

NATIONAL VETERAN EDUCATION SUCCESS TRACKER

A Report on the Academic Success of Student Veterans
Using the Post-9/11 GI Bill



This work was funded by grants from Google, Inc., The Kresge Foundation, and Lumina Foundation. The study is a public-private partnership among Student Veterans of America, the National Student Clearinghouse, and the U.S. Department of Veterans Affairs' Veterans Benefits Administration.

National Veteran Education Success Tracker (NVEST) Project Report

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Keywords: (1) Student veterans, (2) Post-9/11 GI Bill (3) Completion Rates—Student veterans, (4) Degree fields—Student veterans, (5) GI Bill—Outcomes

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Published 2017 by Student Veterans of America
1012 14th St NW, Suite 1200; Washington, DC 20005-3408
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Suggestion citation: Cate, C.A., Lyon, J.S., Schmeling, J., & Bogue, B.Y. (2017). *National Veteran Education Success Tracker: A Report on the Academic Success of Student Veterans Using the Post-9/11 GI Bill*. Student Veterans of America, Washington, D.C.

ACKNOWLEDGMENTS

STUDENT Veterans of America thanks our generous funders and partners for supporting this historic project. Without their steadfast commitment to the success of student veterans, this initiative would not have been possible.

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This report was reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments to assist the authors in making the published report as sound as possible, and to ensure that the report meets the standards of the field. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process.

Student Veterans of America would also like to acknowledge and thank the contributions of Dr. Shelley MacDermid Wadsworth from the Military Family Research Institute (MFRI) at Purdue University, and Dr. Nicholas J. Armstrong and Rosalinda V. Maury from the Institute for Veterans and Military Families (IVMF) at Syracuse University for volunteering their time as independent reviewers for this report. Their time, expertise, and critical feedback are greatly appreciated and improved the quality of this report.

Although these reviewers provided constructive comments and suggestions, they were not asked to endorse this report's conclusions and any recommendations associated with the report, nor did they see the final draft of the report prior to its release. Responsibility for the final content of this report rests entirely with the authors and the organization.

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Dr. Chris Andrew Cate is Vice President for Research at Student Veterans of America. Dr. Cate earned a Master of Arts in Research Methodology in 2009 and a Doctorate in Special Education, Disability, and Risk Studies in 2011 from the University of California at Santa Barbara. His dissertation was one of the first studies to focus on Post-9/11 student veterans' academic performance, factors influencing student veterans' academic performance, and utilization of on-campus services. After volunteering for two years as Director of Research, Dr. Cate joined the SVA staff in September 2012 to continue his research into student veterans' post-secondary academic success and the positive effects of peer-support for veterans in higher education. This research led to the Million Records Project (MRP), the first research project to report the post-secondary outcomes of nearly one-million student veterans. The findings from the MRP established the foundation for the National Veteran Education Success Tracker (NVEST) Project, expanding the results and applying it to student veterans who used the Post-9/11 GI Bill benefits. He is an alumnus of Gonzaga University, a California native living in Arlington, Virginia, and his father, Gene, served in the Marine Corps Reserves.

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EXECUTIVE SUMMARY

AMERICA has helped service members transition from military to civilian life through the transformative power of education since World War II. This transition has been facilitated primarily through the GI Bill, a federal education benefit program administered by the Department of Veterans Affairs, which started in 1944. Since then, Congress enacted six versions of the GI bill to help service members afford college and earn a post-secondary certificate or degree, with the most recent expansion taking place through the Post-9/11 Veterans Educational Assistance Act of 2008—better known as the Post-9/11 GI Bill. The Post-9/11 GI Bill represented the largest expansion of education benefits since the World War II-era GI Bill, thus subjecting it to intense scrutiny as to its efficacy in producing academic outcomes on par with its predecessors.

The National Veteran Education Success Tracker (NVEST) Project is the first comprehensive in-depth study of the academic success of the modern student veteran using the Post-9/11 GI Bill. Past research into previous versions of the GI Bill have shown academic success for veterans, however they were limited in scope, methodology, and timeliness. More recent data collection (performed after 2010) that occurred before the NVEST Project was limited by methodology, a lack of collection capability, and reliable data. The NVEST Project sought to answer two simple questions: How well do student veterans who used the Post-9/11 GI Bill between August 2009 and December 2013 perform in post-secondary education and is the Post-9/11 GI Bill worth taxpayers' continued support?

What the NVEST Project demonstrates is that today's student veterans, using the Post-9/11 GI Bill, perform better than their peers and that federal investment in higher education through this program is producing demonstrable results. Through analyzing nearly one million individual veteran records, the NVEST Project demonstrates that student veterans using the Post-9/11 GI Bill are more likely to graduate. Student veterans prefer to attend public or nonprofit schools while seeking academically rigorous degrees in the fields of business, the health professions, science, technology, engineering, and mathematics. In the first six years, the Post-9/11 GI Bill has funded nearly 450,000 post-secondary degrees or certificates and—at current funding levels—will pay for approximately 100,000 degrees each subsequent year.

The NVEST Project Report that follows will demonstrate the compelling public need for continued research by showcasing a review of past research, the project's methodology, and the academic success outcomes of those using the Post-9/11 GI Bill compared to their peers.

INTRODUCTION

SINCE 1944, the GI Bill has helped generations of veterans transition from military service to the civilian workforce through education benefits. The Post-9/11 GI Bill is no different, and constitutes a significant investment by the United States taxpayers in the future of the Post-9/11-era veterans and their contribution to the national economy. The investment in the Post-9/11 GI Bill has generated discussion from policy makers, stakeholders, and with the public regarding its return on investment (ROI).

THE GI BILL ALLOWED ME TO PURSUE MY EDUCATIONAL GOALS THAT WERE PUT ON HOLD WHEN I ENLISTED IN THE MILITARY. I TOOK THE SKILLS GAINED DURING MY SERVICE, SUCH AS TIME-MANAGEMENT AND DISCIPLINE, AND APPLIED THEM TO ACHIEVING A COLLEGE DEGREE.

— JENNIFER HAYES,
STUDENT VETERAN AT
THE UNIVERSITY OF
WEST FLORIDA

Traditionally, discussions and measurement surrounding the GI Bill's impact and effectiveness have focused on its economic impact and the amount of revenue it added to the economy compared to the cost. This metric requires decades for the earnings and employment data to appear in the economy and longer to collect, analyze, and report. While this measure may be the most valid metric for the GI Bill's ROI, it does not provide policy makers, stakeholders, and the public's current ROI and results they can use to judge the value of the GI Bill and make data-driven decisions. Student Veterans of America (SVA) recognized this information gap and developed new methods and more immediate indicators of the GI Bill's ROI, which resulted in the partnership with the Department of Veterans Affairs (VA) and the National Student Clearinghouse.

Traditional economic impact studies are only one measure of the GI Bill's ROI, post-secondary degree completion and attainment is also a ROI measure and is more immediate, easier to collect and analyze data on, and a key indicator to the GI Bill's potential economic ROI. The National Veteran Education Success Tracker (NVEST) Project was developed to provide a current measure of the Post-9/11 GI Bill's ROI by researching the postsecondary academic progress and outcomes of student veterans using the Post-9/11 GI Bill. Other ROI metrics, such as accumulation of education debt, projected lifetime earnings, and returned revenue to the government, are also important and can add value to the discussions of GI Bill's ROI, as data for these metrics tend to take years and sometimes decades to collect and analyze. On the other hand, post-secondary academic progress and completion is more immediate and can be used as the foundation for the economic ROI metrics.

This report summarizes initial findings from the NVEST Project, a public-private partnership integrating data containing VA education benefits with data containing postsecondary enrollment and degree completion from the National Student Clearinghouse. The report answers two simple questions regarding the Post-9/11 GI Bill: How well do student veterans who used the Post-9/11 GI Bill between August 2009 and December 2013 perform in post-secondary education and is the Post-9/11 GI Bill worth taxpayers' continued support?

GI Bill's Return on Investment Criteria

The ROI research on student veterans in previous iterations of the GI Bill program has focused largely on the economic impact and the amount of revenue returned to the economy by student veterans who used the GI Bill. Data collection, analysis, and reporting of these economic effects typically takes years or even decades after the GI Bill statutorily ends (Angrist, Chen, & Song, 2011; Committee on Veterans Affairs, 1972; Educational Testing Service, 1973; Stanley, 2003; United States Veterans Administration, 1976; Veteran Administration Press Release, 1964). Consequently, these conclusions are of minimal use to policy makers, stakeholders, and the public because they are outdated and not applicable to the current

generation of student veteran beneficiaries. However, other indicators connected with the GI Bills' ROI can be measured while the current Post-9/11 GI Bill is still active, such as postsecondary progress and completion, as well as accumulation of education debt. Both of these factors offer insight into the potential long-term ROI of the Post-9/11 GI Bill.

Postsecondary Progress and Completion. The most widely used and common postsecondary metric is a student's progress toward, and completion of, a certificate or degree. Federal and state Departments of Education, local institutions, and postsecondary researchers use this metric for measurement, assessment, and evaluation of postsecondary programs and policies. This metric is easily defined and measured—post-secondary completion is the moment that a student has fulfilled all requirement to be conferred a certificate or degree by a college or university. Also, this data can be collected and reported by the college and universities in near real-time. Finally, degree attainment is an indicator of future earnings for the individual.

The College Board has produced several reports on the relationship between postsecondary education and subsequent wages (Baum, Ma, & Payea, 2013). In 2013, the College Board reported that individuals with higher levels of education earned more and were more likely to be employed compared to their counterparts with lower levels of education. Specifically, in 2011, those with a bachelor's degree earned a median \$21,100 more per year than those with only a high school diploma. This increase in income also extended to those with some college, but no degree. This group earned 14 percent more in 2011 than those with only a high school education, and their median after-tax earnings were 13 percent higher. The report also found earning a postsecondary degree helped offset the loss of being out of the workforce while going to school. A traditional college student (enrolls in college at age 18 and graduates with a bachelor's degree by age 22) will earn enough by the time they are 36 to compensate for being out of the labor force.

The College Board research and reports show a strong connection between postsecondary progress and completion with a higher living wage and life-long earnings. Therefore, earning a post-secondary certificate or degree is an important factor to any discussion concerning the Post-9/11 GI Bill's ROI as achieving this milestone will have a significant impact on a veterans' lifelong earnings.

Accumulation of Education Debt. The enactment of the Higher Education Act (HEA) of 1965 established a federal education loan program that college students have used to help finance their postsecondary education. The amount postsecondary students borrow in student loans is based not only on their present income but also on future "permanent" income. Borrowing through student loans is designed to normalize a postsecondary student's financial needs over time until the "permanent" income has been established. In other words, the individual is betting on their future income when assessing their current financial needs and

whether to accrue education debt and to what amount. Individuals are betting their future “permanent” income will cover the expense of the purchase of their education.

One myth surrounding the Post-9/11 GI Bill is that it allows veterans to earn a post-secondary certificate or degree without accumulating any education debt. Student veterans receiving Post-9/11 GI Bill benefits may take out student loans or pull from their savings to address any unmet financial need. More research is still needed to measure the number of student veterans who take out student loans and the amount they owe upon graduation to fully understand the size, scope, and impact of this topic. The Post-9/11 GI Bill provides robust benefits that mitigate much of the expenses connected with earning a certificate or degree, however many student veterans still complete college with student loans that may negatively impact their ability to save or invest in their future.

Research has found that large amounts of education debt may have a significant, negative impact on life-choices (e.g. marriage, children, home ownership, etc.) for the individual (Cho, Xu, & Kiss, 2015; Hiltonsmith, 2013). Hiltonsmith (2013) found that an average education debt burden of \$53,000 for a married couple with bachelor’s degrees who owned their home had lower retirement savings and home equity.

The effect of education debt on student veterans’ ability to save for retirement and build equity on their homes may be amplified. Student veterans may carry their education debt with them later in life than traditional students because they are often older when they enroll in college. Therefore, learning the amount of education debt student veterans have when they graduate can be helpful in predicting their ability to purchase homes and save for retirement, another strong factor in discussing the Post-9/11 GI Bill’s ROI.

GI Bill Users’ Lifetime Earnings. As the term suggests, lifetime earnings is the amount an individual earns through employment and investments over the course of their working years, excluding full-time schooling and retirement. It differs from annual earnings in that annual earnings only account for a specific year of an individual income. Economists find a benefit in using lifetime earnings in contrast to annual earnings because lifetime earnings are a better approximation of economic well-being during working years and a better correlation of desired economic status in retirement. In addition, the use of lifetime earnings may help identify individuals and groups who are saving too little.

Including GI Bill users’ projected lifetime earnings in the discussion of the Post-9/11 GI Bill’s ROI adds an aspect of predictive analysis and potential comparison to other groups into the discussion. If the projected lifetime earnings of GI Bill users are on par with or above their counterparts, then it indicates that the GI Bill’s ROI may be high as these individuals are experiencing higher economic well-being, saving more, and will have a better economic status. If GI Bill users’ lifetime earnings are lower than their counterparts’, then the opposite may be true.

Revenue Returned to the National Economy. The last factor in the discussion surrounding the Post-9/11 GI Bill's ROI is the most widely known, but the longest to calculate—the revenue that is returned to the national economy. This data typically takes decades to accurately and reliably collect and analyze, but it is also the clearest and strongest measure of the Post-9/11 GI Bill's ROI. When discussing the amount of money returned to the economy, this should not only include the amount collected through income taxes, but also savings to the government as well, such as savings from unemployment benefits because the veteran is employed.

Closing

The NVEST Project focuses on the first pillar of measuring the GI Bill's ROI: college progress and completion. This first of three NVEST Project reports, planned for release in 2017, examines and describes the high level postsecondary academic outcomes (e.g. persistence and completion) of student veterans using the Post-9/11 GI Bill. This report also explored the number of degrees, their degree level and types the Post-9/11 GI Bill has produced in the first six years since it was enacted. This does not mean that the other factors of the GI Bill's ROI should not be investigated and reported upon, as the taxpayers who invested in the Post-9/11 student veterans through the GI Bill deserve updates on the return on their investment.

LITERATURE REVIEW

THERE has been a small amount of data collection and analysis on student veterans' postsecondary progress and outcomes, especially when compared to other student groups. Also hindering this research field is that much of the research examining student veteran and military-connected (e.g. service members and dependents) students' academic progress and outcomes are conducted years, or in most cases decades, after the student veterans first enrolled in college. The lack of timely and accurate data has restricted the ability for policy makers, stakeholders, and the public to make well-informed decisions about student veterans and the return on investment of the GI Bill.

This literature review is separated into two parts. The first part will summarize the limited research on student veteran postsecondary academic progress and outcomes for each GI Bill era. This will provide a historical context for the discussion of the results. The second part of the literature review will examine data frames containing data on student veterans and military-connected students. This part will summarize what data is collected and barriers in both using the data to measure student veterans' post-secondary academic progress and outcomes and integrating the data frames to increase efficiency, accuracy, and efficacy.

This section will end with a description of the NVEST Project. This will provide a rationale for the development of the project, its utility in measuring student veterans' academic progress and outcomes, and its benefits to stakeholders, policy makers, and the public.

Historical Overview of Student Veterans' Postsecondary Academic Outcomes

World War II GI Bill. The first two versions of the GI Bill, after World War II and the Korean War, have been extensively researched and reported for both the academic outcomes and impact to the U.S. economy (Altschuler & Blumin, 2009; Humes, 2006; Olsen, 1974). This is mostly due to the large amount of time that passed from when these laws were originally enacted, resulting in decades of effects to be observed, recorded, and released. Ten years following the end of World War II, 15.7 million veterans returned to civilian life, and by the time the World War II-era GI Bill ended, 12.4 million (78 percent) of those veterans directly benefited from the GI Bill either through its education benefits, unemployment benefits, or housing and small business loans (Altschuler & Blumin, 2009). An estimated 8 million veterans, over half of eligible World War II veterans, utilized the GI Bill to finish high school, earn a vocational certificate, or attend college (Humes, 2006).

The effect the World War II-era GI Bill had on our nation and economy is well documented and well known amongst policymakers. The GI Bill funded the educations of 22,000 dentists, 67,000 doctors, 91,000 scientists, 238,000 teachers, 240,000 accountants, and 450,000 engineers, as well as three Supreme Court justices, three presidents, a dozen senators, 14 Nobel Prize winners, and two dozen Pulitzer Prize Winners (Humes, 2006; Olsen, 1974; Veteran Administration Press Release, 1964). The impact to the nation's economy was just as significant, nearly thirty years ago, a Congressional Report by the Subcommittee on Education and Health of the Joint Economic Committee (1988) estimated that for every dollar spent on the first GI Bill, seven dollars were returned to the nation's economy.

Korean War-Era GI Bill. Less than five years after the end of World War II, the Korean War sent millions of new men and women into combat. Congress authorized a new GI Bill to address the post-combat needs of this new group of veterans. Using the World War II GI Bill as a guide, the Korean War-Era GI Bill sought to fix several of the perceived excesses and abuse of the first GI Bill. Instead

of paying the school or institution directly, the benefit would go directly to the veteran to pay for the program of their choice. These payments to the veteran combined tuition, books, and living stipend give the veteran the responsibility to budget their benefit according to their needs and academic goals.

Similar to its predecessor, the response to the Korean War-Era GI Bill was enthusiastic. Within five years of the GI Bill's passage, two million out of approximately 5.3 million eligible Korean War veterans used educational benefits (Committee on Veterans Affairs, 1972). Stanley (2003) analyzed the impact of the Korean War-Era GI Bill on the education levels of the Korean War veterans. He found the GI Bill increased the time in postsecondary programs by an academic term, and increased the likelihood of graduation by five to six percentage points, however Stanley also found differences in these results based on the veterans' pre-service socio-economic status.

Vietnam Era Student Veterans. On March 3, 1966, President Lyndon B. Johnson signed the Veterans Readjustment Benefits Act of 1966, commonly referred to as the Cold War-Era GI Bill. This version marked a drastic change in policy for VA education benefits. The previous GI Bill programs were established as compensation to veterans for their wartime service. However, the Cold War-Era GI Bill extended benefits to veterans serving in times of both war and peace.

The mid-1960's saw the "Baby Boomers," children born immediately following the end of World War II, begin to enroll in college. In addition, in 1965 as part of President Johnson's "Great Society" domestic social programs, the Higher Education Act was established, providing federal financial aid for students and their families to afford college. It was the first time that a nationwide financial aid program competed with the GI Bill.

During this time the effects of the previous GI Bill programs were felt in other areas of American society. The increase priority of postsecondary education in the workforce impacted the U.S. military as well, as the level of education for enlisted service members increased to reflect the general population (Educational Testing Service, 1973). From World War II to the Vietnam War the percentage of veterans without a high school diploma was cut by more than half, from 54.6 percent to 20.2 percent, respectively. In addition, the percentage of veterans between the ages of 25 and 29 with four years of more of college nearly tripled between the World War II veterans and Vietnam War veterans from 11.0 percent to 31.7 percent, respectively.

Similar to its predecessors, research suggests Vietnam War veterans benefited both academically and economically from the GI Bill. A VA report in 1976 found Vietnam Era student veterans using the GI Bill had high rates of completion and degree attainment (United States Veterans Administration, 1976). Of the veterans surveyed for the report approximately two-thirds of full-time student veterans completed their postsecondary programs. The report notes that at the time of its publication, several part-time student veterans were still enrolled and persisting in their postsecondary programs, suggesting that the overall completion rate for this GI Bill cohort would be higher. A more recent study explored the

long-term impact of Vietnam War military service on both schooling and age-earnings (Angrist, Chen, & Song, 2011). The study found similar schooling gains for Vietnam Veterans compared with earlier research on WWII and Korean War veterans, likely due to the Vietnam War-era GI Bill. As for earning, the research suggests that any loss of earnings due to lost work experience because of military service was off-set by the benefits in schooling from the GI Bill.

Veterans Educational Assistance Program (VEAP) and the Montgomery GI Bill (MGIB). The end of the draft in 1973 did not end the GI Bill. Rather, the GI Bill became an inducement tool for enlistment into an all-volunteer military under the Veteran Education Assistance Program (VEAP). Three key changes were made when VEAP was established. First, the previous GI Bill programs were made available to all veterans who served and met discharge requirements. However, VEAP was only intended for those service members who chose to buy in to the program. The service member, upon electing to enter into the program, was required to contribute their military pay into the program with the Federal Government matching \$2 for each \$1 the service member contributed. A final key change to the GI Bill was a cap on the benefit. This meant there was no guarantee that VEAP would cover the full cost of the student veteran's tuition, and any deficit in that cost was the responsibility of the student veteran. In 1984, Mississippi Congressman Gillespie V. "Sonny" Montgomery revamped the GI Bill. The Montgomery GI Bill (MGIB) kept the same structure and pay-in requirement for the benefit. In addition, under the MGIB program reservists meeting certain eligibility criteria could also pay into a separate version of the MGIB.

Compared to its predecessors, little research has examined the academic and economic effects VEAP or MGIB has had on veterans. The Million Records Project (MRP), a recent study examining completion rates of student veterans in the Post-9/11 GI Bill area included MGIB beneficiaries in their sample (Cate, 2014b). Half (500,000) of MRP's sample had initially used the MGIB exclusively or with other VA education benefits. The project found that 57.8 percent of student veterans who exclusively used the MGIB completed a postsecondary degree (vocational certificate or higher) and 59.7 percent of those that used the MGIB and other VA education benefits completed a postsecondary degree.

National surveys. National level surveys also provide insight into the academic progress and outcomes of our nation's veterans. The 2010 National Survey of Veterans (2010 NSV; Department of Veterans Affairs, 2010), conducted by Westat for VA, examined and elicited feedback from VA beneficiaries on VA programs and services, including VA education benefits and programs. Another national survey, the 2012 American Community Survey (ACS; U.S. Census Bureau, 2012) conducted by the U.S. Census Bureau, collects information on a wide range of demographics, including age, sex, income and benefits, education, and veteran status.

2010 NATIONAL SURVEY OF VETERANS. The 2010 NSV supports the existant research showing positive and strong student veteran academic progress and outcomes. In the 2010 NSV's section regarding education benefits, the survey asked veterans about degree or program completion. According to the results, 63 percent of survey respondents reported that they completed the postsecondary educational or vocational program for which they used their VA educational benefits (Department of Veterans Affairs, 2010). Further in-depth analysis of the 2010 NSV by service era found that the 45-year period between the end of the Korean War and Sept. 11, 2001 shows a stable postsecondary completion rate between 66 and 68 percent. Although lower compared to the other service eras, a majority of the participants (51.1 percent) in the 2010 NSV who reported serving after Sept. 11, 2001 also reported the completion of their postsecondary educational or vocational training program (Cate, 2014a). While this may signal concern to some that the current generation of student veterans are not doing as well as their predecessors, caution should be exercised in hastily interpreting this result. The data collection period for the 2010 NSV concluded in the late summer/early fall of 2009, prior to the beginning of the Post-9/11 GI Bill. The effects of the more robust education benefits associated with the Post-9/11 GI Bill are not covered in the 2010 NSV. In addition, at the time of data collection, veterans in the sample could still be experiencing the residual impact of multiple deployments and disruptions to their postsecondary enrollment due to continued military service and duty orders. It is highly likely that the completion rate will increase as time passes and more student veterans are given time to complete their postsecondary programs.

Although the 2010 NSV indicates a high student veteran postsecondary academic progress and outcome, the results become less compelling upon further examination, such as investigations into the completion rates of veterans who separated from the military after September 11, 2001. The sample size for this group of student veterans is extremely small, limiting its ability to generalize to the entire Post-9/11 era student veterans, thus yielding weak, generalizable conclusions for this group of student veterans. Another flaw is the survey's reliance on self-reported data, which is a common survey weakness that can lead to imprecise results. An individual might misunderstand a question or the directions and unintentionally provide an inaccurate response. In addition, the survey relies on a single question to measure completion, raising questions of reliability. It asks the respondents if they have completed the program for which they have used VA education benefits. The broad question can be interpreted in a variety of ways, such as participants replying "no" if they finished their program after having used all of their benefits. This question also does not include the possibility of student veterans' completing their vocational and educational programs without use of their VA education benefits. This again may lead to a response error that affects the final results.

AMERICAN COMMUNITY SURVEY. A benefit of examining the data in the ACS is that it collects data on both veterans and nonveterans as well as education

level. This allows for comparisons of education level between the veterans and nonveterans within the U.S. population. While the question does not specifically ask about postsecondary completion, the highest education level questions that are reported can serve as a proxy for postsecondary academic outcomes.

At first examination, the 2012 ACS shows veterans education levels slightly lower in comparison to the nonveteran population (29.3 percent to 26.7 percent, respectively). However, the ACS also has several flaws in tracking student veteran outcomes. First, participants are asked to describe their highest level of education attained. Respondents have a predetermined list of potential answers and the ACS combines “some college” and “attainment of an associate’s degree” into one category, which makes it difficult to ascertain whether the person attained an associate’s level degree, withdrew from college, or is still enrolled in a postsecondary program. Second, the ACS does not include a question regarding vocational or on-the-job training programs, which veterans can use their VA education benefits to attend. It is unclear whether student veterans would equate these programs as “some college” or choose “high school diploma only.” Last, the ACS does not have sufficient data on veterans’ military service. Without this information, it is not possible to determine when a student veteran separated from the military and started their postsecondary studies, making it difficult to conduct detailed analysis on student veteran postsecondary academic progress and outcomes. As a result, researchers cannot ascertain with certainty whether or not the small difference between the two groups’ education levels remain stable across all age groups.

Current Trackers of Student Veterans’ Academic Progress and Completion

Contributing to the confusion regarding student veteran postsecondary academic outcomes is the fact that national-level data on student veterans have been difficult to collect, analyze, and interpret due to poor collection methods, narrow inclusion criteria, and errors in identifying student veterans. Most traditional national postsecondary databases exclude a portion of the student veteran population while including other military populations, which makes accurately analyzing student veteran postsecondary academic outcomes difficult at best.

Department of Defense (DoD). The Department of Defense (DoD) is the first department that student veterans and military-connected students enter into, where a civilian becomes a service member, whether active duty, Guardsperson, or Reservist. Regardless of branch or duty status, service members receive training in a variety of areas and are instructed on and work with the latest technology to do their jobs. Some active duty service members have the option to pursue postsecondary degrees and certificates, while National Guard personnel and Reservists may attend colleges and universities full-time when not on active duty.

DoD provides a limited amount of funds to support service members’ postsecondary education through its Tuition Assistance (TA) Program. The TA

Program is a Public Law implemented by DoD Directive in conjunction with DoD Instruction which provides financial assistance for voluntary off-duty civilian education programs in support of a service member's professional and personal self-development goals. TA is available to service members regardless of rank on active duty or reserve service members on active duty.

DoD tracks service member enrollment and course completion as long as the service member is using TA funds to pay for the course. If service members exclusively use other funding, such as out-of-pocket, state funds, or Title IV funds, to pay their tuition and fees, then DoD will not have a record of the course nor whether the service member completed it. In addition, DoD does not follow the service member once they have fully separated from the military. The benefit of DoD records is their ability to identify all individuals with military service, past or present. However, DoD is restricted in the degree to which they collect or keep records of service member's postsecondary enrollment or completion, only tracking course completions or degree and certificate attainment as it is related to use of TA funds.

Department of Education (ED). The Department of Education (ED) has collected post-secondary students' academic progress and completion rates for more than 50 years, through a variety of surveys and data reporting systems. The U.S. Department of Education manages the National Center of Education Statistics (NCES), which tracks postsecondary student academic outcomes. The NCES maintains several databases, such as the Integrated Postsecondary Education Data System (IPEDS), that contain data on postsecondary students, as reported by institutions of higher education and financial aid records. However, many of the NCES databases do not properly identify and track students who are veterans, making it difficult to interpret these results due to weak sampling methods.

IPEDS, the database most frequently used to report postsecondary student outcomes, is a collection of interrelated annual surveys sent to every college, university, technical, and vocational institution that participates in federal student financial aid programs. These schools are required to report data on enrollments, program completions, graduation rates, and institutional data. However, IPEDS mostly focuses on data collection of traditional students, excluding a large proportion of student veterans and military-connected students.

The National Postsecondary Student Aid Study (NPSAS) is a second NCES database that contains a limited amount of information about student veterans, due to its instrumentation. The NPSAS is a comprehensive research dataset on postsecondary student demographics, financial aid, and enrollment. The primary weakness of the database is in the method used to identify student veterans. NPSAS uses the Free Application for Federal Student Aid (FAFSA) in classifying samples as active duty service members or veterans; student interviews and institutional records supplement the data. The 2016 FAFSA contains two questions about military service: 1) "Are you currently serving on active duty in the U.S. Armed Forces for purposes other than training?" and 2) "Are you a veteran of the U.S. Armed Forces?" These questions misclassify several categories of military-

connected students. For example, a reservist could be activated and deployed, return home to reserve status, and retain that status while attending school. The reservist would be eligible for VA education benefits, but would not be classified as “currently serving on active duty” or as a “veteran of the Armed Forces” on the FAFSA and would therefore not be flagged as a student veteran in NPSAS. A second example is a service member in the Inactive Ready Reserve who is in the process of separating from the military after serving on active duty. If enrolled in college, this service member would be misidentified as a nonveteran in the NPSAS based on their likely responses to the FAFSA indicating that they are neither a veteran nor serving on active duty.

Tracking student veteran outcomes using FAFSA-related identifiers can also exclude student veterans because GI Bill and other veteran education benefits are not connected with ED’s Title IV financial aid guidelines under the Higher Education Opportunity Act (HEOA, 2008). As a result, student veterans are not required to complete and submit a FAFSA to receive GI Bill benefits. Those that do not complete and submit a FAFSA are excluded from the NPSAS database and any follow-up interviews related to the study.

Furthermore, ED uses a very broad definition of “veteran education benefits” (HEOA § 420(c), 2008). Under Title IV of the HEOA, veteran education benefits not only include GI Bill benefits, but also Reserve Officer Training Corps (ROTC) scholarships, Department of Defense Tuition Assistance program funds, and Survivors’ and Dependents’ Educational Assistance Program benefits. Conflating these programs into one category makes it extremely difficult to isolate the impact of specific benefits or populations.

Department of Veterans Affairs (VA). In contrast to ED, VA is able to identify nearly every student veteran enrolled in a post-secondary course through veteran education benefits usage, but has only recently been collecting data on student veteran academic outcomes. Historically, the Veterans Benefits Administration (VBA) within VA originated in the Department of Treasury, and was included with medical services after World War I. VBA’s primary responsibility and duty has been the proper disbursement of benefits (medical, education, home, etc.) on behalf of the veteran. In other words, the correct benefit amount is made to the correct person or payee in a timely manner. In the case of education benefits under the Post-9/11 GI Bill, this means that tuition payments are made to the correct school or program in time to ensure no disruption in enrollment occurs, and other benefits, such as the Monthly Housing Allowance, textbook stipends, etc. are dispersed to the student veteran. To accomplish this task, VA collects information related only to the amount and destination of the benefit, such as the student veteran’s institution, enrollment status (part-time or full-time), and the amount of the disbursement. VBA, acknowledging student veteran outcomes are important, determined the inclusion of additional mandatory reporting measures would slow the benefit payment process due to increased data entry and unfunded information technology requirements, thus hindering their ability to deliver benefits in a timely manner.

However, with the enactment of the Post-9/11 GI Bill, VA updated their enrollment reporting system to obtain additional variables on student veteran academic progress and outcomes, but they are self-reported voluntarily by School Certifying Officials. These limited variables do not translate into a complete measure of student veteran postsecondary academic outcomes. VA is only capable of tracking outcomes of veterans who are using the Post-9/11 GI Bill. If a student veteran exhausts (or stops using for other reasons) his or her Post-9/11 GI Bill benefits after 36 months and then graduates, he or she would not be captured in VA's reporting requirements. The same is true for student veterans using other sources of financial aid (scholarships, grants, Title IV financial aid, etc.) during their academic career, creating gaps in the data and affecting both persistence and completion rates. Without secondary sources to compare results with, it is extremely difficult to measure how situations like the ones described influence the results.

Executive Order 13607. As described above, the three Executive Branch departments have historically collected data separately on student veterans and military-connected students. They shared relatively little data between them on student veterans and military-connected students, mainly to verify veteran status or enrollment status due to a lack of authorization and an infrastructure to share such information. That is until President Obama's Executive Order 13607 (2012) which among other items directed the three government departments to "develop a comprehensive strategy for developing service member and veteran student outcome measures that are comparable, to the maximum extent practicable, across Federal military and veterans educational benefit programs, including, but not limited to, the Post-9/11 GI Bill and the Tuition Assistance Program" (pg. 25863).

A purpose in connecting or merging data frames is to strengthen weaknesses in one or all the data frames by filling gaps or missing data, making the new data frame greater than the sums of their parts. The Executive Order created a mechanism and authorization for the three departments, thus expanding our knowledge of student veterans and military-connected students and answer long sought-after questions. However, many of the same weaknesses described above in the departments' data collection and management system create difficulties for clean data sharing and creating stronger data frames for analysis. For example, while the VA knows a large portion of the student veteran population and the institutions they attend through Veteran Education Benefits usage, much of the Department of Education data is at the institutional level and focuses on traditional college students. Merging these data frames does little to add value to discussions on student veteran or military-connected students. VA is provided with institutional data on traditional students, which generally does not apply to student veterans or military connected students, and ED received data on financial aid programs for non-traditional students (VA Education Benefits) that does not fall under the ED's purview.

National Veteran Education Success Tracker (NVEST) Project

Accurately identifying and tracking student veterans' academic careers with the current systems is difficult due to policy and infrastructure barriers. In 2013, to better understand student veteran postsecondary academic outcomes, SVA entered into a partnership with VA and the National Student Clearinghouse to create and develop the Million Records Project (MRP). MRP addressed several of the weaknesses inherent in many of the national level databases and national surveys that track postsecondary academic outcomes, thus producing a more accurate estimate of Post-9/11 student veteran academic outcomes from students who used either the MGIB or the Post-9/11 GI Bill between 2002 and 2010. MRP was the first project in the 70-plus year history of the GI Bill to capture and report the postsecondary academic outcomes of a large segment of the current era of student veterans, and demonstrated student veterans' post-academic success, refuting media reports to the contrary.

The MRP report provided much-needed data on Post-9/11 student veterans and their postsecondary academic outcomes. However, MRP only reported on high level outcomes, such as completion, time-to-degree, and level of education, leaving several questions about Post-9/11 student veterans' persistence and attrition rates. The NVEST Project is the next phase of this research that expands and narrows the findings from the MRP.

NVEST Project expanded the academic outcomes metrics to include persistence, transfer, and attrition rates as well as enrollment level (e.g. full-time, part-time, etc.), while keeping many of the same metrics in MRP, such as completion rates, degree fields, and degree levels. This will add a new dimension, allowing researchers to examine not only the percentage of student veterans who completed a post-secondary certificate or degree, but also the percentage that continue to work toward their certificate or degree. Furthermore, these data points allow for more detailed exploration of enrollment status and intensity that helps describe the pace at which student veterans complete their degrees.

NVEST Project also focuses only on one iteration of the GI Bill. MRP included both the MGIB and the Post-9/11 GI Bill beneficiaries, while this provided a representative sample of current student veterans, it created several difficulties in discussing the effects of the GI Bills. The subset for NVEST was narrowed to only include student veterans that used the Post-9/11 GI Bill. This allows a clear focus on the current and most popular veteran education benefit used by student veterans. It also provides an early measure of academic performance and outcomes for student veterans using the Post-9/11 GI Bill.

Using the process developed by the MRP as a blueprint, the NVEST Project used VA education benefits information, specifically the Post-9/11 GI Bill benefits, to identify student veterans. VA verifies a beneficiary's veteran's status with the DoD prior to distributing their benefits, thus it is certain that the subset consists solely of U.S. military veterans. VA provided 853,111 records of veterans who

initially used their Post-9/11 GI Bill benefits between August 1, 2009—the start of the Post-9/11 GI Bill—and December 31, 2013.

As with the MRP, NVEST used data from the nonprofit organization National Student Clearinghouse. Institutions of higher education provide student enrollment and completion data to the Clearinghouse, where the education finance industry, ED, and others can access this data, increasing the overall efficiency, accurately, and efficacy of the process. Organizations and companies can update records from a central hub instead of connecting to thousands of schools, and schools only need to report their enrollment records to one center, not several organizations and companies. At the time of this report's completion, the Clearinghouse collected data on approximately 97 percent of all postsecondary students in the United States.

While similar in some respects to the ED IPEDS data, the Clearinghouse's data frame differs in that they track at the individual level, not the institutional level. The Clearinghouse includes many postsecondary students, such as non-traditional students, that do not get included in IPEDS. By utilizing the Clearinghouse's database, NVEST Project obtained accurate student enrollment and completion information based on institutional enrollment and graduation records ensuring high data validity and reliability. Additionally, because the Clearinghouse tracks at the individual level rather than the institutional level, enrollment is not dependent on the school and allows for the ability to track students' transferring schools. This is an advantage in analyzing enrollment patterns of potentially highly mobile students, such as student veterans.

NVEST Project Utility

Establishing accurate measurements of student veterans' academic progress and completion rates is an essential first step in assessing the Post-9/11 GI Bill's ROI. Knowing persistence and completion rates of student veterans using their GI Bill benefits allows for a better estimation of student veterans' employment rates and lifetime earnings. The ability to track student veterans' enrollment regardless of their utilization of the GI Bill adds a new dimension to previous reports by allowing examinations into the role the GI Bill plays in student veteran academic progress and completion. These new data frames and research findings enable the development of prediction models of the amount of money these veterans will return to the nation's economy over their respective lifetimes. They also provide close to real-time information to policy makers, stakeholders, and the public as they consider the value of the GI Bill.

The utility to the institutions, researchers, veteran service organizations (VSOs), and student veterans comes in the form of more accurate data to better inform their decisions concerning student veterans. Accurate academic progress and completion data will allow student veterans to use their limited benefits more effectively by being more informed consumers. Researchers and institutions will be able evaluate and compare the impact of on-campus programs, policies, and

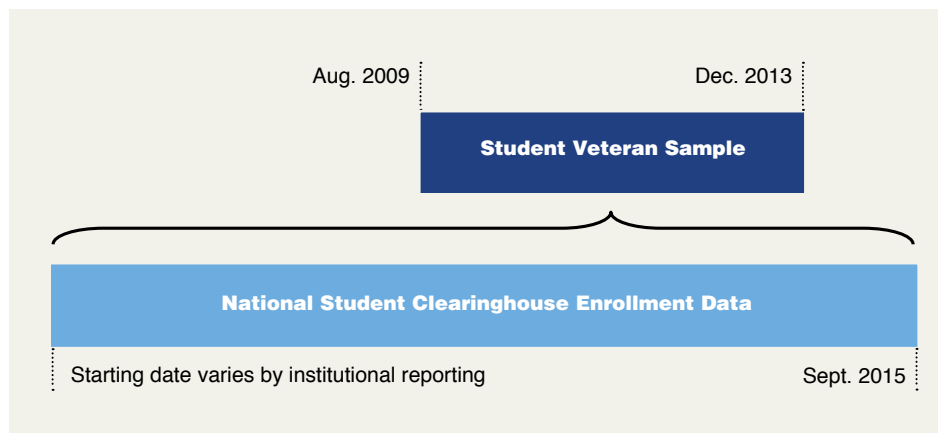
services with national population persistence and completion rates. Knowing what factors result in increased positive outcomes for student veterans, Student Veterans of America, other VSOs, and higher education organizations can promote and recommend adoptions of these factors expanding the impact to all institutions and schools. Finally, policymakers and stakeholders at all levels will have a more robust set of information to make data-driven decisions that impact the lives of student veterans.

METHODS

Design

THIS was a secondary data quantitative analysis study designed primarily to answer two questions: (1) What are the overall post-secondary academic outcomes for student veterans using the Post-9/11 GI Bill? and (2) What type and how many post-secondary certificates and degrees has the Post-9/11 GI Bill produced in its first six years? The first question focuses on the overall post-secondary academic success of veterans using the Post-9/11 GI Bill as a transition instrument to a civilian career. The second question focuses on evaluating the Post-9/11 GI Bill by reporting the post-secondary academic outcomes directly or indirectly attributable to the GI Bill. A secondary purpose of this study was to explore potential differences in the primary questions based on available demographic variables, such as branch of service and gender.

Figure 1
Time Frames for NVEST
Project Sample and
Enrollment Records



The data frame was obtained from the VA through a Freedom of Information Act (FOIA) request. VA, the Clearinghouse, and SVA collaborated to obtain academic enrollment records for 853,111 student veterans who initially used their Post-9/11 GI Bill benefits between August 1, 2009 and December 31, 2013; however, the education records the Clearinghouse provided extended to September, 2015 (see Figure 1).

The population of interest was United States veterans who used their Post-9/11 GI Bill between August 1, 2009 and December 31, 2013. Active duty service members are also included in this subset if they elected to use their Post-9/11 GI Bill benefits in lieu of TA benefits, and are included with the larger student veteran group in the analysis and reporting. The total number of student veterans who used their Post-9/11 GI Bill benefits during this time was 853,111 veterans. Since all veterans were included and sampling was not needed nor used for this project, the results based on this data frame should be considered population results for this group for the specified time period.

While use of the VA education benefit data allowed for valid identification of student veterans, it did exclude several potential groups of student veterans. Veterans who did not use their VA education benefits to earn a postsecondary degree or certificate were not part of this subset. However, not only does this specific subgroup likely represent a small minority of the entire student veteran population, but the process to identify and include such individuals would have been extremely difficult and costly, and would have likely had minimal impact on the results.

The subset also excluded dependents to whom veterans and service members may have transferred all or a portion of their Post-9/11 GI Bill education benefits. The transfer of GI Bill benefits is a relatively new option and presents a new level of complexity to this field of research and practice. For example, one veteran can transfer benefits to numerous dependents, each receiving a fraction of the benefit. The difficulty for analysis becomes how to handle the fraction of the benefits, if a dependent receives 50 percent of the benefit is that 100 percent of benefits to the

person or 50 percent of the original benefit. Either decision could have a significant effect on the results of a study using veteran dependents. Without knowing how best to classify the benefit for this group, significant misinterpretations of the effect of the GI Bill may occur with this population. There is clearly a need to study dependents and they may be included in future projects.

Student veterans who exclusively used VA education benefits other than the Post-9/11 GI Bill were also excluded. The Post-9/11 GI Bill is currently the largest targeted public investment as well as the most utilized VA education benefit program; therefore, the project provides the first measure of the Post-9/11 GI Bill's ROI among the largest segment of today's student veterans. It is probable that some individuals in the subset have used the Department of Defense's (DoD) Tuition Assistance program (TA) or a different VA education benefit program, such as the Montgomery GI Bill (MGIB) or Vocational Rehabilitation and Employment (VR&E or Voc Rehab) benefits, to earn postsecondary academic credits. Simplicity and cost-benefit for the project were the main factors in the decision to not include other education benefit data into the initial NVEST Project subset. Currently, the infrastructure does not allow easy sharing and inclusion of other education benefits into the NVEST Project subset; however, future iterations of the NVEST Project data frame may allow for the inclusion of other VA education benefits. Developing a sample of beneficiaries using multiple VA education benefits programs and DoD data would have been extremely difficult and potentially costly in both time and resources. As simplicity and security of transferring data was of paramount concern for SVA, VA, and the Clearinghouse, it was decided to not include other data external to the Post-9/11 GI Bill benefits at this time. However, like veteran dependents, studies on other VA education benefit programs as well as use of TA funds would add valuable information to this field of research and can be included in future projects.

"Students" were defined as individuals enrolled for at least one academic term at a postsecondary institution or program. Verification of a student veteran's enrollment was conducted by VA through the education benefits certification process. VA requires postsecondary institutions and programs to certify a student veteran's enrollment before it disburses education funds to the institution or the veteran. In addition, schools must notify VA if there are any changes to a student veteran's enrollment status, such as an increase or reduction of academic credits or withdrawal from school.

Finally, the project defined a "postsecondary institution or program" as any school or program that has been certified by VA to receive education benefit funds. This includes all types of two-year and four-year institutions: public, private not-for-profit, and For-Profit schools. This also includes traditional "brick-and-mortar" institutions, online programs, vocational certificate programs, and on-the-job training programs.

Procedure

The subset was the result of a public-private partnership between VA, the Clearinghouse, and SVA. VA identified a subset of student veterans based on their use of Post-9/11 GI Bill educational benefits. This subset was matched with the Clearinghouse data that contains the degree attainment records of approximately 97 percent of postsecondary students in the United States. The Clearinghouse removed all institutional identifying information from the data prior to returning the matched data to VA. SVA helped facilitate the partnership between VA and the Clearinghouse, and the design of the NVEST Project's data frame.

Step one of the process required VA to properly identify student veterans for the subset. VA created filters to select appropriate individuals for inclusion. One filter excluded all veteran dependents (spouses and children) that used the Post-9/11 GI Bill, thus creating a list of only veterans. A second filter focused on the time frame for the subset. The time frame for the subset started on August 1, 2009, the first enrollment date for the Post-9/11 GI Bill, and the cutoff date of December 31, 2013. The cutoff date was decided based on the desire to examine first-year persistence, retention, and transfer rates and at the time of the agreement there would not have been enough enrollment data to justify including any new Post-9/11 GI Bill recipients after the December 31, 2013 cutoff (see Figure 1). This created five combined cohort years (2009–2013) for analysis.

Next, VA transferred the identifying information for the subset of student veterans, such as name, date of birth, and social security number, to the Clearinghouse using secure file transfer protocols. The VA followed current guidelines established by the Privacy Act of 1974, which addresses the use of computerized databases that might affect the privacy rights of individuals, and the Clearinghouse followed the Family Educational Rights and Privacy Act (FERPA) to ensure and protect the privacy and anonymity of all individuals in the subset.

The Clearinghouse matched the data file provided by VA of veteran education benefit records with its own records of enrollment data and other academic outcomes, where available. The data match between the VA data file of student veterans and the Clearinghouse database of post-secondary enrollment records occurred on October 13, 2015 with post-secondary enrollment data current through September 21, 2015 (see Figure 1).

A total of the 853,111 Post-9/11 GI Bill veteran beneficiaries constituted the subset used for this project. The Clearinghouse found enrollment data for 822,327 individuals for a coverage rate of 96.4 percent (see Figure 2). The 30,784 student veterans without any enrollment record in the Clearinghouse data most likely either attended an institution or program that does not report their postsecondary enrollment to the Clearinghouse, or used their Post-9/11 GI Bill benefits for vocational experience programs, such as on-the-job training and apprenticeships. Missing academic data does not imply anything about the individual's academic progress.

Once data from VA were matched with the Clearinghouse data, the Clearinghouse removed all institutional identifying information, such as name

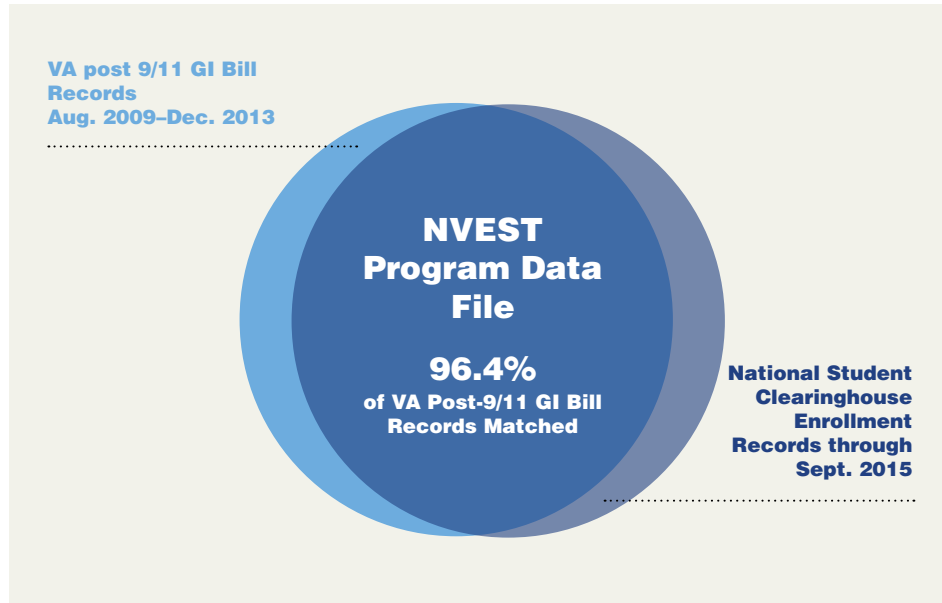


Figure 2
NVEST Project
Data Matching

of school, school's address, and the Office of Postsecondary Education (OPE) code, and created a separate FERPA-compliant data file void of all personal identifying information (e.g., name, date of birth, and social security number). The Clearinghouse returned both data files to VA.

SVA submitted a FOIA request to VA for access to the public version of the data. Once the FOIA request was approved and the Veterans Benefits Administration ensured that any personal identifying information had been removed based on guidelines established in the Privacy Act of 1974, VA securely transferred the data using secure file transfer protocols to SVA and it was then analyzed using SAS version 9.3.

Variables

Outcomes of Interest. For this report, we focused on four indicators of student veteran postsecondary academic progress, based on data obtained from the Clearinghouse.

COMPLETION RATES. This is an omnibus measure of student veteran post-secondary completion. It includes completion from any post-secondary educational or vocational education programs that report such data to the Clearinghouse. The reporting of a degree completion can occur during any time in the student veterans post-secondary career, prior to use of the Post-9/11 GI Bill, during its use, or after the months of eligibility has been exhausted. While any post-secondary student can earn multiple certificates or degrees, only one post-secondary completion was

assigned to each individual in the NVEST Project data frame when calculating the overall completion rates for the subset.

CURRENT ENROLLMENT RATES. The Current Enrollment Rate is a second omnibus post-secondary academic outcome measure being used in this report. This measures the percentage of student veterans who had not yet completed a post-secondary degree or certificate, but were still enrolled in the term prior to the data matching—January 1, 2015 through September 21, 2015. This includes both the Spring and Summer 2015 academic terms, so any student veteran who had not completed a post-secondary degree, but was enrolled between January 1, 2015 and September 21, 2015, would fall under this category. This result vastly improves the reporting ability of the NVEST Project compared to its predecessor, the Million Records Project, by accounting for student veterans who are still progressing toward a post-secondary certificate or degree, but have yet to complete a post-secondary certificate or degree.

ATTRITION RATES. Attrition rates measure the percentage of individuals in the NVEST Project that did not complete a post-secondary degree, nor were enrolled in the last academic term prior to the data matching, prior to January 1, 2015. This report further classifies the type of attrition based on the last academic terms enrollment status. A Completed Term Attrition is classified when the student veteran completed the academic term but did not enroll in any future academic term. An Incomplete Term Attrition is classified when a student veteran ends his enrollment in the middle of the academic term, usually reported as either a withdraw or leave of absence.

SUCCESS RATES. A “success” in this report is any student veteran that has completed a post-secondary certificate or degree, or who was enrolled in a post-secondary program during the academic term prior to the data match—January 1, 2015 through September 21, 2015. It is essentially the sum of the Completion Rate and the Continued Enrollment Rate.

TIME TO DEGREE. Previously in the MRP report, a calendar year method, subtracting the enrollment date from the graduation date, was used to measure student veterans’ time to degree. However, calculating the time to degree using this calendar year method is problematic and inaccurate. The calendar year method includes potential breaks, withdraws, or formal leaves of absences in a student veterans’ academic career due to military service and/or personal reasons. Including these periods of time when the individual is not enrolled positively skews the data, thus artificially increasing the calendar year time to degree results and unintentionally penalizing the student veteran.

An alternative to calendar year method is using academic terms to measure a student veteran’s time to degree. For the purposes of this report, “academic term” is inclusive to both the semester and quarter calendar systems, unless otherwise noted for discussion. This academic term method for time to degree sums the number

of academic terms a student veteran enrolled in, then compares that to overall traditional norms for the number of terms needed to complete an associate's and bachelor's degree. It normally takes four, full-time academic terms to complete an associate-level degree, and eight academic terms to complete a bachelor-level degree. This method eliminates the bias of the calendar year method for time to degree by only counting the periods of time a student is enrolled and compares it to a normative scale.

Similar to other nontraditional students, student veterans often have breaks or interruptions in the enrollment. In addition, the Clearinghouse provided enrollment records for each individual's academic term, allowing for the calculation of an academic term time to degree. For these reasons, the decision was made to use the academic term method to calculate student veterans' time to degree in this subset. Future reports may return and utilize the calendar year method of measuring time to degree in order to compare student veterans to traditional students.

SUM OF ENROLLMENT STATUS. While the academic term method is a better measure of student veterans' time to degree, it is not without some faults. Adding the number of enrolled terms presumes that the student veteran is enrolled at a full-time enrollment status for each of the academic terms. Student veterans not enrolled at a full-time status may have more academic terms. For example, under the academic term time to degree method, a student who completes a four-year degree at full time enrollment would normally have eight academic terms, but another student in the same program enrolled at a half-time enrollment status throughout their degree would normally have 16 academic terms. A fix to this overestimate is including the enrollment status into the enrolled academic terms. By converting enrollment status to a numeric scale (e.g. full-time = 1.0, half-time = 0.5, etc.) then summing these numeric scores, it allows for the ability to measure the number of academic terms on the full-time enrollment scale that it takes an individual to complete their degree. It includes potential added time student veterans spent on remedial classes, or more time due to a change in major or degree field. But, it does not penalize student veterans who had to leave in the middle of the academic term.

ENROLLMENT INTENSITY RATIO. Another use for the numeric scale of enrollment status is its ability to potentially measure a student veteran's pace as they work toward their academic degree, or their Enrollment Intensity. The calculation is relatively simple, dividing the total Sum of Enrollment Status by the total number of academic terms enrolled for the student veteran. This calculation provides a holistic measure of the student veterans academic pace to their degree and results in an average enrollment status across the student veteran's progress to completion. This calculation also factors in and penalizes student veterans for withdrawing or taking a leave of absence prior to completing the academic term. This new scale has an upper bound of 1.0 (continued full-time status for all academic terms through their degree completion) to 0 (all terms ending with a leave of absence

or withdrawing). For example, a student veteran who finished a bachelor's degree in eight terms and enrolled as a full-time student for all eight terms $[(1 \text{ full-time term} \times 8 \text{ academic terms}) / 8 \text{ academic terms}]$ would have an enrollment intensity of one. Contrast that result with a student veteran who enrolled half-time for all 16 academic terms $[(0.5 \text{ half-time enrollment during term} \times 16 \text{ academic terms}) / 16 \text{ academic terms}]$ would have an enrollment intensity of 0.5. This metric allows for the reporting of student veterans' enrollment status throughout their academic careers broken down by existing enrollment status levels—an important metric when exploring how quickly student veterans earn their post-secondary certificates and degrees.

Group Variables. Several independent variables were used in this study that will provide descriptive information, and allow for the exploration of differences within the overall population.

POST-9/11 GI BILL USE. VA provided the first date the Post-9/11 GI Bill funds were issued. This variable allowed the project to conduct two types of analysis. First, this variable allows for a split within the NVEST subset based on Post-9/11 GI Bill usage, “Pre-GI Bill use” and “Post-GI Bill use.” This allows for an exploration of the potential effects or contributions use of the Post-9/11 GI Bill had on student veteran's academic progress and pace. The second type of analysis allowed the project to factor out academic progress or completion done prior to the use of the Post-9/11 GI Bill and report on certificates and degrees directly or indirectly produced by the Post-9/11 GI Bill.

SERVICE BRANCH. As part of the verification of military service and to determine eligibility for benefits, VA receives the beneficiary's service branch and verifies it with the DoD. All five branches, Army, Air Force, Navy, Marine Corps, and Coast Guard, were included in the data frame and used in the comparisons. In addition to the five branches of the military, members of two executive agencies, the U.S. Public Health Service and the National Oceanic and Atmospheric Administration (NOAA), are also eligible for Post-9/11 GI Bill benefits. Although employees from these agencies represented a small percentage of the overall subset and had little influence on the overall results, there was no methodological reason to exclude this group and they were included in the analyses.

DUTY STATUS. Duty status refers to the veteran's type of service while in the military, such as Active Duty versus Reservist. Similar to branch of service, as part of verifying a veteran's eligibility requirements for benefits, VA receives the beneficiary's duty status and verifies it with the DoD. The duty status classifications provided in the data frame were “Active Duty” and “Reservists.” Since reservists and National Guard units were only eligible after a minimum number of days on active duty or through a medical discharge, the report defines “Reservists” as members of reserve or National Guard unit who served on active duty for at least 90 days, or were given a medical discharge. In addition, members of reserve or National Guard

units that were not called up to active duty for more than 90 days are not included in this data frame and report.

AGE GROUP. Individual dates of birth are considered personal identifying information and could not be included in the data frame for analysis and comparisons. However, an aggregated variable based on age groups was able to be included in the data frame. The construction of the age groups was based on Department of Education age grouping to allow easier comparison to other reports. Two variables based on the age groupings were included in the data frame. The first “Age Group at Initial Enrollment” is the veteran’s age when they first enrolled at a postsecondary institution or program. The second “Age Group at Initial Degree” is the veteran’s age when they earned their first postsecondary degree or certificate.

SCHOOL LEVEL. While specific institutional names could not be included in the data frame, several non-identifying institutional level variables were. One variable was the school’s level, typically defined as a classification of whether an institution’s programs are 4-year or higher (4 year), 2-but-less-than 4-year (2 year), or less than 2-year.

SCHOOL SECTOR. Another institutional variable included in the data frame was the school sector. The school sector is a classification of who operates the institution and how it derives its major source of funds. As described by the Department of Education: A public institution is generally an educational institution whose programs and activities are operated by publicly-elected or appointed school officials and which is supported primarily by public funds. A private not-for-profit institution is one where the individuals or agency in control receive no compensation, other than wages, rent, or other expenses for the assumption of risk and includes both independent and religious affiliated institutions. Private for-profit institutions are private institutions in which the individuals or agency in control receives compensation other than wages, rent, or other expenses for the assumption of risk. Comparisons on the results were conducted on the available institutional variables for the veteran’s initial enrollment.

DEGREE FIELD. In addition to reporting to the Clearinghouse whether students have completed their program, institutions also have the option of reporting the academic field of the degree using the Department of Education’s Classification of Instructional Programs (CIP) codes. The data frame included the full six-digit code allowing for several layers of grouping and analyses of student veterans degree fields.

GENDER. The veteran’s gender was included in the data frame and was used in the analysis comparisons.

RESULTS

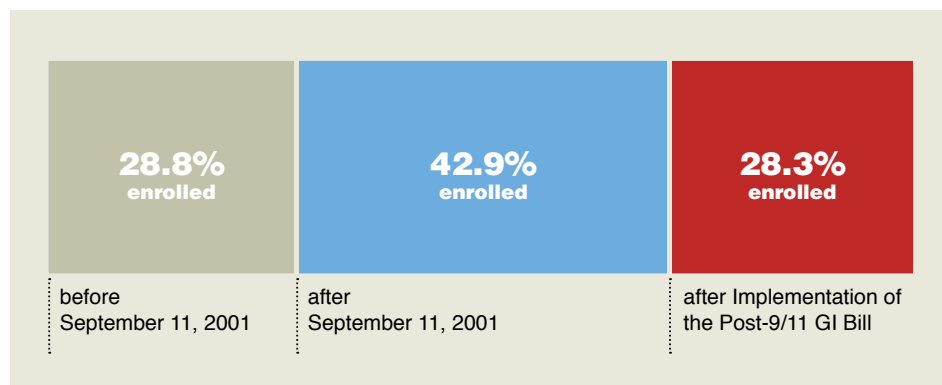
What are some of the demographic segments for student veterans using the Post-9/11 GI Bill?

THE majority (71.2%) of student veterans in this subset initially enrolled in a post-secondary college or university after September 11, 2001 (see Figure 3). The plurality of the subset (42.9%) initially enrolled after September 11, 2001 but prior to the implementation of the Post-9/11 GI Bill (August 1, 2009) with another 28.3 percent initially enrolling after the implementation of the Post-9/11 GI Bill.

THE GI BILL HAS PROVIDED ME WITH THE OPPORTUNITY TO EXPAND MY OCEAN OF KNOWLEDGE WHILE EXPOSING THE SHORES OF MY IGNORANCE. I AM ETERNALLY GRATEFUL FOR THIS OPPORTUNITY.

— JUAN LOPEZ,
STUDENT VETERAN AT THE
UNIVERSITY OF HOUSTON

Figure 3
NVEST Sample's
Initial Post-Secondary
Enrollment Breakdown



The Army had the largest representation in the subset with 42.8 percent, followed by the Navy (21.6%), Marines (17.2%), Air Force (16.8%), and Coast Guard (1.57%). A large majority of the subset (80.5%) served on Active Duty while the remaining (19.4%) served in the Reserves or National Guard (see Table 1). Compared with the U.S. total military force (Military One Source, 2014), the NVEST subset has a larger proportion of Active Duty service members compared with the armed forces. This is not surprising due to the Post-9/11 GI Bill military active service eligibility requirements.

Of the total subset, one-in-five (20.0%) of the subset was female, which is a larger percentage compared to the total military force (16.5%; Military One Source, 2014). Approximately one-third of the subset (31.9%) first enrolled in a post-secondary college or university before the age of 19 (see Table 2) with an increase in the number of student veterans' initial enrollment between the ages of 22 and 29 before a steady decline occurs. When compared with the Department of Education's *The Condition of Education 2016* report, differences in age between student veterans in this subset and the larger post-secondary population are seen. At the 4-year school level, student veterans were older than the student populations at public and private institutions, but similar in age at for-profit institutions (see

Table 1
NVEST Subset
Comparison of
Branch of Service
by Duty Status

Branch	N	Active Duty	Reserve / Guard	Total
Air Force	143,581	13.82%	3.01%	16.83%
Army	364,784	30.06%	12.70%	42.76%
Coast Guard	13,367	1.44%	0.13%	1.57%
Marines	147,079	15.10%	2.14%	17.24%
Navy	183,987	20.12%	1.45%	21.57%
Total	853,114 ¹	80.54%	19.42%	99.96% ²

1. Three individuals served in multiple branches and/or had multiple duty statuses

2. 316 (0.04%) individuals worked for Federal Agencies eligible for the GI Bill

Table 3). While the same differences in ages can also be seen at the public, 2-year school level, the reverse is true for 2-year, private schools where student veterans were younger, and similar ages at the for-profit schools (see Table 4).

Age	N	Percent
Under 19	260,819	31.9%
20–21	88,086	10.8%
22–24	155,008	19.0%
25–29	138,668	17.0%
30–34	68,565	8.3%
35–39	44,872	5.5%
40–49	49,905	6.1%
50–64	11,614	1.4%
65+	108	1.0%

Frequency Missing = 35,466

Table 2

NVEST Subset Age at Initial Post-Secondary Enrollment

Age	NVEST			Dept. of Ed		
	Public	Private	For-Profit	Public	Private	For-Profit
Under 25	70	48	32	88	86	30
25 to 34	20	26	42	9	8	39
35 and older	10	26	27	3	5	31

1. (Kena, et al., 2016)

Table 3

Age Group Comparison between NVEST and Department of Education¹ by Sector at 4-Year Level

Age	NVEST			Dept. of Ed		
	Public	Private	For-Profit	Public	Private	For-Profit
Under 25	68	78	46	73	61	47
25 to 34	24	18	39	16	23	32
35 and older	9	4	15	11	16	21

1. (Kena, et al., 2016)

Table 4

Age Group Comparison between NVEST and Department of Education¹ by Sector at 2-Year Level

What are the Academic Outcomes of Student Veterans who have used the Post-9/11 GI Bill?

The overall success rate for the NVEST Project subset was 71.6 percent (see Table 5). The success rate includes post-secondary completion and student veterans who were enrolled in classes in the term preceding the data match—January 1, 2015 to September 1, 2015. Of the 822,327 records in the NVEST subset with enrollment records, 440,441 post-secondary completion records were found for a post-secondary completion rate of 53.6 percent. The current enrollment rate of student veterans who had a record of enrollment in an academic term between January 1, 2015 and September 1, 2015 was 18 percent.

The attrition rate for this subset—student veterans with no record of completing a post-secondary degree nor a record of enrollment prior to January 1, 2015—was 28.4 percent. The exact reason for these student veterans' respective departures from post-secondary education is outside the scope of this data, however a closer examination of their last term's enrollment status provides some insight and a measure of the circumstances of their leaving school. Nearly one in five (19.8%) student veterans in the entire NVEST Project subset whose enrollment stopped prior to January 1, 2015 successfully finished the last academic term for which they were enrolled. The enrollment status showed 8.3 percent were enrolled full-time, 0.4 percent were enrolled as three-quarter time, 7.2 percent were enrolled half-time, and 3.9 percent enrolled less than half time. The remaining 8.6 percent are student veterans who left school in the middle of a term—8.6 percent reported withdrawing from school (defined as a student enrolled in a postsecondary institution who has withdrawn), dropped out, failed to re-enroll or been terminated, were expelled or dismissed by the institution and less than 0.1 percent left school because they were deceased or left with a formal leave of absence by the school.

Table 5
NVEST Post-
Secondary Academic
Outcome Results

	Percentage		
SUCCESS RATE¹			71.6%
Completion Rate		53.6%	
Current Enrollment Rate²		18.0%	
ATTRITION RATE			28.4%
Completed Term		19.8%	
Left School		8.6%	
			100.0%

1. Combined completion and persistence rates

2. Defined as record of enrollment in the term prior to data match (01/01/2015–09/01/2015)

What do we know about the group of student veterans who were currently enrolled between January 1, 2015 and September 1, 2015?

As mentioned earlier, data from the Clearinghouse included enrollment records for each academic term. This allowed for a detailed reporting of student veterans who have not completed a post-secondary certificate or degree, but were still recently enrolled and were making progress on a certificate or degree, as well as in-depth analysis of this continued enrollment group. Of the entire NVEST subset, 18 percent were classified as currently enrolled, based on their enrollment data between January 1, 2015 to September 1, 2015.

An in-depth analysis of the continued enrolled group explored their enrollment status of their last academic term. Of the entire NVEST subset, 9.2 percent of student veterans were currently enrolled as full-time students, 2.0 percent were enrolled as three-quarters full-time student, 2.9 percent were enrolled as half-time students, and 1.8 percent enrolled as less than half-time students.

Further analysis broke down this group into subgroups based on the school sector and level of their last enrollment term. When broken down by school sector, a majority of the continued enrolled group were enrolled in a public school (58.7%), followed by the for-profit schools (26.4%), and the remaining attending private schools (14.9%; see Table 6). Nearly two-thirds (65.1%) of the continued enrolled group were enrolled in a 4-year institution with the remaining attending 2-year schools (34.9%). When school sector and level were combined, a plurality of this group were currently enrolled in a 2-year, public school (34.2%), followed by 4-year, for-profit school (25.7%) and 4-year, public schools (24.5%).

Type	2-year	4-year	Total
Public	34.2%	24.5%	58.7%
Private	0.1%	14.8%	14.9%
For Profit	0.7%	25.7%	26.4%
Total	34.9%	65.1%	100.0%

1. Enrolled in an Academic Term between 01/01/2015 to 09/01/2015
N = 148,399

Table 6
Continued Enrolled
Group¹ by School
Sector and Level

What degree fields or majors are student veterans pursuing?

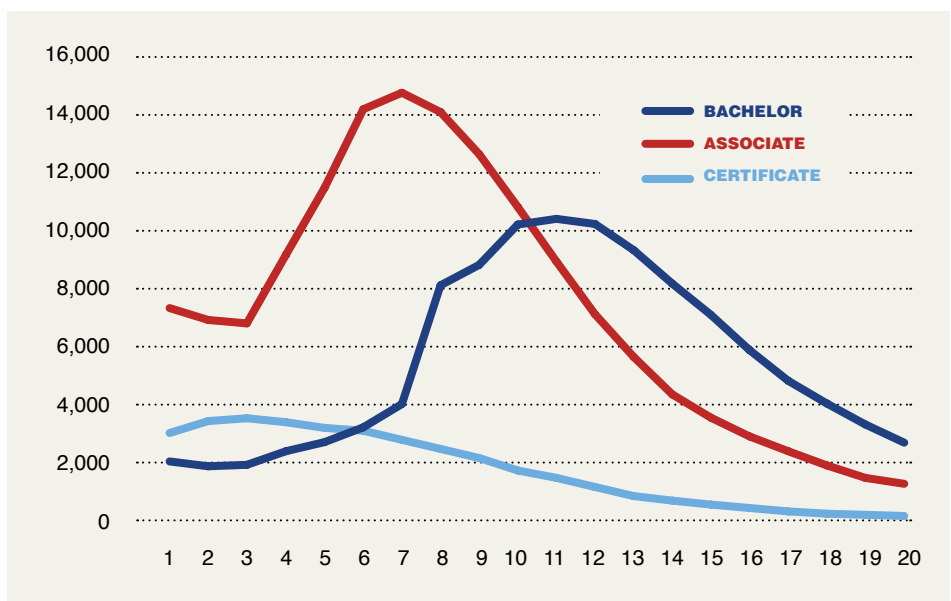
There is a concern that student veterans are obtaining degrees in majors or degree fields that do not allow for marketable skills or for them to be competitive in the civilian job market. The NVEST Project data included the CIP Codes used by the Department of Education to indicate the degree field or major of the certificate or degree. By analyzing the CIP Codes associated with the earned certificates and degrees, this report can begin to explore the prevalence of degree fields and majors student veterans pursue.

Out of the 440,411 completion records, 338,800 records (76.9%) also had a valid CIP Code that was used for the analysis. A full frequency and percentage breakdowns of the degree fields is listed in Appendix A. The most frequent individual majors in which student veterans have earned degrees were Business, Management, Marketing, and Related Support Services (20.1%). The next degree field, when grouped together, was STEM and STEM-related majors (10.7%). Liberal Arts and Sciences, General Studies and Humanities ranked third (9.0%) and Health Professions and Related Programs was fourth (7.7%).

What are student veterans' academic progress and pace towards their initial degrees?

Using the enrollment term method to calculate time-to-degree, Figure 4 displays the frequency distributions for initial certificate, associate's degree, and bachelor's degree, for the total terms enrolled before completing their initial degree. The

Figure 4
Frequency of
Academic Terms
Taken Before
Completing Initial
Degree



certificate distribution peaks at two terms taken before completing their certificate, then steadily declines until 10 terms before leveling. Due to the different program and academic term lengths, curriculum, and training requirements for certificate programs, it is difficult to evaluate how well this NVEST Project subgroup compares with the normative time-to-degree for certifications.

The associate's degree line decreases from one term to three, but sharply increases from three to its peak at six terms before steadily sloping downward. The high numbers at the beginning of the distribution for the associate's subgroup could be from the awarding of credits from military training reducing the overall number of academic terms needed to complete their degree, however schools do not report credits awarded from experiential learning, such as military training, to the Clearinghouse or the VA; therefore, this hypothesis cannot be further explored with the NVEST Project dataset. The peak at six academic terms is slightly more than expected, as the normative time-to-degree for many associate's degree programs is four academic terms under a semester calendar. A potential explanation is student veterans enrolling at a less than full-time basis or in non-degree or non-transferrable courses, such as remedial or college prep courses to strengthen academic skills. Either of these cases would explain the more terms needed to complete an associate degree. Student veterans' enrollment status for each term has been provided and will be addressed in the following section. However, specific course work data is located at the institution level and not included in the NVEST Project dataset and cannot be explored further.

The bachelor's degree distribution peaks between nine and 11 academic terms enrolled before degree completion. Although a little higher than the eight semester terms it normatively takes to complete a bachelor's degree, but when accounting for individuals on quarter calendar systems and fifth year seniors, this peak around 10 terms does appear reasonable to normative progress to a bachelor's degree. It is an unfortunate weakness of the NVEST project dataset that the institution's type of calendar year (semester vs quarter) was not included. Future data matchings should explore the viability of including that data point for more detailed analysis and interpretation.

Does withdrawing from classes prior to finishing an academic term negatively affect student veterans' degree completion?

An examination of the enrollment statuses for student veterans in the NVEST Project may offer clues as to why some student veterans needed to enroll in more than the normative academic terms to complete their initial degrees. This project first examined what proportion of the subset had at least one term where they withdrew from classes prior to the end of the term. A majority (54.2%) of student veterans in the entire NVEST Project had at least one term where they withdrew from classes prior to the end of the term. This large percentage of student veterans with at least one instance of withdrawing prior to the end of the academic term

helps account for some of the extra terms needed to complete an initial degree in the previous section, as these student veterans would need to retake the courses they did not complete before advancing, thus enrolling in more terms than normal.

An in-depth analysis of this finding was conducted to explore any patterns or explanations for the number of student veterans who withdrew from classes prior to the end of the term. The in-depth analysis was limited by the number of demographic variables available within the NVEST project dataset. The NVEST Project's size makes traditional inferential analytical methods hollow, as the analysis would report any differences as statistically significant. Instead effect sizes were conducted and reported to show the degree to which each group differed. This report will use the criteria established by Cohen (1988) to classify effect sizes as small, medium, or large. One potential possibility of the high rate is that reservists in the subset were activated in the middle of an academic term and were required to withdraw from classes due to military orders prior to finishing their term. Results (see Table 7) did show a larger proportion in the Reserve sub-subset reported at least one withdraw (58.6%) which is higher than both the overall rate (54.2%) and compared with the Active Duty sub-subset (53.1%). However, the effect size, Phi (ϕ) coefficient, found a small difference between the two groups suggesting there was little or no practical relationship between duty status and withdrawing from classes prior to the end of term (χ^2 (2, N = 817,649) = 1,533.47, $p < .01$, $\phi = 0.04$).

A second potential possibility the NVEST Project explored was whether a student veteran's military branch was associated with withdrawing from classes prior to the end of the term. Two of the five branches, Air Force and Army, had a higher percentage of student veterans reporting at least one withdraw compared to the overall subset (see Table 8). However, similar to the previous analysis, the Phi coefficient for this analysis found a small difference between the groups suggesting little to no practical relationship between branch of service and withdrawing prior to finishing an academic term (χ^2 (5, N = 817,649) = 1,491.58, $p < .01$, $\phi = 0.04$).

Taken together, these two analyses suggest that military branch and duty status does not directly affect student veterans' withdrawing from classes prior to the end of the term. Yet, other research has found anecdotal evidence that a portion of student veterans do withdraw from classes prior to the end of the term due

Table 7
Instances of
Withdraws Prior to
End of Term
by Student Veteran
Duty Status

Duty Status	At Least One Withdraw		No Withdraws		Total
	Frequency	Percentage	Frequency	Percentage	
Active Duty	349,713	53.1%	308,471	46.9%	658,184
Reserves	93,225	58.6%	65,936	41.4%	159,161
Other	144	47.4%	160	52.6%	304
Total	443,082		374,567		817,649

$\chi^2 = 1,533.47$, $p < .01$, $df = 2$, $N = 817,649$, $\phi = 0.04$
Missing=35,465

to military orders or deployment. It is possible that the variables in the NVEST Project dataset do not fully capture this effect. Other factors should also be considered for reasons student veterans withdraw from classes prior to the end of the term. Most student veterans are non-traditional students with families and work obligations that may lead to interruptions and breaks in their academic progress. Future research into this topic should explore both potential military and non-traditional student factors for student veterans to withdraw from classes prior to the end of the term.

However, withdrawing from classes prior to the end of the term did not negatively affect a student veterans' post-secondary completion (see Table 9). An in-depth analysis of withdrawing from classes prior to the end of the term sub-group found a majority of this sub-group (52.3%) also completed a post-secondary certificate or degree. This result suggests that despite breaks, interruptions, or potential setbacks in student veterans' academic careers, a majority of student veterans will return to complete their post-secondary degrees. These interruptions or breaks may lead to student veterans needing to enroll in more terms to complete their certificates or degrees, but a majority of student veterans will return and complete their degrees.

Branch	At Least One Withdraw		No Withdraws		Total
	Frequency	Percentage	Frequency	Percentage	
Air Force	77,425	55.6%	61,862	44.4%	139,287
Army	194,449	55.9%	153,616	44.1%	348,065
Coast Guard	6,778	52.5%	6,123	47.5%	12,901
Marine	70,650	50.3%	69,925	49.7%	140,575
Navy	93,636	53.1%	82,881	47.0%	176,517
Other	144	47.4%	160	52.6%	304
Total	443,082		374,567		817,649

$\chi^2 = 1,491.58$, $p < .01$, $df = 5$, $N = 817,649$, $\phi = 0.04$
Missing=35,465

Table 8
Instances of
Withdraws Prior to
End of Term
by Branch of Service

Withdraws	Non-Complete		Complete		Total
	Frequency	Percentage	Frequency	Percentage	
At Least One Withdraw	211,240	47.7%	231,842	52.3%	443,082
No Withdraws	170,648	45.6%	203,919	54.4%	374,567
Total	381,888		435,761		817,649

Missing=35,465

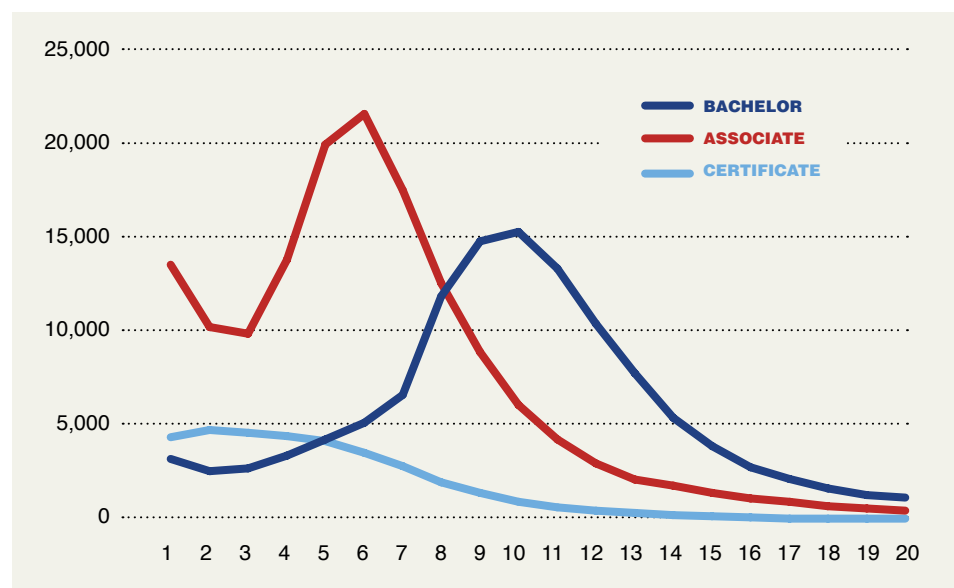
Table 9
Instances of Withdraws
Prior to End of Term by
Degree Completion

What does student veterans' enrollment intensity tell us about additional terms needed for degree completion?

The previous sections explored the total number of terms student veterans' needed to complete their initial degree. This method provides a better measure of student veterans' time-to-degree that does not penalize them for breaks or interruptions in their academic progression. However, this version of the term method does not take into account the enrollment status for each academic term, rather it assumes that student veterans enrolled at a full time status for all the terms they enrolled in during their academic careers, which is highly unlikely. This could lead to an inflation of the number of terms it takes for student veterans to complete their initial degree resulting in a positive skew of the results. In order to correct this skew, a sum of enrollment status was calculated by first converting the enrollment status to a numerical value, then summing the numerical values of the enrollment status together.

Figure 5 displays the frequency distributions for the sum of enrollment status for initial certificates, associate degrees, and bachelor degrees in the NVEST Project. The certificate distribution peaks at two terms with a steady downward slope until 14 terms before it levels off. The associate degree distribution at first sharply drops from one term to three terms before increasing from three terms to a peak at six terms before sharply decreasing before leveling off at around 13 terms. When compared to the total term distribution, the sum of enrollment status aligns better with the normative amount of terms to earn an associate's degree. The peak is at six terms which is only two terms more than the normative terms, but does sharply increase starting at four terms which is the normative time for an associate's degree. Out of the three, the bachelor's degree distribution most closely resembles a normal distribution with a steady increase until seven terms, then sharp increase until it

Figure 5
Frequency Distribution
of Summed Enrollment
Status before
Completing Initial
Degree



peaks at 10 terms before a downward sloping before leveling off around 18 terms. The peak begins at eight terms and ends at 12 terms with its center at 10 terms. This better parallels the normative number of terms needed to earn a bachelor's degree, eight semester terms to 12 quarter terms, and suggests that a majority of student veterans are taking courses that are required for their degrees.

Figures 6, 7, and 8 display the comparison between the total terms distribution with the sum of enrollment status distribution for the certificate, associate's, and bachelor's degrees, respectively. All three of the figures show the sum of enrollment

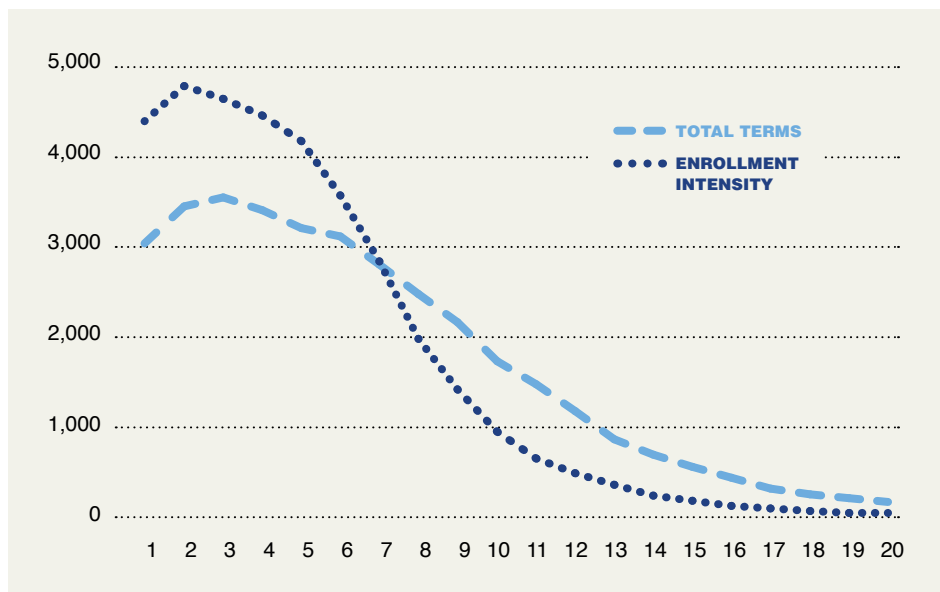


Figure 6
Total Terms and Enrollment Intensity Comparison before Initial Certificate Completion

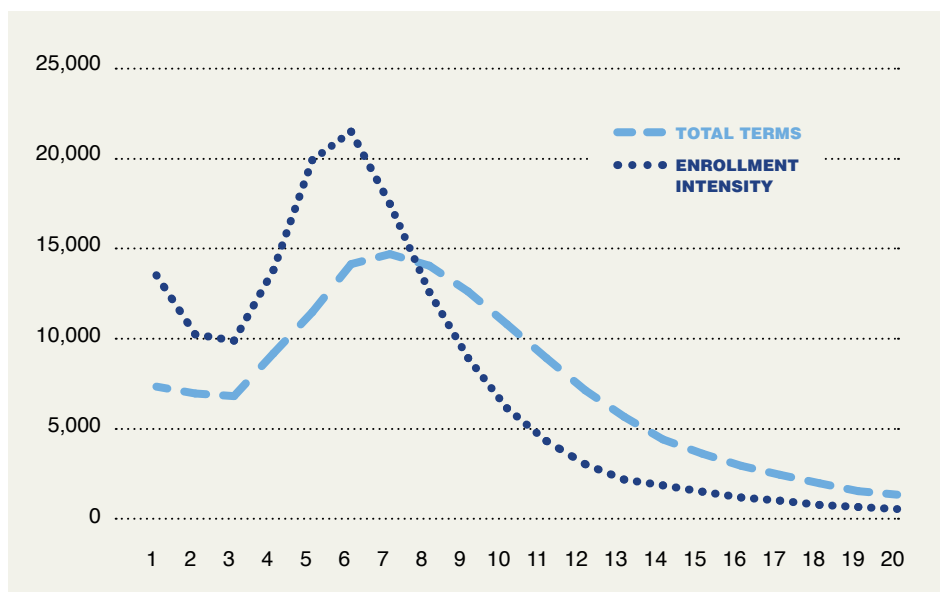
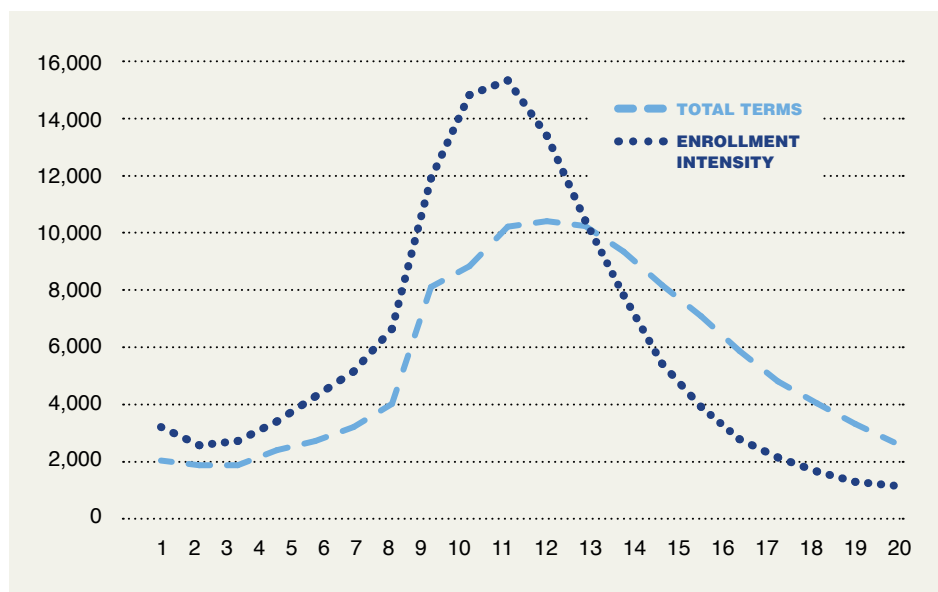


Figure 7
Total Terms and Enrollment Intensity Comparison before Initial Associates Completion

Figure 8
Total Terms and
Enrollment Intensity
before Bachelor's
Degree Completion



status distributions are shifted to the left compared to the total enrollment distributions. This supports the assumption that the total terms method penalizes student veterans when enrolled at a less than full-time enrollment status. In addition, the peaks of the sum of enrollment status distributions are higher compared to the total terms distribution. This suggests more student veterans are completing their initial degrees in the normative amount of full-time terms, but they may need more terms at less than full-time status to do so due to interruptions, breaks, or less than full-time enrollment.

What do we know about student veterans' pace to their first degree?

The enrollment intensity ratio combines the total term and sum of enrollment status, creating a measure that provides a holistic measure of the student veteran's academic pace to their degree and results in an average enrollment status across the student's progress to completion. This measure shows the potential effect of a student veteran withdrawing from classes prior to the end of the term without penalizing them. An enrollment intensity ratio of one indicates the student veteran is enrolling at a full-time status for all of their enrolled academic terms without any withdrawals in the middle of the term, while an enrollment ratio of zero indicates that the student veteran has withdrawn from all their enrolled terms without completing them.

The enrollment intensity ratio calculation to the NVEST Project subset provides more information for some of the higher-than-typical total enrollment terms in

previous sections (see Table 10). Only 12.6 percent of the entire subset scored a one on the enrollment intensity, meaning they held full-time enrollment status for every academic term for which they were enrolled. However, over half (55.4%) of the entire subset had an enrollment intensity score of 0.75 or higher, suggesting on average during their academic progress they maintained at least three-quarters full-time enrollment status through their academic careers. The average enrollment intensity for the subset was 0.74 with the median score at 0.77, and the most frequent score was 1.00—full-time enrollment status.

Ratio	Percent
0.00–0.24	0.8
0.25–0.49	10.4
0.5–0.74	33.1
0.75–0.99	43.1
1.00	12.6

N = 391,910

Table 10
Frequency of Initial
Degree Enrollment
Intensity Ratio for
NVEST Project

What is the overall picture of student veterans who are using the Post-9/11 GI Bill?

Seven out of ten (71.6%) student veterans who have used the Post-9/11 GI Bill have either earned a post-secondary degree or are continuing to work toward a certificate or degree. Student veterans are persistent post-secondary completers. Like many other non-traditional post-secondary groups, student veterans may face many obstacles in the path to completion. Student veterans tend to be older, more than half of this subset were more than 22 years old when they initially enrolled in a post-secondary academic program, and many have families, may be employed, and may have service-connected disabilities (Cate, 2016). Others, such as reservists and guard members, may face interruptions in their enrollments due to unplanned unit activations. Despite these potential interruptions and obstacles, a strong majority of student veterans persist in their post-secondary academic careers and complete a post-secondary certificate or degree.

How many degrees has the Post-9/11 GI Bill produced?

The findings so far have focused on student veterans' academic outcomes, utilizing the Post-9/11 GI Bill benefit data as a method to create a subset of student veterans. However, this does not present an accurate picture of the academic outcomes the Post-9/11 GI Bill helped to achieve, as student veterans' post-secondary enrollment is not dependent on their GI Bill usage. They could have enrolled in post-secondary courses and earn degrees prior to using their GI Bill benefits, thus inflating the number of academic outcomes the Post-9/11 GI Bill has helped, at least in part, to create. By removing student veterans' post-secondary completions earned prior to their first Post-9/11 GI Bill payment, a more accurate measure of the Post-9/11 GI Bill outcomes can be produced. The Department of Veterans Affairs included the date of the student veterans' first Post-9/11 GI

Bill payment in the NVEST data. This variable allows the filtering out of student veterans' completion records prior to their use of GI Bill benefits, leaving only academic outcomes that occurred after their use of the Post-9/11 GI Bill.

Filtering out academic completions earned prior to their use of Post-9/11 GI Bill benefits, 347,564 student veterans have completed a post-secondary certificate or degree after using the Post-9/11 GI Bill benefits, 23 percent of which are female. In addition, 87,018 (25.0%) of this group have earned multiple post-secondary certificates and/or degrees, which are included in the findings. This results in a grand total of 453,508 post-secondary certificates or degrees that the Post-9/11 GI Bill at least in-part helped to fund.

Bachelor degrees (162,567) accounted for the most degrees earned after the use of the Post-9/11 GI Bill, followed by Associate degrees (100,760), Masters degrees (67,928), Vocational Education Certificates (38,968), Doctorates or Post-Doctorate degrees (10,369), and Post-Baccalaureate certificates, such as teaching or counseling certificates (786). Based on the frequency of the degree levels, student veterans appear to be using their Post-9/11 GI Bill benefits to earn more advanced degrees, 63.4 percent of the completed degrees were at the bachelor's degree level or higher. Also, four times as many bachelor's degrees were earned after using Post-9/11 GI Bill benefits compared to vocational education certificates.

How does use of the Post-9/11 GI Bill alter student veterans' enrollment status?

An outcome of interest this report focused on is student veteran's enrollment status as a proxy of enrollment intensity. It is presumed that due to the Post-9/11 GI Bill, student veterans will be able to pay for and enroll in more academic credits thus increasing their pace or enrollment intensity. However, no large scale analysis has been conducted to confirm or refute that presumption. By analyzing enrollment intensity before and after usage of the Post-9/11 GI Bill, the project can provide the first empirical evidence to answer whether or not using the Post-9/11 GI Bill effects student veterans' enrollment intensity and the size of the effect.

To investigate this question, the project began with comparisons at the individual term level for changes in enrollment terms. The NVEST Project data was able to be separated into pre-GI Bill use and post-GI Bill use with the addition of the date of the first Post-9/11 GI Bill payment. The individual academic terms were assigned into the pre-GI Bill use or post-GI Bill use categories. Comparing the individual academic terms for the entire NVEST Project, a slight majority (51.6%) were in the Post-GI Bill use category. Initial examination of the individual academic terms within these groups found a 10.9 percent increase in the number of full-time enrollment academic terms between pre-GI Bill use and post-GI Bill use (see Table 11). This increase was a result of a decrease in the lower level enrollment status, half-time enrollment, less-than-half time enrollment, and withdrawals / leave of absence. This results provides initial evidence that the Post-9/11 GI Bill increases the percentage of full-time enrollment of academic terms, however it does

Academic Status	Pre-GI Bill Use		Post-GI Bill Use	
	N	Percent	N	Percent
Withdrawal/Leave of Absence	508,140	9.6	455,123	8.1
Less-Than-Half time enrollment	636,289	12.0	409,415	7.3
Half-Time enrollment	1,420,948	26.8	1,156,485	20.5
Three-Quarters enrollment	0	0.0	90,299	1.6
Full-Time enrollment	2,729,146	51.6	3,523,248	62.5
Total	5,294,523		5,634,570	

Table 11
Comparison of
Enrollment Status
by GI Bill Usage

	Pre-GI Bill Use		Post-GI Bill Use		Diff (j-i)	Cohen's d
	M	SD	M	SD		
Number of Terms Enrolled	6.77	7.00	7.95	6.27	1.18	0.18
Sum of Enrollment Intensity	4.73	5.49	6.06	5.59	1.33	0.24
Enrollment Intensity Ratio	0.68	0.24	0.73	0.22	0.05	0.22

Table 12
Mean Comparison
of Individual
Student Veteran
Enrollment Status by
GI Bill Usage

not show if student veterans increase their enrollment status after using their Post-9/11 GI Bill benefits.

The next step in this analysis was to explore if student veterans also increased their enrollment status after using their Post-9/11 GI Bill benefits. To answer this, a paired analysis was conducted to examine any changes in enrollment status or intensity before and after using their Post-9/11 GI Bill benefits. The pair analysis looked at three outcome measures used in this report, number of terms enrolled, the sum of the enrollment status, and the enrollment intensity ratio (see Table 12). As with the previous statistical analyses for this report, the degree to the differences between the groups were focused on, rather than the inferential analyses, and will use the same classifications for small, medium, and large effect sizes.

Comparing the number of terms an individual student enrolled pre-GI Bill to their number of terms post-GI Bill saw an average of one extra term after student veterans used their Post-9/11 GI Bill benefits, but no practical significance ($d = 0.15$) was found. This suggests that the number of terms a student veteran enrolls in after using their Post-9/11 GI Bill is the same as the number of terms they enrolled in prior to use. The sum of enrollment status showed an increase from pre-GI Bill use to post-GI Bill use, and the analysis found a small effect size,

($d = 0.24$) indicating a small practical significance before and after using Post-9/11 GI Bill benefits.

However, this effect could be a by-product of the increase in the number of enrollment terms noted previously. An analysis of the enrollment intensity ratio, the enrollment status per term divided by the number of terms, will take into account the increase in enrollment terms and provide a better understanding of the overall effect of the Post-9/11 GI Bill on an individual student veteran's enrollment status. A small increase in the enrollment intensity ratio was found from pre-GI Bill usage to post-GI Bill usage, and this difference has a small effect size ($d = .22$), showing some practical significance.

Together these comparisons showed the Post-9/11 GI Bill has a significant practical effect in the positive direction on individual student veteran's enrollment. In other words, after student veterans begin using their Post-9/11 GI Bill benefits, their enrollment status significantly increases. However, caution should be exercised when interpreting these results. Usage of the Post-9/11 GI Bill could also be measuring separation from military service which could potentially allow for more time to commit to larger class loads and an increase in enrollment status, as well as other factors not directly associated with GI Bill usage. A detailed analysis where GI Bill usage is connected to each academic term for the individual student veteran will help further explain the effect the Post-9/11 GI Bill has on student veterans' enrollment.

How many Post-9/11 GI Bill post-secondary completions can we expect?

Figure 9 displays the number of student veteran completions occurring after GI Bill use for each academic year ending on September 1, to allow for summer school degree completions. An increase in completions occur across the first four years, mirroring the increase in overall Post-9/11 GI Bill beneficiaries, with a potential plateauing occurring starting at the fifth year. While there is a slight decrease in the sixth year, it is likely due to the timing of the data match (September 1, 2015) and the fact that many schools had not yet had an opportunity to report summer completions for 2015. Overall, if the trend remains accurate, approximately 100,000 Post-9/11 GI Bill users will be earning degrees annually for the foreseeable future.

Breaking down the annual completions by the degree level awarded provides further insights and details into the trends (see Table 13). From the expected 100,000 post-secondary completions expected each year, it is projected that at least 40,000 of them will be at the bachelor's level; 25,000 at the associate level; 17,000 master's degrees; 10,000 vocational education certificates; and 1,500 doctorate or post-doctorate degrees.

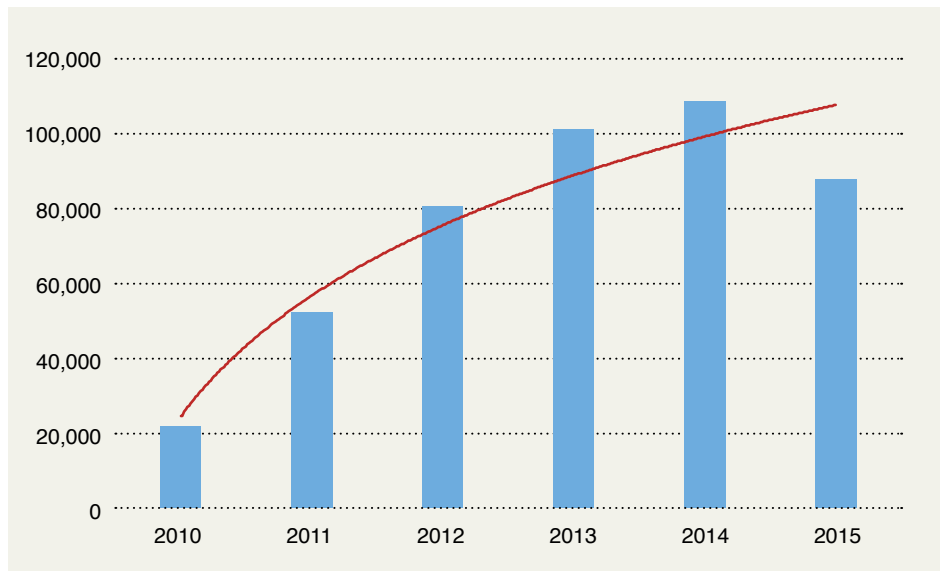


Figure 9
Number of Degrees
Earned after using
the Post-9/11 GI Bill
by Graduation Year
(2010–2015)

Program	2010	2011	2012	2013	2014	2015	Total
Certificate	2,329	5,074	6,916	8,640	9,778	6,230	38,968
Associate	5,508	13,339	19,698	22,496	22,810	16,909	100,760
Bachelor	8,018	17,986	27,863	36,509	39,268	32,923	162,567
Post-Bachelor	23	45	88	112	301	217	786
Masters	2,715	7,731	12,074	14,772	16,778	13,858	67,928
Doc/Post-Doc	464	769	1,097	1,349	1,677	1,509	6,865
Total	19,057	44,944	67,736	83,878	90,612	71,646	377,873 ²

1. The Post-9/11 GI Bill contributed at least partly to the completion of degree.

2. Missing Records = 75,634

Table 13
Comparison of Degree
Levels Earned After
using Post-9/11 GI Bill¹
by Graduation Year
(2010–2015)

What majors or degree fields are student veterans using their GI Bill benefits to pursue?

Along with certificate and degree completion records schools report to the National Student Clearinghouse, schools can also report the major or degree fields the student has earned by listing the Classification of Instructional Programs (CIP) code. The CIP code is a six-digit code developed by the Department of Education classification system that groups majors and degree fields into different academic disciplines. The six-digit CIP is the most detailed, while the four-digit and two-

digit are more general groupings. For ease of reporting, the most general (two-digit CIP) is reported and discussed here (See Appendix B).

By far, the largest number of degrees (96,270) were in the Business, Management, Marketing, and Related Support Services majors. It takes the next three majors to equal the number of degrees in Business, Health Professions (37,138), Liberal Arts and Sciences (34,812), and Homeland Security, Law Enforcement, Firefighting and Related Protective Services (34,199). The results also help to calm concerns regarding student veterans using Post-9/11 GI Bill funds to pursue majors that are not marketable in the workforce. Less than 100 of the nearly 450,000 degrees were in Leisure and Recreational Activities (62) and Basic Skills and Development/Remedial Education (33). However, in addition to high number of Business and Health-related degrees being earned, student veterans are earning degrees in high demand majors such as Computer Sciences (21,800), Engineering (8,057) and Engineering-related fields (10,153), as well as Education (10,532).

CONCLUSION

THE National Veteran Education Success Tracker (NVEST) Project marks a significant advancement in measuring student veterans' post-secondary academic outcomes and begins to evaluate the return on investment of the Post-9/11 GI Bill. The advancement in this case is the ability to obtain and analyze data on student veterans' post-secondary enrollment and academic outcomes within a couple of years of their attendance, instead of having to wait decades for the effects to appear in Federal data systems, such as the U.S. Census, as were done with previous editions of the GI Bill. This enables policy makers, stakeholders, and the public to assess the results and make data-driven decisions regarding veterans in higher education and the

[THE GI BILL] GIVES EMPHATIC NOTICE TO THE MEN AND WOMEN IN OUR ARMED FORCES THAT THE AMERICAN PEOPLE DO NOT INTEND TO LET THEM DOWN.

— PRESIDENT FRANKLIN D. ROOSEVELT, JUNE 22, 1944

Overall, student veterans in the NVEST Project are succeeding in higher education, and by extension are providing a strong ROI for the Post-9/11 GI Bill. Seven out of ten student veterans in the NVEST Project either have completed a post-secondary certificate or degree or were working on one at the time of the data match. Comparing a multi-year cohort with a single-year cohort is difficult as subset size, time frame, and methodology do not align. However, using the National Student Clearinghouse's Signature Report Number 10, *Completing College: A National View of Student Attainment Rates—Fall 2009 Cohort* (Shapiro, et al., 2016) may provide some deeper insights to the NVEST Project results. Student veterans in the NVEST Project had a completion rate comparable to the Clearinghouse's Fall 2009 Cohort findings (53.6% vs 52.9%). However, when compared to sub-groups who better match student veterans a larger distinction is found. The completion rate for the delayed entry sub-group (began postsecondary education between 20 and 24) for the 2009 Cohort was 33.6 percent and the adult learner sub-group (began postsecondary education 25 or older) was 39.2 percent lower than the NVEST Project completion rates. This suggests that student veterans are completing post-secondary certificate and degree programs at a higher rate than their age related peers; however, only by comparing similar cohorts could a definitive comparison be made, which is a focus for a future NVEST report.

Student veterans are also strongly using the Post-9/11 GI Bill to position themselves for the civilian workforce by earning degrees in marketable and high demand majors. One out of four student veterans (27.0%) complete a degree in the Business, Management, Marketing, or a related field, the most frequent individual degree field or major in the NVEST Project subset. When grouped together, degree fields and majors that constitute STEM and STEM-related fields were the second most frequent (14.4%) degree fields or majors student veterans pursued. And, one-in-ten (10.4%) student veterans earn a degree in Health-related majors. STEM, Business, and Health-related majors are the top three highest entry-level salaries and earn more than the average college graduate, according to a report by the Center for Education and the Workforce (CEW) at Georgetown University (Carnevale, Cheah, & Hanson, 2015). They also found individuals who majored in STEM, Business, and Health-related majors' had higher growth in their earnings over their career compared to other majors. In a separate report by CEW, examining the effect of the Great Recession on college graduates found that in the years following the Great Recession, unemployment rates for college graduates were lower when compared to the unemployment of all workers (Carnevale & Cheah, 2016). Those with a graduate degree or work experience had even lower unemployment rates after the recession. Thus, upon completing their post-secondary certificates and degrees, student veterans will have relatively stable employment and, especially those with Business and STEM degrees, strong income potential over their lifetimes.

In its short period of existence, the Post-9/11 GI Bill has already produced, either directly or indirectly, hundreds of thousands of post-secondary degrees

and impacted student veteran's enrollment patterns. The Post-9/11 GI Bill has produced nearly a half a million post-secondary certificates and degrees since it was established six years ago. In addition, the Post-9/11 GI Bill will help annually produce approximately 100,000 post-secondary certificate and degrees, barring any changes to the benefit or influence from outside factors. This includes approximately 20,000 post-baccalaureate degrees each year for the foreseeable future. The Post-9/11 GI Bill also has a benefit to student veterans by allowing them to take more classes during a term, thus helping them to complete their degrees faster and enter into the workforce.

This initial NVEST Project report is a high level overview of the Post-9/11 GI Bill's first six years of existence. Similar to an annual physical exam, it provides an overall health status on both veterans in higher education in terms of post-secondary academic completion, time-to-degree, and degree fields they earn, as well as the number, level, and type of degrees the Post-9/11 GI Bill has produced. These early results provide evidence that with the help of the Post-9/11 GI Bill, student veterans are earning marketable, college degrees that will prepare them for the civilian workforce. While this high level overview provides a healthy outlook for both student veterans and the Post-9/11 GI Bill, future NVEST reports will dive deeper into the data. For example, parsing the entire subset into more traditional cohort years, will allow for better comparisons to other research reports showing clearer differences than a high level analysis. Also, an exploration and comparison of student veterans' paths to degree may provide new insights on how student veterans' choice of their initial school level (2-year vs 4-year) and sector (public vs private vs for-profit) affect their post-secondary academic outcomes. These reports will help evaluate potential areas of concern and offer recommendations for the Post-9/11 GI Bill and ways to provided improved support for veterans in higher education.

REFERENCES

- Altschuler, G., & Blumin, S. (2009). *The GI Bill: The New Deal for Veterans*. USA: Oxford University Press.
- Angrist, J. D., Chen, S. H., & Song, J. (2011). Long-Term Consequences of Vietnam-Era Conscription: New Estimates Using Social Security Data. *The American Economic Review*, 101(3), 334–338.
- Baum, S., Ma, J., & Payea, K. (2013). *Education Pays 2013*. The College Board.
- Carnevale, A. P., & Cheah, B. (2016). *From Hard Times to Better Times*. Washington, DC: Center for Education and the Workforce. Retrieved from <https://cew.georgetown.edu/wp-content/uploads/HardTimes2015-Report.pdf>
- Carnevale, A. P., Cheah, B., & Hanson, A. R. (2015). *The Economic Value of College Majors*. Georgetown University Center on Education and the Workforce. Retrieved from <https://cew.georgetown.edu/cew-reports/valueofcollegemajors/>
- Cate, C. A. (2014). An Examination of Student Veteran Completion Rates over Service Eras: An In-Depth Analysis of the 2010 National Survey of Veterans. 1(2). Student Veterans of America. Retrieved from <http://bit.ly/1VI4la1>
- Cate, C. A. (2014). *Million Records Project: Research from Student Veterans of America*. Washington, DC: Student Veterans of America.
- Cate, C. A. (2016, February). SVA Spotlight: Student Veteran Demographics. Retrieved from <http://studentveterans.org/images/SVASpotlightBrief-1.pdf>
- Cho, S. H., Xu, Y., & Kiss, D. E. (2015). Understanding Student Loan Decisions: A Literature Review. *Family and Consumer Sciences Research Journal*, 43(3), 229–243.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Committee on Veterans Affairs. (1972). *The Three GI Bills*. Washington, DC: U.S. Government Printing Office, 1972.
- Department of Veterans Affairs. (2010). *National Survey of Veterans, Active Duty Service Members, Demobilized National Guard and Reserve Members, Family Members, and Surviving Spouses*. Washington, DC: Department of Veterans Affairs.
- Educational Testing Service. (1973). *Final Report on Education Assistance to Veterans A Comparative Study of Three G.I. Bills*. Ann Arbor: University of Michigan Library.
- Exec. Order No. 13607. (2012). 77 C.F.R. 25861. Retrieved from <https://www.gpo.gov/fdsys/pkg/FR-2012-05-02/pdf/2012-10715.pdf>
- Higher Education Opportunity Act. (2008). P.L. 110-315. Retrieved from <https://www.gpo.gov/fdsys/pkg/PLAW-110publ315/pdf/PLAW-110publ315.pdf>
- Hiltonsmith, R. (2013). *At What Cost? How Student Debt Reduces Lifetime Wealth*. Retrieved from <http://www.demos.org/sites/default/files/imce/AtWhatCostFinal.pdf>
- Humes, E. (2006). *Over Here: How the G.I. Bill Transformed the American Dream*. Harcourt.

- Kena, G., Hussar W., McFarland, J., de Brey, C., Musu-Gillette, L., Wang, X., . . . Dunlop Valez, E. (2016). *The Condition of Education 2016*. Washington, DC: U.S. Department of Education, National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2016/2016144.pdf>
- Military One Source. (2014). *2014 Demographics Profile of the Military Community*. Retrieved from <http://download.militaryonesource.mil/12038/MOS/Reports/2014-Demographics-Report.pdf>
- Olsen, K. W. (1974). *The G.I. Bill, the Veterans, and the Colleges*. Lexington, KY: The University Press of Kentucky.
- Shapiro, D., Dundar, A., Wakhungu, P. K., Yuan, X., Nathan, A., & Hwang, Y. (2016). *Completing College: A National View of Student Attainment Rates—Fall 2009 Cohort*. Herndon, VA: National Student Clearinghouse Research Center. Retrieved from <https://nscresearchcenter.org/wp-content/uploads/SignatureReport10.pdf>
- Stanley, M. (2003). College Education and the Midcentury GI Bills. *The Quarterly Journal of Economics*, 118(2), 671–708.
- Subcommittee on Education and Health of the Joint Economic Committee. (1988, December 14). *A Cost-Benefit Analysis of Government Investment in Post-Secondary Education Under the World War II GI Bill*.
- United States Veterans Administration. (1976). *Completion Rates for Education and Training under the Vietnam Era GI Bill: A Study*. Ann Arbor: University of Michigan Library.
- US Census Bureau. (2012). *American Community Survey*. Washington, DC: US Census Bureau.
- Veteran Administration Press Release. (1964, June 21). 2.

APPENDIX A

Majors of
Total Degrees
Earned by
Student
Veterans
in NVEST
Project
Sample

	Majors or Degree Fields	N	Percent
	Business, Management, Marketing, and Related Support Service	154,906	20.1
STEM	Computer and Information Sciences and Support Services	31,160	4.1
	Engineering Technologies and Engineering-Related Fields	20,387	2.7
	Engineering	12,115	1.6
	Biological and Biomedical Sciences	7,532	1.0
	Physical Sciences	3,337	0.4
	Natural Resources and Conservation	2,700	0.4
	Mathematics and Statistics	2,037	0.3
	Agriculture, Agriculture Operations, and Related Sciences	1,719	0.2
	Science Technologies/Technicians	855	0.1
	Communications Technologies/Technicians and Support Services	802	0.1
			10.7
	Liberal Arts and Sciences, General Studies and Humanities	69,018	9.0
	Health Professions and Related Programs	59,207	7.7
	Homeland Security, Law Enforcement, Firefighting and Related	55,993	7.3
	Social Sciences	27,276	3.5
	Education	17,735	2.3
	Multi/Interdisciplinary Studies	16,300	2.1
	Mechanic and Repair Technologies/Technicians	16,199	2.1
	Psychology	15,265	2.0
	Transportation and Materials Moving	11,912	1.6

Majors or Degree Fields	N	Percent
Public Administration and Social Service Professions	10,669	1.4
History	7,666	1.0
Visual and Performing Arts	6,208	0.8
Legal Professions and Studies	6,141	0.8
Communication, Journalism, and Related Programs	5,774	0.8
Parks, Recreation, Leisure, and Fitness Studies	5,166	0.7
Personal and Culinary Services	5,100	0.7
English Language and Literature/Letters	4,390	0.6
Precision Production	3,140	0.4
Construction Trades	3,088	0.4
Theology and Religious Vocations	2,206	0.3
Philosophy and Religious Studies	2,149	0.3
Foreign Languages, Literatures, and Linguistics	1,969	0.3
Family and Consumer Sciences/Human Sciences	1,758	0.2
Military Technologies and Applied Sciences	1,714	0.2
Area, Ethnic, Cultural, Gender, and Group Studies	1,520	0.2
Architecture and Related Services	1,055	

Less than 0.01%: Basic Skills and Developmental/Remedial Education; Citizenship Activities;
High School/Secondary Diplomas and Certificates; Leisure and Recreational Activities; Library Science;
Military Science, Leadership and Operational Art; Residency Programs;
Health-Related Knowledge and Skills; Interpersonal and Social Skills

Frequency Missing = 172,740

APPENDIX B

Majors of
Degrees
Earned by
Student
Veterans
After using
Post-9/11
GI Bill

Majors or Degree Fields		N	Percent
Business, Management, Marketing, and Related Support Services		96,270	27.0
STEM	Computer and Information Sciences and Support Services	21,800	6.1
	Engineering Technologies and Engineering-Related Fields	10,153	2.8
	Engineering	8,057	2.3
	Biological and Biomedical Sciences	4,311	1.2
	Natural Resources and Conservation	1,972	0.6
	Physical Sciences	1,869	0.5
	Agriculture, Agriculture Operations, and Related Sciences	1,121	0.3
	Mathematics and Statistics	1,075	0.3
	Science Technologies/Technicians	619	0.2
	Communications Technologies/Technicians and Support Services	509	0.1
Health Professions and Related Programs		37,138	10.4
Liberal Arts and Sciences, General Studies and Humanities		34,812	9.8
Homeland Security, Law Enforcement, Firefighting and Related Protective Services		34,199	9.6
Social Sciences		14,977	4.2
Education		10,532	3.0
Mechanic and Repair Technologies/Technicians		9,769	2.7
Multi/Interdisciplinary Studies		8,798	2.5
Psychology		8,510	2.4
Public Administration and Social Service Professions		7,436	2.1

Majors or Degree Fields	N	Percent
Transportation and Materials Moving	5,621	1.6
History	4,268	1.2
Legal Professions and Studies	4,266	1.2
Personal and Culinary Services	4,013	1.1
Visual and Performing Arts	3,787	1.1
Parks, Recreation, Leisure, and Fitness Studies	3,656	1.0
Communication, Journalism, and Related Programs	3,123	0.9
English Language and Literature/Letters	2,342	0.7
Precision Production	2,340	0.7
Construction Trades	2,072	0.6
Theology and Religious Vocations	1,534	0.4
Philosophy and Religious Studies	1,215	0.3
Family and Consumer Sciences/Human Sciences	1,130	0.3
Foreign Languages, Literatures, and Linguistics	959	0.3
Architecture and Related Services	732	0.2
Area, Ethnic, Cultural, Gender, and Group Studies	694	0.2
Military Technologies and Applied Sciences	616	0.2
Less than 0.01%: Library Science, Leisure and Recreational Activities, Military Science, Leadership and Operational Art, Basic Skills and Developmental/Remedial Education, Residency Programs, Health-Related Knowledge and Skills, High School/Secondary Diplomas and Certificates, Citizenship Activities		

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