of success or failure of public universities to address the requirements for these critical elements that impact veterans (U.S. Department of Veterans Affairs, 2018b). Information regarding veteran enrollment in college campuses is often collective, meaning it lumps all responses into a Veteran category, an aspect that limits the usefulness of this data. Information to create a profile for each learner should be obtained at every stage of college application to detect the details, such as the gender, race, and ethnicity, of those veterans who are using VA benefits and those who are not using these benefits (U.S. Department of Veteran Affairs, 2018b).

The process of benefits certification for each veteran portrays the need for a specific set of data, which is transmitted to every veteran based on their discharge paperwork, as well as the application of the GI Bill. These sets of data tend to be beneficial to inform administrators of the

number of veterans on their campuses, specific demographic information, and the number of veterans who served in previous military conflicts. These actions are characterized by obtaining new data for improving the analysis approach of current information. Although the average rate of enrolment is known, it is challenging to understand the trends across different veteran groups using demographic information or background data. As a result, Bensimon (2005) requested the disaggregation of all the student findings on the aspects of race, ethnicity, and gender by the school administrators. Further, he requested the breakdown of gender within specific categories such as race and ethnic grouping. The objective was to identify the potential patterns for unequal outcomes. Currently, learning institutions combine several identity-based groups under the veteran category, making it challenging to identify variances between subgroups. The approach to offer complete data through disaggregation can help in confirming or refuting the untested hypothesis, challenging the preconceived ideas, and also encouraging additional inquiries (Bensimon, 2005)

Institutional Leadership on Serving Student Veterans

U.S. institutions of higher learning are seeking to become more supportive of veterans and service members, yet many campuses have been generally underprepared to effectively meet these individuals' needs (Jackson et al., 2013; Hamrick & Ramann, 2013). Although much was learned about student veterans' needs during the 1960s and 1970s, some of the practices and knowledge useful in that era are outdated and counterproductive for contemporary students (Jackson et al., 2013). If higher education administrators wish to increase the presence of service members and veterans on their campuses and foster their success, they need to provide adequate support services for these students (Ackerman et al., 2009; Baechtold & De Sawal, 2009; Jackson et al., 2013). Higher education administrators need to develop roles, responsibilities,

and potential strategies to support and serve the student veteran population. Appropriate institutional objectives and recommended strategies need to be in place to create a veteran-campus. Institutional leaders from presidents and provosts to vice-presidents and deans are critical to the successful establishment of and support for student veteran services (Jackson et al., 2013).

Since the Post-9/11 GI Bill, veterans are enrolling in college in numbers not seen since the 1970s (Jackson, et al., 2013). Colleges and university administrators must seize opportunities to ensure that individual student veterans have the services and programs necessary to make the most of this potentially life-changing experience (Jackson et al., 2013). Campuses that enroll increasing numbers of veterans emphasize the development of new services and programs and employ marketing and outreach strategies to recruit these students (Cook & Kim, 2009; Jackson et al., 2013). Each day, campus leaders make decisions based on a myriad of variables, including financial concerns, politics, students, institutional and individual relationships, legislative initiatives, and governance. Providing services to veterans and service members who utilize GI Bill benefits may be the right thing to do, but at its root, it is a decision based on legislative opportunity to provide services to students (Jackson et al., 2013; Hamrick & Rumann, 2013).

The decision of whether or not to develop veteran services is one that institutional leaders must approach deliberatively. They must consider the following questions when constructing these needed services:

- Is there a critical mass of student veterans on campus? (This need not be a large number or sizeable proportion of the campus enrollment; instead, this speaks to the threshold of

best meeting student veterans' needs on a case-by-case basis versus development of official resources (Jackson et al., 2013).

- Is there potential to grow this population?
- Are there military installations nearby, and if so, are there opportunities to collaborate with them?
- Is the state legislature generally favorable to veterans' services and willing to support new services that serve this population?
- Will a decision not to provide veteran-specific services negatively affect any students, the campus, or the institution's image or standing within the community or state?

College campuses should be friendly environments for all students and subgroups of students, including veterans, yet not all institutions are well suited to offer in-depth services and support (Jackson et al., 2013).

Community Colleges Prioritize Support Services

Research challenges colleges to provide more support services to community college students. Students struggle with a host of other responsibilities relating to work, school, family life, and basic needs (Schwartz, 2019). More than half of community college students have greater responsibilities of providing for their families while obtaining higher education, according to a new survey from Ithaca S+R and Northern Virginia Community College (Schwartz, 2019). Community colleges have been tasked with improving student support services due to the decline in enrollments and poor graduation and retention rates. To respond to such needs, community colleges are adopting the guided pathways model to help provide students with a direct path of program completion of which classes student should be taking for transfer to a university or credential seeking for the workforce. The Ithaca S+R offered eight

potential support services colleges can use as a guide to modify their offering of needs to students. The following support services are listed in order of importance so that student needs are met (Schwartz, 2019):

- Establish a point person to connect students with the right services.
- Loan technology to students and provide more in-person assistance with equipment.
- Employ a “personal librarian” accessible in-person or through email, phone, or chat, who helps find books, journals and other materials they need.
- Hire a social worker to help students with their nonacademic needs, such as finding childcare or securing public assistance.
- Offer either regular or emergency childcare services.
- Run workshops about how to use digital media safely.
- Create more opportunities to encourage students to be engaged citizens.
- Provide a space in which students can showcase their classwork and personal and professional expertise (par. 12)

Establishing Veteran-Friendly Campuses

The Council for the Advancement of Standards in Higher Education (CAS) described “the purpose of Veteran and Military Programs and Services (VMPS) is to provide support for student veterans, military family members, and family member receiving veterans’ benefits through the GI Bill” (CAS, 2010, p.1). To better serve veteran students, many colleges are now creating veteran-friendly campuses (Everett, 2017). These campuses are most commonly found in colleges and universities that have strong ties to the military or are geographically located near a military service base (Everett, 2017; Summerlot, 2009). A veteran-friendly campus is one where administrators, staff, and faculty attempt to identify and remove barriers to the educational

goals of veterans, create a smooth transition from military life to college life, provide information to veterans about available benefits and services, create campus awareness of the student veteran population, and create proactive support programs for student veterans based on their particular needs (Everett, 2017; Vacchi, 2011). These veteran-friendly campuses tend to attract veteran students who are hoping to find institutions and academic programs that will facilitate the completion of their educational goals (Everett, 2017; Persky and Oliver 2011, Summerlot, 2009).

The Military Friendly Schools survey conducted one of the longest and comprehensive reviews of how institutions of higher education serve veteran and military students (Everett, 2017; Viqtory, 2019). For the tenth year, the survey offered a comprehensive guide for veterans and their families through the use of such sources of data as federal agencies and also information from a proprietary survey by the participating organizations (Everett, 2017; VCCS, 2019). The organizations under the Military Friendly School designation were analyzed through the use of information collected from public data sources and the responses from a proprietary, as well as information obtained from the school (Everett, 2017; Viqtory, 2019). Some of Virginia's Community Colleges obtained high marks in the 2019 ranking as military friendly. The final ratings were evaluated by combining the rankings in the institution's survey scores with the assessment of the institution's potential to accomplish standards for loan repayment and default rates, retention and persistence, graduation, and job placement for veterans.

Creating a military-friendly campus and support system for veteran students is important to onboarding and retaining veterans in the classroom to help them to persist towards their education goals. The Toolkit for Veteran Friendly Institutions (American Council on Education, 2018) and the Serving Those Who Serve initiative (American Council on Education, 2008) also

generated several promising practices. According to Molina and Ang (2017), these practices provided a useful framework for developing support initiatives and include the following:

Gaining leadership support. “It is important to garner the support of an individual at the administrative level who can advocate on behalf of military-connected students. Top-down support, whether from the President/Chancellor’s Office, Provost’s Office, or Vice President for Student Affairs, can help to increase the success of the programs and services implemented on the campus to support military-connected students” (Molina & Ang, 2017, pg. 81-83).

Taking a collaborative approach to support.

“One of the most important factors related to military-connected students’ success is the need to develop collaborative community and campus partnerships. Institutions can use these partnerships to implement integrated and comprehensive programs and services for military members, veterans, and their dependents. Community and campus approaches that address issues, such as housing, health care, career development, financial aid, and educational benefits, help military-connected students stay in college and meet their degree completions goals” (Molina & Ang, 2017, pg. 81-82).

Engaging your military-connected students.

“Student veterans can serve as the pulse of the veteran experience in higher education, describing what works and what does not from their perspective. Moreover, campus staff can encourage military-connected students to organize and create student veteran organizations dedicated to sharing information and learning about issues that may affect others who share this status” (Molina & Ang, 2017, pg. 82).

Establishing a single point of contact.

“Ideally, this single point of contact will have a deep understanding of the military culture, transition issues military-connected students face, the institution’s admissions and application processes, financial aid policies, and campus support services focused on retaining the student veteran until graduation” (Molina & Ang, 2017, pg. 83).

Creating a veteran-specific orientation/workshop. “Some institutions have found great success in holding veteran-specific orientations, which offer an opportunity for incoming servicemembers and veterans to learn about services and programs available to support their time in college” (Molina & Ang, 2017, pg. 83).

Providing faculty and staff training. “Conducting faculty and staff training on military culture and veteran education benefits is one of the best ways to reduce the stigma and misunderstanding surrounding military-connected student” (Molina & Ang, 2017, p.83).

“Training opportunities help educate faculty and staff about barriers to college success and relevant campus services” (Molina & Ang, 2017, pg. 83).

Collecting data on military-connected students and college outcomes.

“It is impossible to serve military-connected students if we do not know who they are and what their needs are. As a result, it is recommended that institutions of higher learner collect basic military and veteran status information from students through admission, financial aid, and registrar’s intake forms/surveys” (Molina & Ang, 2017 p.83).

“Moreover, having military and veteran status identifying information can help administrators answer questions about their academic performance and factors related to their college retention when merged with other institutional research data, such as demographics, grades, and financial aid information” (Molina & Ang, 2017, pg. 83-84).

Summary

This chapter provided a literature review of research that revealed gaps that relate to persistence theory and the veteran population. Evidence pointed to a void of existing quantitative research that assessed the success of veterans attending colleges, especially community colleges where a vast number of military veteran students are enrolled. Accurate data to support how well this population of students were persisting and obtaining their goals compared to non-military students was lacking. Accurate data tracking from institutions and on federal and state levels must be mandated to improve how data is collected and the quality of the information received. The veteran student population is complex and not easily described by any one educational model (Ford & Vignare, 2015). Similarities to nontraditional student populations align these learners to specific persistence models, transition theory, and validation theory to frame their college experiences and outcomes (Ford & Vignare, 2015).

What is needed to advance the next wave of research on military learners and, by extension, other nontraditional learners, including those in the student pool of at-risk learners, is a student success model that positions the institution as a responsive learning partner during the students' transition to and progression through college (Ford & Vignare, 2015). Additional research is also needed to understand military learner transition(s) and college choice. Persistence and current methods of tracking learners assume that the first college a learner chooses is where a student should graduate. The persistence data was revealing for military learners (Ford & Vignare, 2015). It almost showed a bimodal trend in which first-generation learners often struggle while others with family college experience do better. Very few of the studies looked at large populations (Ford & Vignare, 2015).

This quantitative study filled in the necessary gaps in literature analyzing veteran and non-veteran students to determine the way they compare in meeting their education goals at a community college. The data provided administrators, faculty, staff, and, most important, federal and state policymakers with an understanding of veterans' persistence and an understanding the role of remedial education have in accurate data analysis in community colleges in Virginia.

CHAPTER THREE: METHODS

Overview

This research investigated veteran and non-veteran students' persistence to graduation at a community college in Virginia. This predictive correlation study examined if veteran status along with non-veteran student enrollment status, success in remedial/developmental English, and demographics (i.e., race, age, and gender) predicted students' persistence in an associate degree. The community college system offers students a multitude of programs. The degree types include AA (Associate of Arts); AS (Associate of Science), AFA (Associate of Fine Arts), AAA (Associate of Applied Arts), and AAS (Associate of Applied Science). In this chapter, the research design, research questions, and null hypotheses regarding veteran and non-veteran persistence are presented. The participants, setting, instrumentation, data collection procedure, and the analysis of data are described.

Research Design

A predictive correlation research design was used to analyze the persistence of veteran and non-veteran students in an associate degree program. In this study, community college students' veteran status (i.e. veteran or non-veteran), enrollment status (part-time or full-time), success in remedial/developmental English (Yes/No pass), and demographic variables, such as gender (male, female, other), race (minority, non-minority), and age, were examined to determine their ability to predict persistence to graduation from associate degree programs. The rationale for the use of this predictive correlation was the focus of the study. The purpose of the study was to examine the association of a set of variables with the variable of persistence within the community college. In this study, there was no single predictor variable being manipulated and the aim of the study was to not isolate one variable to determine the difference between

groups (Gall et al., 2007). Here, the independent or predictor variables included student veteran status (i.e. veteran or non-veteran), enrollment status (part-time or full-time), success in remedial/developmental English (i.e., a grade of C or better or S for satisfactory), gender (male, female, other), race (minority, non-minority), and age. The dependent or criterion variable was persistence to graduation (i.e., yes, no) (Gall et al., 2007). Archival data was collected and then analyzed for this study.

Research Question

RQ1: How accurately can persistence to graduation be predicted from a linear combination of veteran status, students' enrollment status success in remedial/developmental English, and student demographics for community college students?

Null Hypothesis

For this study, the null hypothesis is:

Ho1: There is no predictive relationship between the criterion variable, persistence to graduation, and the linear combination of these predictor variables (veteran status, students' enrollment status, success in remedial/developmental English, and student demographics) for community college students.

Participants and Setting

The participants in this study consisted of a convenience sample of approximately 300 veteran and non-veteran students who entered in their program at the community college in the Fall 2016 and Fall 2017 academic year. All data collected on the participants was archival, and data from 150 veteran students and 150 non-veteran students. A random sample was drawn from the entire population of students who enrolled during the specified time period. From that student population, a sample of 300 participants was selected, offering more than a necessary

minimum in order to create a medium effect of 0.7 statistical power for the 0.05 alpha level (Gall, et al., 2007).

More specifically, the participants were community college students who enrolled in a Northern Virginia community college in the Fall of 2016 to pursue an associate degree. Students attended the college full-time or part-time. The normal time to degree completion for students attending full time was two years. According to Education Center for Statistics (2016), there are different lengths of time used to measure graduation rates: normal time (2 years), 150% (3 years) of normal time, and 200% (4 years) of normal time. The year of 2016-2017 was selected because National Education for Education Statistics (2016) influenced the choice of allowing students four years to complete their academic goal of pursuing their associate degrees, which would have students completing in the spring of 2020.

The community college was located in a middle-to-upper income suburb outside of Washington, D.C. As of spring 2016, the target institution's enrollment was just over 74,000 unduplicated students, including undergraduate full-time and part-time (Northern Virginia Community College Office of Institutional Effectiveness and Student Success Fact Book, 2019). Table 1 shows the college enrollment data from fall 2016.

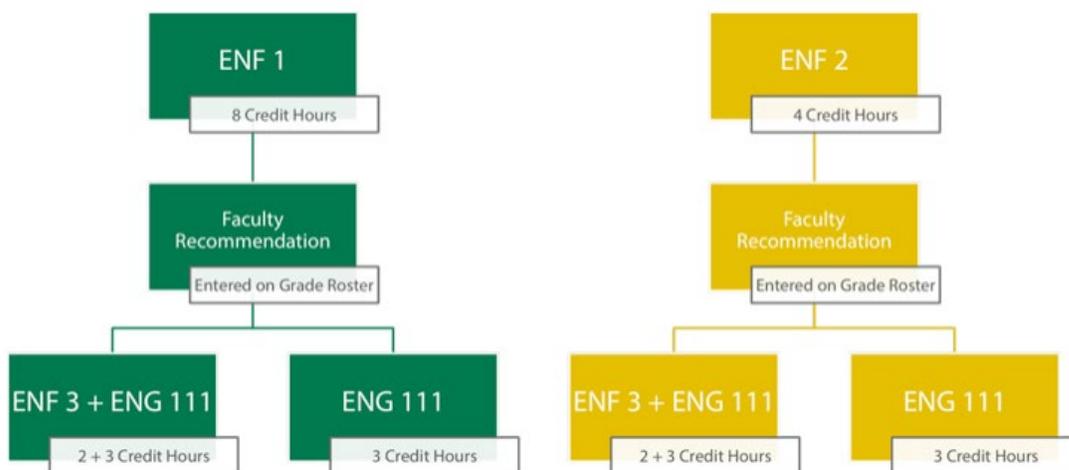
Table 1.

Enrollment for Fall 2016

Fall Enrollment	Total Students	Veteran Students
2016	74,689	2,610

Table 2.

When Applying and Admitted Students Are Required to Take English



Source: www.nvcc.edu/academics/developmenta/english.html

Instrumentation

Permission to use archival data for this study was obtained from the college's Office of Institutional Effectiveness and Student Success that use the Virginia Community College System (VCCS) Performance Funding Measures as a primary source for the data. A description of the data is provided below.

Persistence to Graduation

Throughout the literature, persistence has been measured in a number of ways. One common retention metric is completion of a degree within a specified period of time (e.g., Davidson et al., 2009; Mortenson, 2005). Thus for this study, persistence, the criterion or dependent variable, was operationally defined as completion of an associates' degree within a 4-year period, accounting for the various time frames for degree completion discussed by the National Education for Education Statistics (2016).

As noted above, data was obtained from the college's Office of Institutional Effectiveness and Student Success after receiving Institutional Review Board (IRB) approval. Data was provided via an Excel spreadsheet with all students' identifying information removed. Upon receiving the data, cases were coded, where students did not finish as zero and those who did obtain a degree were coded as one.

Success in Remedial/developmental English or English Completion

Success in remedial/developmental English was a predictor or independent variable and was defined as completing college English within three semesters of enrollment (Thomas Nelson Community College, 2018). The college's Office of Institutional Effectiveness and Student Success provided student data from the remedial/developmental Virginia Placement Test (VPT) English placement test scores, which were coded. If a student earned a grade of C or higher in a credit-level course or an S in a developmental course (Student Achievement Criteria at NOVA, 2019) within 3 academic semesters of enrolling, the student was considered successful and was given the code of 1. If a student did not receive a grade of C or higher in a credit-level course or an S in a developmental course (Student Achievement Criteria at NOVA, 2019) within 3 academic semesters of enrolling, the student was considered not successful and was given a code of 0.

Additional Predictor/ Independent Variables

The Office of Institutional Effectiveness and Student Success also provided additional student data for analysis. Enrollment status was also collected. Part-time enrollment was coded as 0, and full-time enrollment was coded as 1. Demographic data was also collected on gender (0= male, 1= female; note another variable for other was created as needed), race (0= minority, 1= non-minority), and age (number of years old).

Procedures

Written approval to conduct this study was obtained from the college's Office of Institutional Effectiveness and Student Success and permission in writing was obtained for archival student graduation rates and Developmental English completion rates (VPT) from data from fall 2016. After receiving approval from the college's Office of Institutional Effectiveness and Student Success and the dissertation committee for this study, approval of the Liberty University Institutional Review Board (IRB) was obtained. (See Appendix A for IRB approval.) Next, approval was obtained from the Vice-President of the Institutional Effectiveness and Student Success for student enrollment data for the academic year 2016. (See Appendix B.)

The college's institutional effectiveness office was contacted to (a) acquire demographic information, (b) determine whether the students were veterans or non-veterans, (c) determine whether they obtained degrees within four years, and (d) determine whether they completed developmental English within three semesters of matriculation. This data, therefore, included student enrollment, demographics, degree program completion, and English placement scores. To ensure student anonymity, student names were not included in the data file. All data were stored on a password-protected laptop.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) software was used to conduct all data analyses associated with the study. The collected data was maintained and kept secure on a laptop computer that was only used for this study. The laptop was kept locked in a secured office at the college. The data was assigned anonymous pseudonyms for the (a) college, (b) college system, (c) location of the college, and (d) other identifiable information (e.g., email

addresses). The names of the research participants and any of the information that was a Family Education Rights and Privacy Act (FERPA) violation was removed from the data sets.

A binomial logistic regression analysis was conducted to examine how persistence could be explained by community college students' veteran status, enrollment status, success in remedial/developmental English, and demographic variables. The analysis was used to answer all the research questions. This analysis was chosen as it is commonly used when researchers want to predict the probability that a case falls into one of two categories of a dichotomous dependent variable, persist vs. did not persist, based on a set of independent variables (Warner, 2013). Assumption testing was completed before conducting the analysis.

Assumption testing included examining the assumption of linearity using the Box-Tidwell (1962) procedure. Using the Bonferroni correction with the ten terms of the model, the statistical significance for the procedure was set at $p < .0125$ (Tabachnick & Fidell, 2014). The non-nominal independent variable, age, was assessed and found to be linearly related to the logit of the dependent variable. Studentized residual values were assessed to identify extreme outliers. There were fifteen cases with standardized residual values above 2.5 standard deviations; these cases were removed prior to conducting the analysis.

For the binomial logistical regression analysis, an alpha level of .05 was used to determine significance. Results of the direct logistic regression analysis demonstrating whether the entire model, including all variables, significantly predicted whether a student persisted to graduation. Cox and Snell (1989) and Nagelkerke reported that *R* Square for the model demonstrated the effect sizes to determine how much the variance in persistence can be explained by the entire model. A table with the Wald values was used to demonstrate how each variable did or did not make a significant individual contribution in explaining persistence.

Summary

In this chapter, the research design was presented along with a discussion of the instruments that were analyzed and how the data was processed. This provided a strong research plan to study veteran and non-veteran student persistence to graduation at a community college in Virginia.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this predictive correlation study was to examine the association of a set of variables with the variable of persistence within the community college in Virginia. This study examined if veteran or non-veteran student enrollment status, success in remedial/developmental English, and demographics (i.e., race, age, and gender) predicted students' persistence in an associate degree. A binomial logistic regression was conducted to determine if a community college student's demographic variables (i.e., race, age, and gender), veteran status (i.e. veteran or non-veteran), enrollment status (i.e., part-time or full-time), and success in remedial/developmental English (Yes/No pass) could predict his or her persistence to graduation (i.e., yes, no). The sample ($n=1554$) consisted primarily of minority ($n = 1156$; 74.4%) men ($n = 1156$; 74.4%) with the average age of 21.46 ($SD = 6.94$). Only 226 of the participants were veterans, and only 399 (25.7%) individuals in the sample persisted unto graduation.

Research Question

The research question answered was:

RQ1: How accurately can persistence to graduation be predicted from a linear combination of veteran status, students' enrollment status success in remedial/developmental English, and student demographics for community college students?

Null Hypothesis

For this study, the null hypothesis was:

H₀₁: There is no predictive relationship between the criterion variable, persistence to graduation, and the linear combination of these predictor variables (veteran status, students'

enrollment status, success in remedial/developmental English, and student demographics) for community college students.

Assumption Testing

Before conducting the binomial logistic regression, assumptions were tested. The assumption of linearity was examined using Box-Tidwell (1962) procedure. The statistical significance level used was set at $p < .05$. The non-nominal independent variable, age, assessed was linearly related to the dependent variable's logit ($p = .866$). The assumption was met. Studentized residual values were assessed to identify extreme outliers. Fifteen cases existed with standardized residual values above 2.5 standard deviations; these cases were removed before conducting the analysis. Therefore, 1554 cases were analyzed.

Descriptive Statistics and Demographic Information

The data analyzed consisted of 1554 student cases, where students were enrolled at a community college during the 2016-2017 academic year. Of the 1,154 students, 229 students were veterans. Veterans were defined as students who served in the United States military. Of the cases analyzed, 680 (43.8%) were female. Eight-hundred and seventy-three (56.2%) were male, and one (.1%) had no gender identification. Five student cases (.3%) were identified as American Indian/Alaskan, 229 (14.7%) as Asian, 97 (6.2%) as Black, 335 (21.6%) as Black/African American, 3 (.2%) as Hawaiian or Pacific Islander, 405 (26.1%) as Hispanic, 61 (3.9%) as two or more races, 20 (1.3%) as Unknown, and 398 (25.6%) as White. The average age (mean) was 21.46, and the standard deviation was 6.94. Data for the 1,154 students were analyzed to answer each research question. The variables, their coding, demographic frequencies, and descriptive statistics for the variables analyzed are also contained in Table 3.

Table 3.*Descriptive Statistic, Demographic Frequencies and Variable Coding (N = 1554)*

Variable	<i>M</i>	<i>RANGE</i>
Age	21.46	16-65
	Frequency	Coding
Graduation		
No	1155	0
Yes	399	1
Race		
Minority	1156	0
Non- Minority (White)	398	1
Gender		
Male	874	0
Female	680	1
English Grade		
C	396	0
S	1158	1
Enrollment Status		
Part-Time	527	0
Full-Time	1027	1
Veteran Status		
No	1328	0
Yes	226	1

Logistic Regression Results

The logistic regression model, consisting of demographics (i.e., gender, age, race), veteran status (i.e., veteran or non-veteran), enrollment status (i.e., part-time or full-time), and success in remedial/developmental English (i.e., Yes or No pass), was statistically significant, $\chi^2(6) = 324.20, p < .001$, indicating that the combination of these variables predicts whether or not a community college student persisted unto graduation. According to Cox and Snell *R* Square and Nagelkerke *R* Square, respectively, the model accounted for between 18.8.% to 27.7%, of the variance in the persistence to graduation and correctly classified 74.3% of the cases in the data set. The non-significant Hosmer and Lemeshow test results, $p = .797$, further confirmed the model's adequacy for predicting the categorical outcome: persistence to graduation.

While the combination of the variables predicted whether a community college student persisted unto graduation, only one variable made a significant individual contribution in explaining persistence to graduation and the student's enrollment status (See Table 4 and the Wald test.) A student who was enrolled in his or her program part time was more likely to graduate, given the negative *B* coefficient for full-time students (as part-time students were coded “0” and full-time students as “1”).

Table 4.

Results of the Logistic Regression Analysis for Each Variable

Variable	B	S.E.	Wald	df	<i>p</i>	Exp(B)	Lower	Upper
Age	.004	.013	.09	1	.755	1.004	.978	1.031
Non-Minority (1= yes, 0=no)	-.206	.141	2.14	1	.143	.813	.617	1.072
Female (1= yes, 0=no)	-.076	.129	.34	1	.560	.927	.719	1.195
Veteran (1= yes, 0=no)	.179	.262	.46	1	.496	1.196	.715	2.000
Full-Time (1= yes, 0=no)	-.936	.150	39.20	1	<.001	.392	.292	.526
Success in remedial/developmental English (1= yes, 0=no)	-20.49	1988.16	.000	1	.992	.001	.001	.001

Note. **p* < .05

CHAPTER FIVE: CONCLUSIONS

Overview

The purpose of this quantitative, predictive correlation study was to examine how, if at all, community college students' veteran status, enrollment status, success in remedial/developmental English, and demographic variables correlate with persistence to graduation. The results of a binomial logistic regression demonstrated that of the combination of community college students' demographics (i.e., gender, age, race), veteran status (i.e., veteran or non-veteran), enrollment status (i.e., part-time or full-time), and success in remedial/developmental English (i.e., Yes or No pass) significantly predicted whether or not students' persisted unto graduation. While the combination of the variables predicted whether or not a community college student persisted unto graduation, only one variable made a significant individual contribution in explaining persistence to graduation, the student's enrollment status. Results demonstrated that a student who was enrolled in his or her program part-time was more likely to graduate. Veteran status did not individually, significantly contribute to explaining persistence to graduation. Success in remedial English did not individually, significantly contribute to explaining persistence to graduation. In addition, none of the demographic variables individually, significantly contributed to explaining persistence to graduation. This chapter discusses these findings and how the literature explains and illuminates them. Additionally, there is a discussion of limitations, implications, and recommendations for future research.

Discussion

This research study was designed to collect archival data so that the data could be analyzed to determine the relationship between a set of veteran and non-veteran students' student

variables and their persistence in a Virginia community college. In this study, the set of variables examined in relation to persistence were veteran status (i.e., veteran or non-veteran), enrollment status (i.e., full time or part time), success in remedial/developmental English, and demographics. As persistence was the focus of this study, theoretical models of persistence guided this inquiry. Tinto's model is most often cited and used in student persistence research (Metz, 2002). Congruent with Tinto's theory, this study's findings demonstrated that a combination of student characteristics (e.g., age, gender) coupled with academic integration variables (e.g., passing remedial English, enrollment status) influenced persistence. However, the small effect size for the analysis demonstrated that more research is needed to explore additional variables that predict persistence to graduation within this population of community college veteran and non-veteran students. This is not surprising as critics of Tinto have noted that strong empirical support for the application of the model to residential colleges and universities exists, while Tinto's model has only "modest" support for the role of social and academic integration in promoting "commitment to the institution" if students are commuter or community college students (Braxton et al., 2004, pp. 16-17).

Thus, this research supports the call that other researchers have made to the need for adding to the existing theoretical persistence models that often fail to adequately address the complexity of college persistence, particularly for marginalized or nontraditional learner populations, such as veterans and community college students (Braxton & Milem, 2000; Ford & Vignare, 2015; Park & Choi, 2008; Rovai, 2003; Wapole, 2007).

The findings also support the critics' statements about the shortcomings of traditional persistence models (Bers 1988, Halpern 1990, Tierney, 1992, Cabrera, Castaneda, Nora and Hengler, 1992). These critics are considered the first to propose Tinto's model could indeed

include two-year colleges, however, they went on to suggest new variables, such as college majors be included as effects on persistence.

Traditional persistence models are based on the assumption that a university was considered a single node, end-state with persistence or departure as the only two possible outcomes. As a result, the models do not adequately account for military learners' mobility or migration patterns that may result in multiple college transfers or the deployment-related stop.

Also, a most interesting finding of note is that the only individually influential variable associated with community college students' choice to persist to graduation was enrollment status. Other variables did not make significant, individual contributions.

Student-Veterans' Status

Within the analysis, each variable was individually examined. The Wald statistic produced as part of the binominal logistic regression demonstrated that veteran status does not individually significantly contribute to explaining persistence to graduation ($p=.496$).

The lack of significance is reasonable when it is considered that veteran students are often similar to their nontraditional student, non-veteran counterparts, both who have characteristics that often make persistence difficult. Both veteran and non-veteran community college students are often older, usually over 24 years old, and struggle to balance work, school, and family (Ford & Vignare, 2015; National Survey of Student Engagement, 2010).

Students' Enrollment Status

The Wald statistic produced as part of the binominal logistic regression demonstrated enrollment status does individually significantly explain persistence to graduation ($p<0.001$). The log odds change for part-time/full was $-.93$, which indicates that the odds of classifying a student who graduated is more likely if the student is part-time rather than full-time.

DeAngelo et al. (2011) found that today's college students take longer than the average time to finish their degrees, with associate's degrees that are generally two-year programs taking three years and bachelor's degrees that generally take four years now take five to six. This extended period to finish a study program may be a significant factor for nontraditional students and veteran students who also work and have families. Research on students' persistence has shifted from focusing on the institutional setting to identifying reasons for dropouts among learners (Feldman & Newcomb, 1969; Tinto, 1975). The focus shifted further to linking degree completion to drop-out rates and encouraging learners to continue enrollment (Mentzer et al., 2015; Pascarella & Terenzini, 1991). The shift finally returned to focusing on institutional settings, mainly in institutional actions (Tinto, 2010, 2012).

Most community college students are part-time. This finding aligns with research on community college students that suggested that intent is more important than enrollment status, and as long as students are enrolled in at least two classes their likelihood to persist increases. Some researchers have shown that only 36% of community college students attend full-time (National Center for Education Statistics, 2019).

Community college students tend to be older, working, and likely to interrupt their enrollments. So, while this finding may be counterintuitive, the finding illustrates that community college students may need to pave alternative pathways than traditional, 4-year residential college students use in order to persist. Attending college part-time may assist community college students in better balancing their responsibilities without becoming overwhelmed (Rockinson-Szapkiw, 2019). Research on other non-traditional college populations has demonstrated that concern about the ability to balance school, family, and work

responsibilities is often a reason for non-persistence (Brown & Nichols, 2012), and successfully integrating the work, family, and school is vital to persistence (Rockinson-Szapkiw, 2019).

Student Success in Remedial/Developmental English

The findings demonstrated that success in remedial English does not individually significantly contribute to explaining persistence to graduation. While numerous studies investigating the effect of placement in remedial coursework have been mixed, decades of research and studies, such as Hoyt's (1999, 2001), show that remediation has no significant relationship with persistence. Similarly, Adelman (2006) did not find a significant relationship between remedial courses taken and graduation. This study, then, revealed consistent findings with other studies demonstrating relatively no effect of remedial on student persistence (Bailey 2009; Bettinger, Boatman, and Long 2013; Kurlaender and Howell 2012; Levin and Calcagno 2008). According to the National Center of Education Statistics (2016), early research mainly focused on simple comparisons between remedial and non-remedial students. This indicated that more still need to be uncovered to build a deep understanding of the complex relationships between remediation and postsecondary outcomes. Identifying remedial courses is often difficult because there is no consistency across colleges with a defined definition of remedial courses and course descriptions.

Students' Demographics

The Wald statistics produced as part of the binominal logistic regression demonstrated that none of the demographics individually significantly explain persistence to graduation.

Some of the most frequently cited demographic data on current generation military learners comes from two national data sets that are somewhat dated, namely the National Center for Education Statistics (NCES) 2004/09 Beginning Postsecondary Students Longitudinal Study

(BPS: 04/09) and the 2007-2008 National Postsecondary Student Aid Study (NPSAS:08) (Ford & Vignare, 2015; Radford 2009; Radford & Wun, 2009; Radford, 2011). This data represented a cohort of military and non-military learners who entered higher education just before implementing the more generous Post-9/11 GI Bill (Ford & Vignare, 2015). The population of military undergraduates has been growing and is expected to be 10% of the campus population (Molina & Morse, 2015). The legal definition of a veteran is recognized by many organizations such as VFW, American Legion. Others are supported by Title 38 of the Code of Federal Regulations defines a veteran as “a person who served in the active military, naval, or air service and who was discharged or released under conditions other than dishonorable” (Code of Federal Regulations, 2020, p. 152). Military students were different than their traditional student counterparts in several distinct ways. They were older, usually over 24 years old, and combined work, school, and family. They were also more often enrolled as part-time students, supporting the research finding enrollment status individually, significantly explaining persistence. Military students also dedicated as much of their time to educational pursuits as their traditional peers, even though they had more work and family responsibilities (Ford & Vignare, 2015; National Survey of Student Engagement, 2010).

The results found in this study, which are not significant for the association of demographic variables with persistence, are consistent with findings from the extant literature (Reason, 2003). For example, findings researchers (Ford & Vignare, 2015; Radford 2009; Radford & Wun, 2009; Radford, 2011; & Reason, 2003) suggest that gender does not influence persistence or drop out were consistent here. Other researchers (Astin, 1971; Pascarella & Terenzini, 1978; Peng & Fetters, 1978) have suggested that it may. However, this is often when other demographic variables, such as race and ethnicity, are considered in tandem with gender.

Pascarella and Terenzini (1978) demonstrated that unique relationships between major, gender, and ethnicity or race occur that impact disenrollment. In addition, other researchers using national samples of students attending four-year colleges, and controlling for socioeconomic status, ambition, and past achievement, discovered greater persistence amongst Black students than White students (Astin, 1971; Pascarella & Terenzini, 1978; Peng & Fetters, 1978). Combinations of factors, therefore, at larger institutions may have an impact on persistence. This study did not look at other possible predictive variables, such as socioeconomic status or whether students who used student loans or grants in addition to their post 9/11 benefits, nor combinations of variables. This study only looked for single specific variables within the community college setting.

Implications

Many private and for-profit four-year institutions have studied veteran students (Hisada, 1988, Everett, 2017) to provide insight to veteran students' persistence. Tinto (1965, 1975, and 1993) made changes to his persistence model based on a review of the literature, examining selective private schools retaining students at a higher rate (57.6%) than open admissions institutions, such as community colleges (38.7%) (Everett, 2017). Stout (2018) indicated that 61% of the 6.2 million students in U.S. community colleges are there on a part-time basis because of family, work, or financial reasons. Veteran students occupy that population. This is why this current study adds to the existing knowledge of graduation persistence of student veterans attending a community college.

As veterans continue to transition from the military and enroll in community colleges to use their GI Bill benefits, colleges must understand how to provide support to a population of students with diverse backgrounds with complexities of different needs to graduation persistence.

The findings from this study can be used to strengthen program planning for veteran students, especially in the area of understanding the enrollment status of veterans mostly taking part-time courses of six to nine credit hours. This information can be useful to help advisors better meet the academic needs of this population, such as developing a more realistic class schedule that fits around students' work and family needs.

This study will allow colleges and veteran agencies to understand how veterans' demographics, veteran status, enrollment status, and success in remedial/English impact persistence. The data can help veteran agencies such as the Department of Veteran Affairs understand what factors play a role in veteran persistence. The information is of value because the Department of Veterans Affairs can better understand how military veterans are persisting with their academic access and what challenges they may face. The research states that many veteran students will enroll in colleges, but many will not complete their degree. This study found that enrollment status does individually significantly contribute to explaining persistence to graduation. Even though community colleges have been identified as promoting learners' success, their efforts are not adequate to guarantee the learner's success and persistence (American Association of Community Colleges, 2012).

Another implication is the ethical and moral obligation to support military veterans on their campuses by understanding how to best accomplish this. This study's data can provide community colleges with the necessary data to understand veterans' enrollment status at community colleges. This study found that when veteran and non-veteran students enrolled in community colleges as part-time, they were significantly more successful in completing their associate degree. Student success, persistence, and graduation rates are the student and higher education institution's responsibilities.

This study found that part-time enrollment does significantly individually determine enrollment persistence. An academic plan or a centralized, one-stop advising center that helps students plan out a part-time academic career may increase persistence. Understanding veteran persistence is problematic, and no guidance is given on how persistence should be interpreted among community colleges. Many factors can impact a student veteran enrollment trend. Most veteran students are older and may have more responsibilities than traditional students. Many veterans are parents working full-time jobs while going to school to support themselves and their families. Those barriers can impact how long it will take for student veterans to complete their degree plans. The normal time to degree completion for students attending full time was two years. According to Education Center for Statistics (2016), there are different lengths of time used to measure graduation rates: normal time (2 years), 150% (3 years) of normal time, and 200% (4 years) of normal time.

Finally, only one variable, students' enrollment status (part-time or full-time), made a significant individual contribution to understanding persistence to graduation. There is still much to learn about persistence because there can be different findings based on the methods and the variables being studied, especially in combinations of factors. One indicator is that student veterans could persist in their enrollment status by enrolling as part-time students; part-time is typically identified by enrolling in six to nine credit hours a semester. While several data sources exist to help understand completion rates (including institutional and non-institutional databases), this information is often incomplete because of the difficulty in tracking individual students across multiple institutions (Cook & Pullaro, 2010; Mikelson & Saunders, 2012).

Limitations

While the study is significant and provides insight into promoting persistence in veteran and non-veteran community college students, the study findings are limited and the minimized threats to internal and external validity there were a few that must be discussed which will provide insight into areas for future study. The threats involved the type of data used, how the data was collected, and the sample size. The study used archival data from a single-community college, making the findings limited in generalizability beyond this specific college. Archival data was used because it was convenient and identified many of the data of interest of this study. While the data that was used were of interest, there were limitations. Using archival data does not allow for directly responding to the research questions. Further investigation needs to be done at other community colleges, such as programs designed for veterans like Cybersecurity. The importance of looking at other community colleges with a more diverse study body will improve the overall demographics of the findings. This study limited its scope to examining students in residential programs. This study could be expanded to online programs.

The use of a correlational study and a regression also means that only correlational, not causal, inferences can be drawn. Instrumentation may also be a limitation as the use of archival data limited the scope of variables examined. The data set used identified veteran and non-veterans who enrolled in remedial/developmental English in the fall 2016. This limited the overall quality of the sample and generalizability of the results by looking at only one remedial/developmental course. Most certainly, a myriad of other variables may predict retention that was not considered here. For example, recent research demonstrates that self-regulated learning includes cognitive, metacognitive, behavioral, motivational, and

emotional/affective aspects of learning (Panadero, 2017). Self-regulated learning focuses on a few variables that will impact learning. For example, self-efficacy, volition, and cognitive strategies are studied. These variables may influence persistence and could be added to future predictive models that examine students' learning.

The diversity across case studies was another limitation as most cases were minorities (n=1156; 74.4%) with an average age of 21.46 (SD=6.94); only 226 of the cases analyzed were veterans, and only 399 (25.7%) in the sample persisted unto graduation. The lack of diversity in the sample may perhaps explain some of the insignificant finding in this study; only one research hypothesis was significant out of four. Future studies may only focus only on veterans.

The regression model used to predict persistence only determined one variable individually, significantly contributed to explaining persistence to graduation. The study's other variables, demographics, veteran status, and students' success in remedial/developmental English, did not adequately predict the categorical outcome of whether or not community college students persist unto graduation because of any of these individually. A future study using a combination of variables may show a clearer indication of prediction of persistence.

A follow-up study analyzing both types of remedial classes, English and math, at another community college would address the challenge to internal validity broaden the population sample size and would bring clarity to the individual results for each variable. This study only analyzed remedial English.

A follow-up qualitative and phenomenological study examining veterans who persisted using surveys, interviews, or focus groups would collect more data about students' experience enrolled in community colleges to determine graduation persistence's predictability role. This

method would allow for the survey to be custom designed and focus group questions constructed to ask for more in-depth responses about student veteran needs for persistence. In this way, student veterans enrolled would respond to the specific question relating to enrollment and their experience in the community college.

More complex modeling and analysis could be conducted, although the logistic regression analysis provided a useful tool for modeling the dependence of the binary variable, persistence, on the multiple variable and identifying individual contributions. The analysis does not allow for complex modeling in which interactions among independent variables are explored. Path analysis and SEM would provide data on interactions.

Recommendations for Future Research

This study was the first step to analyze veterans' graduation persistence attending a two-year community college. Future research can expand by looking at students' veteran experience, social-economic issues, multi-site education, and personal surveys. Recommendations for future research from the current research literature are summarized in the following table (Table 5).

Table 5.*Summary of Recommendations for Future Research*

1. Future research is needed to understand veterans' graduation persistence at community colleges. The demographics variables in this study can be expanded to include income and marital status.
2. To further understand veterans' graduation persistence at two-year community colleges, other studies should collect data from two or more colleges to strengthen the findings.
3. To better understand graduation persistence at a two-year community college, surveys would collect student support and experience data. The current study used existing data; therefore, collecting data on student experience and support was not included in the findings.
4. This study conducted a quantitative study analyzing community college veterans using existing data. Gaps in this study can be strengthened by qualitative research with interviews, focus groups, and surveys.
5. Future research can expand on veterans' financial support in addition to veterans' post 9/11 benefits; understanding financial support could determine graduation persistence.
6. Future research can expand on veteran academic support services at a two-year community college.
7. The current study focused on veterans' success in remedial/developmental English. Future research can expand veterans' success in remedial/developmental English and math to strengthen the research.
8. Future research can examine community college veterans taking classes on campus compared to those taking classes online to better understand persistence.

Conclusion

This study was exploratory and demonstrated that there is more to understand about veterans' and non-veterans' graduation persistence. The study indicated that the combination of

demographic variables, veteran status, enrollment status, and success in remedial/developmental English did not predict the categorical outcome of whether or not a student graduates with an associate's degree from a community college with statistical significance. However, only one variable was found (enrollment status) that had direct bearing on persistence; however, the effect size for the findings was small. This might indicate that additional variables and interactions between variables needed to be further explored to understand this phenomenon fully. Future qualitative, phenomenological research could examine veterans' experience with persistence in community colleges, using both part and full-time students as subjects. This would provide a more in-depth look at what factors are actually contributing to persistence as seen through the experiences of specific veteran students. Additional variables, guided by research and theory, can be added to the model presented here and examined using more complex statistical analyses to understand interactions between and among variables and their relationship to persistence.

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APPENDICES

APPENDIX A.

Liberty University's IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

June 15, 2020

Takesha McMiller Joseph Fontanella

Re: IRB Application - IRB-FY19-20-386 THE RELATIONSHIP BETWEEN VETERAN AND NON-VETERAN PERSISTENCE AND DEVELOPMENTAL COURSEWORK IN A VIRGINIA COMMUNITY COLLEGE

Dear Takesha McMiller, Joseph Fontanella:

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study does not classify as human subjects research because: (1) it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu. Sincerely,

G. Michele Baker, MA, CIP

Administrative Chair of Institutional Research

Research Ethics Office

APPENDIX B**Office of Institutional Effectiveness and Student Success Approval Letter**

[Name of Institution Redacted]

August 4, 2020

Dear Ms. McMiller,

Your proposal to research analyze the rates of persistence to matriculation between veteran and non-veteran students to identify whether remedial English affects persistence for all students has been approved. Participation in any research project is purely voluntary. Please make sure the participants are aware of their options. You agreed to provide us research findings once complete. Any future research connected to this or other research will need to be submitted to us for approval.

Please feel free to give me a call if you have any questions.

Sincerely,

[Name of authorizing official redacted]