

MILLION  RECORDS
PROJECT

Research from Student Veterans of America



A REVIEW OF
VETERAN ACHIEVEMENT IN
HIGHER EDUCATION



STUDENT VETERANS
of AMERICA

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Million Records Project

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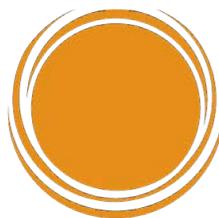
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Executive Summary

Accurate data on the postsecondary academic outcomes of today's generation of student veterans have been difficult to find. Inconsistent methods of collecting such information has led to confusion about the completion rates of student veterans in higher education, and without strong, empirical data, the uncertainty will persist.

The Million Records Project was envisioned, planned, and implemented by Student Veterans of America to address these gaps in knowledge and, with additional research, ultimately determine best practices and policies that promote student veteran success. The result of a public-private partnership among Student Veterans of America, the National Student Clearinghouse, and the U.S. Department of Veterans Affairs, the Million Records Project explores the postsecondary academic outcomes of nearly 1 million student veterans who initially used Montgomery and Post-9/11 GI Bill benefits between 2002 and 2010. The outcomes explored in the first phase of the project include student veteran postsecondary completion rates, time-to-completion, level of education, and degree fields.

The Million Records Project's initial results showed strong postsecondary outcomes for the current generation of student veterans. A majority (51.7 percent) of student veterans in this sample earned a postsecondary degree or certificate, despite the challenges they face. Like other nontraditional student populations, they tend to be older, have families to support, and juggle employment and school. Unlike their nontraditional peers, however, student veterans are unique in that they may delay their enrollment or interrupt their progress in higher education due to military obligations, and may have service-connected disabilities.

As Reservists and National Guard units perform a greater function in today's military, the perception that most veterans join the military after high school, serve their country, separate

from service, and then enter higher education is changing. Consequently, veterans follow very different paths to graduation compared with their traditional peers. Despite these and other challenges common to nontraditional students, student veterans are persisting towards their educational goals and succeeding. At both the two- and four-year degree level, the majority of veterans who graduate do so within four and five years respectively—a rate similar to the traditional student population.

The vast majority of student veterans are enrolling in public institutions (79.2 percent), with a smaller percentage enrolling fairly evenly in private nonprofit (10.7 percent) and proprietary schools (10.1 percent). Following a similar distribution, the large majority of student veterans who graduate do so from public schools (71.7 percent), with the remaining population graduating in much smaller but fairly even percentages from private nonprofit (15.5 percent) and proprietary (12.9 percent) schools. Based on the sector of initial enrollment, the private nonprofit sector had the highest student veteran graduation rate (63.8 percent), though a significant number of those students (21.6 percent) actually completed their degree at a public or proprietary institution.

Of those that completed, approximately 9 out of 10 (89.7 percent) initially earned degrees at the associate level or higher. In addition, many student veterans achieve higher levels of education: 31.3 percent of the sample who initially earned a vocational certificate, 35.8 percent of the sample who initially earned an associate, and 20.8 percent of the sample who initially earned a bachelor's degree went on to also earn a degree at a higher level. Results also indicate that a high percentage of student veterans are pursuing degrees in business, public service, health, science, and engineering.

The Million Records Project represents one of the most comprehensive examinations of student veterans' postsecondary academic success in decades. The initial results of the project are critical first steps in filling research gaps regarding student veteran outcomes, but more is still needed. This and future studies have the potential to aid policymakers, institutions of higher education, and other stakeholders as they decide how best to allocate resources to better serve our nation's veterans. In addition, Veterans Service Organizations, such as Student Veterans of America, The American Legion, and Veterans of Foreign Wars, can use this new, up-to-date information to advocate more effectively on behalf of their constituents. It is Student Veterans of America's hope that the results of this project will demonstrate that America's investment in its nation's veterans is paying off—confirming that today's veterans are earning college degrees, entering the workforce armed with the skills and knowledge they need to succeed, and continuing to contribute to society in meaningful ways.

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Introduction

For nearly 70 years, veterans have used the GI Bill to ease their transition from military service to the civilian workforce. The benefit provides valuable financial support to help veterans afford the cost of attending postsecondary educational and vocational training programs and persist to degree attainment.

Historians and economists have well documented the positive, beneficial outcomes that the original GI Bill produced for World War II veterans and the United States economy (Bound & Turner, 2002; Greenberg, 1997; Stanley, 2003). However, these studies were historical in nature—conducted several decades after that era’s GI Bill benefits concluded and once those veterans entered the workforce. Historical research, while it provides useful insights, it is not as valuable to policymakers and stakeholders who rely on current data to inform their decision-making process.

In addition, this generation of student veterans differs from those of the Cold War Era who differed from Vietnam Era student veterans who differed from those who emerged after World War II. As the military continuously adapts to current circumstances, today’s veterans reflect such changes. For example, Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) mobilized more reservists and National Guard personnel than previous combat eras. The effects of a mid-term mobilization on the academic outcomes of these service members remain largely unknown. This lack of knowledge makes it difficult for college and university administrators and faculty to implement proper policies that enable student veterans to deal with such disruptions, withdraw appropriately, and then re-enroll in school.

With more than 1 million beneficiaries having used or currently using the Post-9/11 GI Bill, the need to report on their postsecondary academic outcomes has significantly increased.

The Post-9/11 GI Bill is a massive investment of more than \$30 billion in the success of our nation's veterans. However, a lack of data on their postsecondary outcomes, and the lack of an established method to collect such data, make it difficult to accurately measure the return on the GI Bill investment. National databases often fail to accurately identify student veterans or track their postsecondary academic outcomes. National surveys are also ill-equipped to measure the academic success of student veterans due to response bias and sampling error.

Lack of information on the postsecondary outcomes of student veterans also limits the efficacy of those tasked with supporting them, such as higher education institutions, policymakers, service providers, and other key stakeholders. Scarce resources are often allocated to programs that have not been empirically evaluated to determine how they impact a student veteran's postsecondary academic outcomes. Without an empirical study to measure the postsecondary success of a large sample of student veterans, the public's only source of knowledge on these individuals comes from media portrayals, anecdotal stories, word of mouth, or case studies, which are difficult to validate and generalize to the entire student veteran population. Finally, if an unfounded and unsubstantiated perception develops that student veterans are doing poorly in college, Congress may believe that taxpayer dollars are being wasted on incomplete educations, and the GI Bill may be cut. Any reduction in benefits will have a ripple effect on a separating veteran's life trajectory. With little or no postsecondary education or vocational training, he or she will be ill-prepared to enter today's credential-dependent civilian workforce and compete for high-paying, sustainable careers.

The need for empirical data to drive policy and programmatic investments regarding student veteran outcomes led to the development of the Million Records Project (MRP). The MRP, a public-private partnership between the U.S. Department of Veterans Affairs (VA), the

National Student Clearinghouse (NSC), and Student Veterans of America (SVA), was designed to address many of the weaknesses found in previously established national databases and surveys. By matching VA and NSC data, SVA analyzed a national sample of 1 million student veterans who first used their GI Bill benefits between 2002 and 2010 to accurately measure the postsecondary academic outcomes of the current generation of GI Bill beneficiaries. The MRP, for the first time in the GI Bill's history, provides policymakers, stakeholders, and the American public accurate, near real-time data on the completion rate, time to degree completion, level of education, and degrees pursued for today's student veterans.

This report summarizes the results of the project and will enable policymakers and stakeholders to make data-driven decisions that will affect millions of current and future student veterans. The MRP also provides institutions of higher education a benchmark against which they can compare their own student veteran completion rates, and it significantly adds to the limited amount of research on the topic while also setting the stage for future studies on student veterans and other nontraditional student populations.

Literature Review

Introduction

Two different storylines have developed in recent years regarding student veteran postsecondary completion rates: one in which data appear to support the notion that student veterans have a high postsecondary dropout rate and the other that has evidence supporting high student veteran postsecondary completion rates. The review will first examine available evidence regarding the potentially high postsecondary dropout rate of student veterans and the risk factors associated with such results. It will then explore the contrary storyline of student veterans succeeding in high numbers in higher education. The review will continue with a discussion on the weaknesses found in national databases and how that contributes to the confusion surrounding student veteran postsecondary academic outcomes. The literature review concludes with an overall description of the Million Records Project and its potential contribution to this field of research.

Storyline 1: Student Veterans Are Not Completing Postsecondary Programs

Nontraditional characteristics. Horn (1996) uses seven characteristics to classify postsecondary students as “nontraditional”: delayed enrollment; part-time enrollment; financial independence; full-time employment while enrolled; having dependents; single parent; and did not receive standard high school diploma. Horn also establishes a scale of nontraditional status based on the number of nontraditional characteristics the student met. A student having one nontraditional characteristic ranked as “minimally nontraditional”; those with two or three nontraditional characteristics are classified as “moderately nontraditional”; and having four or more nontraditional characteristics means one is “highly nontraditional.” Using these classifications and U.S. Department of Education data, Horn found that nontraditional students

were less likely than traditional students to have completed their degree after five years and were more likely to have withdrawn from higher education. Horn also found that the fewer nontraditional characteristics a student had, the more likely it was that he or she would have earned a bachelor's degree in five years.

By applying Horn's characteristics to student veterans from the post-World War II era, it becomes clear that they were the first nontraditional students to enroll in higher education in large numbers. As Humes (2006) describes, many student veterans of the post-World War II era were older, married, had children for at least part of their collegiate career, and were financially independent. Most of today's student veterans mirror their predecessors and can also be classified as nontraditional students using Horn's characteristics. They are frequently older than their traditional counterparts due to a multiyear break between high school and college; a high percentage are married and have families of their own. Although not a characteristic listed by Horn, student veterans also have a greater depth and breadth of world experiences compared with traditional students, largely due to their military service and overseas experiences with other cultures (Ackerman, DiRamio, & Garza, 2009; DiRamio, Ackerman, & Mitchell, 2008).

Students with disabilities. College students with physical and cognitive disabilities, including mental health diagnoses, often have difficulty persisting in and completing postsecondary educational and vocational programs. Hurst & Smerdon (2000) examined National Center for Education Statistics (NCES) data on students who attended community colleges and found differences in the persistence rates of students with disabilities (53 percent) compared with those without disabilities (64 percent). Other research found that students with disabilities might have lower academic results and lower confidence in their academic abilities compared with students without disabilities (Cosden & McNamara, 1997). Research focusing on

students with mental health diagnoses also suggests a link between psychological symptoms and academic performance, which subsequently leads to students' withdrawing from postsecondary institutions (Megivern, Pellerito, & Mowbray, 2003).

For service members and veterans, major technological and medical advances have increased the likelihood of surviving combat-related injuries. It has been estimated that 90 percent of injuries sustained in Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF) will be survived (Klocek, 2008). This is a striking increase when compared with 70 percent of battlefield injuries survived during the Vietnam War, and fewer than that in Korea and World War II. The U.S. Department of Defense reported that as of Feb. 28, 2014, approximately 51,000 service members have been wounded during OIF, Operation New Dawn (OND), and OEF, which indicates that a substantial portion of today's veterans may be enrolling in higher education with minor to severe service-related disabilities.

While physical injuries associated with battle, such as loss of limb or severe burns, are common among OIF and OEF service members, an increasing number of today's veterans have also sustained a traumatic brain injury (Klocek, 2008). Traumatic brain injuries (TBIs), sometimes known as the invisible wounds of war, are not nearly as recognizable as other physical disabilities but can be just as challenging for veterans to cope with. Also called "severe concussions," "close head wounds," and "mild brain injuries," TBIs occur when a person receives a severe blow to the head, either by a physical object or a concussion blast like that produced by a detonated improvised explosive device (Klocek, 2008). The symptoms of a TBI parallel those of a concussion. However, concussion symptoms typically dissipate after a day, while TBI symptoms can last for years or a person's entire life.

TBIs can also cause changes in a person's behavior and cognition, specifically memory. A person with a TBI may have difficulty focusing and recalling recent events. Hearing, vision, balance, and spatial orientation may also be impacted in persons with TBIs. While the effect of TBIs on student veteran academic persistence is unknown, it is clear that such cognitive injuries negatively impact one's ability to remember, remain focused, and see and hear well—all of which are vital to a college student's success.

In addition to TBIs, veterans of the current wars are susceptible to other “invisible wounds,” or mental health diagnoses, such as posttraumatic stress (PTS), depression, or substance abuse. Hoge, Auchterlonie, and Milliken (2006) found that the prevalence rate for any mental health disorder was 19.1 percent among OIF veterans and 11.3 percent among OEF veterans.

Service-related injuries, whether visible or invisible, will likely impact all facets of a veteran's post-service life, including their academics. For example, research has chronicled student veteran experiences in college (Ackerman, et al., 2009; DiRamio, et al., 2008) and found that veterans who sustained lasting wounds in battle may have unpredictable attendance in class due to pain and other symptoms associated with their injuries. In addition, the side effects from medicines used to treat physical pain or mental health diagnoses could affect a veteran's ability to concentrate, take notes, and remain alert, thus negatively affecting his or her academic performance (Church, 2009).

Given these findings, it is likely that a proportion of veterans from the recent military operations that enroll in higher education will have combat wounds, mental health diagnoses, or both.

Use of GI Bill benefits. Some media outlets have reported that 88 percent of student veterans drop out of their postsecondary educational and vocational program within the first year (Briggs, 2012; Wood, 2012). Veteran advocates, including SVA, The American Legion, and Veterans of Foreign Wars believe that claim to be inaccurate for a number of reasons. However, the statistic is discussed in this review because it is still commonly used as an indication of student veteran postsecondary academic outcomes, both by the media and general populace. What little is known about the 88 percent statistic, is that it is based on a weak methodology. Use of VA education benefits, specifically enrollment in the GI Bill, was used as a proxy for enrollment in a postsecondary institution. While use of VA education benefits is a strong method for identifying student veterans, it is a weak measure of persistence and academic outcomes. For example, student veterans may stop using VA education benefits but continue to remain in school, and supplement costs with other sources of financial aid (e.g., scholarships, grants, Title IV funds). In the process previously described, this student veteran would be classified as a dropout or withdrawal. This scenario also indicates that student veterans may not be using all of their GI Bill benefits to earn a degree, which can mistakenly be construed as leaving school prior to completion.

In summary, student veterans share characteristics with both nontraditional students and students with disabilities or mental health diagnoses. These groups of students typically have high postsecondary dropout rates. In addition, student veterans who delay using VA education benefits may be mistaken as college dropouts. Taken altogether, this evidence suggests that student veterans may have poor postsecondary academic outcomes.

Storyline 2: Student Veterans Are Completing Postsecondary Programs

While the evidence above suggests that student veterans face challenges that would typically lead to low postsecondary academic completion rates, evidence also exists that shows a high percentage of student veterans may be earning postsecondary degrees.

Historical evidence. Historically, veterans have a demonstrated record of academic success in postsecondary environments. Approximately 8 million of the nearly 16 million post-WWII student veterans who were eligible for the GI Bill earned postsecondary degrees or completed vocational training programs (Greenberg, 1997). Research from this era indicates that, as a group, the academic performance of student veterans, measured by cumulative GPA, was slightly higher than that of their nonveteran counterparts (Frederiksen & Schrader, 1952). Several other studies from the post-WWII era generally corroborated these findings (Garmezy & Crose, 1948; Gowan, 1949; Love & Hutchison, 1946). As for Vietnam War-era student veterans, a report from VA in 1976 found that approximately two-thirds completed their postsecondary programs (Department of Veterans Affairs, 1976). Joanning (1975) replicated and extended this research, finding that the academic performance of post-Vietnam-era student veterans, as measured by GPA, was equal to or better than their nonveteran counterparts.

It is also important to note several key environmental differences when comparing the postsecondary academic outcomes of GI Bill beneficiaries from past generations with those of today. The most notable difference is that most conflicts from World War II through the Vietnam War relied on a conscripted military force. Today's wars are being fought by an all-volunteer force. The modern military gives young adults a choice: volunteer for service or remain a civilian, in which case higher education is a viable option. For young men and women who lack the financial means or the skills to attend college, however, the choice to serve in the

military is more than a “call to duty;” it is a means of escaping environments that have little potential for socioeconomic advancement and limited vocational options by which to learn discipline, and potential trades (Teachman, 2007).

Along with the rise of an all-volunteer force, public policy changes have also enabled more young adults to enroll in postsecondary institutions rather than join the military. For example, the Higher Education Act of 1965 and other financial aid programs have made college affordable for many young people. These new financial aid policies, in combination with educational deferments for conscription, allowed more young men and women to go directly into postsecondary education from high school, and have resulted in the military having to compete with colleges and universities (Teachman, 2007).

Although veterans have historically performed well in higher education, today’s military and postsecondary environments are vastly different than those of the past, thus making it difficult to conclude that student veterans will continue to replicate the successes of their predecessors. Just as the military continues to innovate and change, so does each generation of student veterans. The current generation of student veterans faces different challenges upon separation than did their Cold War predecessors, who faced different challenges than Vietnam War veterans. A historical argument alone is insufficient to prove that today’s student veterans will succeed academically.

National surveys. Recent national surveys provide further evidence of a high rate of student veteran postsecondary completion. The 2010 National Survey of Veterans (2010 NSV; Westat, 2010), conducted by Westat for VA, examined and elicited feedback from VA beneficiaries on VA programs and services. In the section regarding education benefits, the 2010 NSV 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 (Westat, 2010). When analyzing the 2010 NSV by service era, 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. 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, 2014). It should be noted that this finding is preliminary and will most likely increase as time passes and more student veterans are able to complete their postsecondary programs.

Although the 2010 NSV seems to indicate a high student veteran postsecondary completion rate, the results become weaker when given a closer review, such as investigations into the completion rates of veterans who separated from the military after Sept. 11, 2001. The sample size for this group is extremely small, thus yielding weak conclusions. 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 provide an inaccurate response. In addition, the survey relies on a single question to measure completion. 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 that may lead to misinterpretation, 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. Finally, the NSV is typically conducted every 10 years, making the results less relevant and accurate and more difficult to interpret as time passes from the initial collection of data.

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. Therefore, it allows for comparisons between veterans and nonveterans within the U.S. population. While it does not specifically ask about completion, the education level reported can serve as a proxy for degree attainment. The 2012 ACS shows that a larger percentage of nonveterans self-reported attainment of a bachelor's degree or higher as compared with veterans (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 a degree, withdrew, 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 attend using their education benefits. 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 his or her postsecondary studies, making it difficult to conduct detailed analysis on student veteran postsecondary academic outcomes. As a result, researchers cannot ascertain with certainty whether or not the small difference between the education levels of veterans and nonveterans will remain stable across all age groups.

National Databases. Contributing to the confusion regarding student veteran postsecondary academic outcomes is the fact that national-level data on student veterans have been difficult to find, analyze, and interpret due to poor collection methods, narrow inclusion criteria, and mistakes 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.

U.S. Department of Education. 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 track 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 collects data only on first-time, full-time students entering in the fall term. The database excludes many students who transfer schools, start at community colleges then transfer to a four-year university, temporarily withdraw from school for personal or military-related reasons, attend part-time at some point in their academic career, or those who

pursue on-the-job training or vocational certificates. Unfortunately, student veterans fit most of these characteristics and are often mistakenly removed from the database and not counted.

The National Postsecondary Student Aid Study (NPSAS), a second NCES database that contains information about student veterans, also does so using a weak method. 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 FAFSA contains two questions about military service: 1) does the applicant currently serve on active duty in the U.S. Armed Forces? and 2) is the applicant 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 reservist 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 benefits are not included in Title IV funding under the Higher Education Opportunity Act (HEOA, 2007). 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.

Furthermore, Department of Education databases use a very broad definition of “veteran education benefits” (HEOA § 420(c), 2007). 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. This makes it extremely difficult to isolate the impact of specific benefits.

Department of Veterans Affairs. In contrast to the Department of Education, VA is able to identify nearly every student veteran, but has only recently been instructed (through Executive Order 13607) to track and collect information on student veteran outcomes. Historically, the Veterans Benefits Administration (VBA) of VA is mainly responsible for disbursing tuition payments to schools after a student veteran’s enrollment is verified. To accomplish this task, VA collected information related only to the amount and destination of the benefit, such as the student veteran’s institution, enrollment intensity (part-time or full-time), and the amount of the disbursement. These limited data do not accurately translate into student veteran postsecondary academic outcomes. For example, some student veterans who exhaust their education benefits may go on to complete postsecondary degrees or credentials, and others may complete degrees or credentials before using all of their benefits.

While VA has recently established a new system in its certification process to obtain additional data on student veteran academic outcomes, a gap in the collection process still exists. The VA will not have data on a student veteran’s enrollment and completion if the veteran is not using his or her GI Bill. While use of VA education benefits is a strong method of identifying

student veterans, it is a weak stand-alone method for determining postsecondary academic outcomes, as it does not take into account student veterans who complete certificates or degrees using other means of financial aid.

In summary, compared with Department of Education databases, the VA education benefits database, the 2010 NSV, and the ACS have better methods for identifying student veterans, methods that allow for more accurate estimates of their postsecondary academic outcomes. However, the VA benefits database, the 2010 NSV, and the ACS were not designed to measure or track postsecondary academic outcomes, which is the strength of the Department of Education's databases. These weaknesses have contributed to the current contradictory results and inaccurate perceptions of student veteran postsecondary completion. The 2010 NSV notes that the student veteran postsecondary completion rate is 68 percent; the ACS reports that 56 percent of veterans have completed at least some college or higher; and NCES indicates that the six-year time-to-completion rate for baccalaureate-level student veterans starting in 2003 was 9.9 percent (95 percent CI [4.2, 15.6]) and the six-year completion rate for associate degrees was 11.2 percent (95 percent CI [5.6, 16.7]; U.S. Department of Education, 2009).

The variance in the reports makes it difficult to clearly understand the postsecondary academic outcomes of student veterans. The ACS and 2010 NSV suggest that student veteran completion rates are high, but the U.S. Department of Education data suggest the exact opposite. Contradictory results make it nearly impossible for policymakers and stakeholders to make data-driven decisions.

The Paradox

The lack of clarity on student veteran postsecondary academic outcomes has led to the development of two contradicting storylines. One storyline suggests that student veteran

postsecondary completion rates are low, given that they are nontraditional students; many have service-related injuries or mental health diagnoses; some do not exhaust their VA education benefits. The second storyline suggests that student veteran completion rates are high, given that student veterans have a long history of college success that originates with the post-WWII generation of student veterans and two recent national surveys indicate that student veterans may have high postsecondary completion rates and levels of education. These seemingly contradictory stories form the paradox. How can both exist simultaneously?

One storyline of the paradox could be wrong. Perhaps veterans do not have “high risk” characteristics or belong in these “high risk” groups. This is unlikely. A wealth of research has established that veterans are nontraditional students who are generally older, have a break between high school graduation and college enrollment, are more likely to be married with families compared with traditional students, and some proportion of veterans have service-related injuries or mental health diagnoses. This would suggest that student veterans would have low postsecondary completion rates.

The survey results on the postsecondary success of student veterans could be wrong. Research on student veterans in general is scarce and accurate data on their academic outcomes are even more rare. While the two surveys mentioned, the 2010 NSV and the ACS, detail an individual’s veteran status and contain limited data on postsecondary information, they were not designed to provide in-depth data or analysis on student veteran postsecondary academic outcomes. In addition, the traditional national-level academic databases either do not accurately identify and track student veterans or these databases do not connect completion data with an individual’s veteran status.

If these surveys are correct, though, that indicates that the paradox exists and although student veterans share characteristics with students that historically have low rates of postsecondary completion, student veterans are resiliently overcoming such obstacles to achieve academic success. However, to fully investigate this concept, a new method of data collection and tracking of student veterans must be established. The new method must address the weaknesses found in the national-level surveys and databases previously described. First, it would have to be able to accurately identify current student veterans, excluding veteran dependents and active duty service members not using VA education benefits enrolled in postsecondary programs. Second, it would need to be able to track student veteran degree attainment at the individual level rather than the institutional level, so that student veterans are not excluded when they transfer schools or withdraw from college due to military service or personal reasons. Third, it would need to rely on objective data preferably collected directly from VA and institutions of higher education.

These criteria served as the basis for the Million Records Project.

Million Records Project

It is evident that current systems were not designed to effectively or accurately measure the postsecondary outcomes of student veterans. To better understand student veteran postsecondary completion rates, SVA entered into a partnership with VA and the National Student Clearinghouse (NSC) to create and develop the Million Records Project (MRP). The MRP addresses several of the weaknesses inherent in current federal databases and national surveys that track postsecondary academic outcomes, thus producing a more accurate estimate of student veteran completion rates.

Data From the U.S. Department of Veterans Affairs. The Million Records Project uses VA information to identify veterans who used education benefits. VA provided 500,000 records of veterans who initially used their Montgomery GI Bill Benefits (MGIB) between 2002 and 2010 and another 500,000 records of veterans who initially used their Post-9/11 GI Bill benefits between 2009 and 2010 for a total of 1 million records. VA confirms a veteran's status with the Department of Defense prior to distributing benefits, thus it is certain that the sample consists wholly of U.S. military veterans.

Data From the National Student Clearinghouse. The National Student Clearinghouse (NSC) is a nonprofit organization that collects student enrollment and degree data at the individual level directly from participating institutions of higher education that use the NSC's services. The NSC provides individual student enrollment and program completion to the education finance industry, the U.S. Department of Education, and to colleges and universities. At the time of this report's completion, the NSC collected data on approximately 96 percent of all postsecondary students in the United States.

In recent years, the NSC has done in-depth analysis of its own records to produce several research reports called Signature Reports, which focus on the postsecondary completion rates of U.S. college students. While similar in some respects to IPEDS, NSC's Signature Reports differ in that they include many postsecondary students (e.g., those who change enrollment intensity or transfer institutions) that are not part of IPEDS. The NSC's Signature Reports offer a more comprehensive measure of postsecondary completion in the United States.

By using the NSC's database, the Million Records Project obtained accurate program completion information based on institutional records—not self-reports—which reduces response error and survey-related biases and increases the validity of the data.

Utility of the Million Records Project

Establishing an accurate database by which to better measure student veteran postsecondary academic outcomes is a necessary first step to better supporting this population of students. Accurate data will allow student veterans to use their limited benefits more effectively by being more informed consumers, thus increasing completion rates and improving the return on the GI Bill investment. With a better understanding of national-level completion rates, individual schools and programs will be able to benchmark the success of their own student veterans. In addition, an accurate national rate of postsecondary completion allows Student Veterans of America and others to analyze the programs, practices, and services that increase such rates. Policymakers and stakeholders at all levels will begin to make data-driven decisions that impact the lives of student veterans. Finally, it will allow researchers to begin to determine whether student veterans are a unique group of nontraditional students or potentially require greater assistance to aid in their postsecondary completion.

Methods

Design

This was a secondary data quantitative analysis study designed to report student veteran postsecondary completion rates based on initial school enrollment cohorts, student veterans' time-to-completion, their highest level of education, and their majors or degree fields. A secondary purpose of this study was to explore differences in the primary outcomes of student veterans based on available demographic variables, such as branch of service and gender. Data were obtained from VA through a Freedom of Information Act (FOIA) request. VA, the NSC, and SVA collaborated to obtain completion data for 1 million student veterans who initially used their GI Bill benefits between 2002 and 2010. Data analyses were conducted using descriptive and inferential statistics including frequencies, means, and crosstabs.

Sample

The population of interest was United States military service members or veterans enrolled in a postsecondary educational or vocational training program between 2002 and 2010. The sample comprised 1 million veterans who either used the MGIB between 2002 and 2010 or the Post-9/11 GI Bill between 2009 and 2010. Of the 1 million records, roughly 10.1 percent (101,105) appeared in both the MGIB and the Post-9/11 GI Bill data files. The duplication occurred because some student veterans were eligible for both benefits and exercised their option of switching from the MGIB to the Post-9/11 GI Bill. These duplicates were removed, thus yielding a total sample size of 898,895 veterans who initially used their GI Bill benefits between 2002 and 2010.

According to public VA data, VA processed education benefits claims for 4,067,476 MGIB and Post-9/11 GI Bill veterans between 2002 and 2010 (Department of Veterans Affairs,

2013). This cumulative statistic includes first-time as well as previous GI Bill uses; it does not indicate that there were 4 million initial GI Bill users during that timeframe. However, the VA beneficiary data (4,067,476) can serve as a proxy for the total population size of MGIB and Post-9/11 beneficiaries between 2002 and 2010. As such, the Million Records Project sample covered 22.1 percent of all student veterans who used the MGIB and Post-9/11 GI Bill during the time period and produced a margin of error of 0.09 percent.

While use of the VA dataset 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 are excluded. Not only does this specific subgroup represent a small minority of the student veteran population, but the process to identify and include such individuals would have been extremely difficult and costly, and would have had minimal impact on the results.

The sample also excluded dependents to whom veterans have transferred their VA education benefits. For the most part, dependents have different obstacles to degree completion than student veterans. The goal of this project was to better understand the academic outcomes of student veterans. There is clearly a need to study dependents and they may be included in future projects. In addition, the transfer of 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.

Student veterans who used VA education benefits other than the MGIB or Post-9/11 GI Bill were also excluded. By focusing on the VA education benefits that are most utilized currently, the MGIB and Post-9/11 GI Bill, the research captures a more comprehensive and representative sample of today's student veterans. It is possible, though, that some individuals in

the sample had previously used the Department of Defense's (DOD) Tuition Assistance program (TA) or a different VA education benefit program to earn postsecondary credit. However, there is no method to match those in the MRP sample with information regarding TA usage, as it is a DOD program. Parsimony was also a factor in this decision. Developing a sample of beneficiaries using multiple VA education benefits programs and DOD data would have been extremely difficult and, as this was essentially a pilot project, simplicity was of paramount concern for SVA, VA, and the NSC. 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 registered for at least one course credit at a VA-approved postsecondary institution or program. Verification of a student veteran's enrollment was conducted by VA. VA requires postsecondary institutions and programs to certify a student veteran's enrollment before it disburses funds. In addition, schools must notify VA if there are any changes to a student veteran's enrollment status, such as addition or subtraction of credits or withdrawal from school.

Finally, the study 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 proprietary schools. This also includes traditional “brick-and-mortar” institutions, online programs, vocational certificate programs, and on-the-job training programs.

Variables

Outcomes of Interest. We focused on five indicators of student veteran postsecondary academic performance, based on data obtained from the NSC.

Postsecondary Completion. This variable is an omnibus measure of student veteran postsecondary completion. It includes completion from any postsecondary educational or vocational programs that report such data to the NSC. Vocational certificates, associate-level degrees, baccalaureate-level degrees, and postbaccalaureate degrees were thus analyzed.

Completion of Associate Degree. This variable focuses on the percentage of student veterans whose first degree, as reported by the NSC, was an associate-level degree. It includes students who attended public, private not-for-profit, and proprietary institutions. Student veterans who initially enrolled in a postsecondary educational or vocational program after December 31, 2010 were excluded from this analysis due to the two-year normative time-to-completion for associate degrees; a student who initially enrolled after December 31, 2010 would most likely not have had enough time to complete such a degree given the date of the data match.

Completion of Baccalaureate Degree. This variable focuses on the percentage of student veterans who earned an initial baccalaureate level degree, as reported to the NSC. It includes students who attended public, private not-for-profit, and proprietary institutions. Student veterans who initially enrolled in a postsecondary educational or vocational program after 2008 were excluded from this analysis due to the four-year normative time-to-completion for baccalaureate degrees; a student who initially enrolled after 2008 would have lacked sufficient time to complete such a degree.

Initial Degree Level. This variable focuses on the individual's initial degree level. This variable measures the level of the first degree an individual earned according to NSC records. It provides a baseline for any future degrees the individual may have earned.

Highest Level of Education Completed. This variable focuses on each student's highest level of education as reported to the NSC. This variable measures the highest degree earned by

each veteran in the sample up until the date of the data match. The GI Bill may have an indirect effect on a veteran's overall level of education in that attainment of higher degrees would not be possible if lower degrees were not earned with the help of the benefit. This variable expands upon the previous variable by including any professional or graduate degrees a student veteran earned, such as a master's or doctoral degree. However, it focuses only on the highest degree earned, excluding all lower level degrees.

Time-to-completion. The time it takes a student veteran to complete a degree is perhaps as important as earning the degree itself. Using data provided by the NSC, a time-to-completion variable was constructed by subtracting the student veteran's initial enrollment date from his or her initial degree completion date (if available). Summary statistics, the average, the middle response, and the most frequent responses, are reported for initial associate- and baccalaureate-level degrees.

In addition to reporting the summary statistics for student veterans' time-to-completion for associate and bachelor's degrees, a breakdown of student veterans' time-to-completion based on U.S. Department of Education guidelines is also reported. For associate level and other two-year degrees and certificates, the percentage of student veterans in this sample who completed their degree in two years (100 percent of time), three years (150 percent of time), and four years (200 percent of time) is reported. For baccalaureate degrees, the percentage of student veterans in this sample who completed their degree in four years (100 percent of time), five years (125 percent of time), and six years (150 percent of time) is reported.

Degree Field. In addition to reporting to the NSC whether students have completed their program, schools also have the option of reporting the academic field of the degree using the Department of Education's Classification of Instructional Programs (CIP) codes. While the full

CIP code is six digits, due to Personal Identifying Information (P.I.I.) concerns, only the first two digits were released by VA to SVA via the FOIA request. However, the truncated CIP codes allowed for broad comparisons among degree fields as well as discrete analyses.

The project analyzed and reported the top five most frequent degree fields for initial associate and bachelor's degrees from the sample. A secondary analysis and report on degree fields measured the proportion of the sample that earned degrees in science and engineering fields. The project used National Science Foundation guidelines for classifying CIP codes into Science and Engineering categories and reported the percentage of the sample whose initial degrees were in Science and Engineering fields at the associate and baccalaureate level.

Demographic Variables. Several independent variables were used in this study that will provide descriptive information, but also will be used to explore differences between student veteran subgroups.

GI Bill. Between 2002 and 2010, veterans were eligible for two GI Bill programs, the Montgomery GI Bill (MGIB) and the Post-9/11 GI Bill. Due to eligibility periods and the criteria for different VA education benefits programs, student veterans had the option of switching from the MGIB to the Post-9/11 GI Bill, if they were eligible for the Post-9/11 GI Bill. Therefore, three groups based on GI Bill eligibility were designated for this report: (1) MGIB Exclusive, (2) Both MGIB and Post-9/11 GI Bill, and (3) Post-9/11 GI Bill Exclusive. However, since the Post-9/11 GI Bill had been in existence for less than four years at the time of the data match, some outcome results for those who used only the Post-9/11 GI Bill are not reported. These student veterans have not had ample time to complete bachelor's degrees and any results would be considered premature and highly likely to change over the next few years.

Degree Attainment and Use of the GI Bill. Two variables were provided by VA. The first variable indicated whether the individual earned a degree at any level prior to using their GI Bill benefits. The second variable indicated whether the individual earned a degree after using their GI Bill benefit. These variables provided insight into when and how veterans utilized their GI Bill benefits to earn degrees.

Institutional Demographics. The data files analyzed for this project included limited institutional nonidentifying demographic information, such as degree level offered (two-year or four-year) and sector (public, private nonprofit, or proprietary). Comparisons were conducted between the larger groups, such as two-year versus four-year schools and programs.

It is important to note the coverage rate of each sector in the NSC database when making cross-sector comparisons. As of Dec. 30, 2013, NSC's coverage rate for the public and private nonprofit sectors is high (99.2 percent and 93.1 percent, respectively). The coverage rate for the proprietary sector is lower (67.5 percent). In addition, the coverage rates for the proprietary sector increased between the years of the sampling from 48.2 percent in 2003 to 53.7 percent in 2010. The total effect the coverage rate may have on reporting results for the proprietary sector is unknown, but the lower coverage most likely increases the potential error when reporting results for this sector. Therefore, drawing conclusions based on the institutional sector analysis should be done with caution.

Service Branch. A student veteran's service branch was the final independent variable used for comparisons. The VA collects a veteran's previous service branch at the time of application for VA benefits and then verifies it with the DOD. All five branches, Army, Air Force, Navy, Marine Corps, and Coast Guard, were included in the dataset and used in the comparisons. In addition to the five branches of the military, two 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 sample and had little influence on the overall results, there was no reason to exclude this group. They were included in the analyses.

Procedure

The sample was the result of a public-private partnership between VA, the NSC, and SVA. The VA identified a sample of student veterans based on their use of VA educational benefits (GI Bill usage). This sample was matched with NSC data that contains the degree attainment records of approximately 96 percent of postsecondary students in the United States. The NSC removed all institutional identifying information from the data prior to returning the matched data to VA. SVA helped facilitate the partnership between VA and NSC.

Step one of the process required VA to properly identify student veterans for the sample. VA created several filters to select appropriate individuals for inclusion. One filter excluded all veteran dependents (spouses and children) that used the GI Bill, thus creating a list of only veterans. Another filter excluded students who had received benefits while attending institutions that were known not to report data to the NSC. This filter was established to increase the sample's coverage rate. However, it may have inadvertently created an oversampling of the public and private nonprofit schools because of the low coverage rate among proprietary institutions. Once the filters were in place, VA randomly selected 1 million veterans from its education benefits databases who initially used their GI Bill benefits between 2002 and 2010. Half of the sample focused on veterans who initially used MGIB benefits and the other half used, at least in part, Post-9/11 GI Bill benefits.

Next, VA transferred the identifying information for the sample of student veterans, such as name, date of birth, and social security number, to the NSC 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 NSC followed the Family Educational Rights and Privacy Act (FERPA) to ensure and protect the privacy and anonymity of all individuals in the sample.

The NSC matched the data file provided by VA of veteran education benefit records with its own records of degree attainment and other academic outcomes, where available. The data match between the VA data file and the NSC database occurred on June 14, 2013. At that date an estimated 75 percent of schools reported degree attainment data for the spring 2013 graduating class. Matching at this time excluded any summer degree completers that would typically be included under the graduating class of 2013.

Of the 898,895 student veterans in the sample, the NSC found degree data for 859,297 individuals in its NSC data for a coverage rate of 95.6 percent. The 39,598 students without a record in NSC data most likely attended an institution of higher education that does not report postsecondary academic outcomes to the NSC. Missing academic data does not imply anything about that student's outcomes.

Once data from VA were matched with NSC data, NSC removed all institutional identifying information, such as name 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). NSC 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.

Results

Demographics

Table 1 presents the demographic results of the Million Records Project alongside a U.S. Department of Education report that profiles undergraduate students who used veteran education benefits during the 2007-2008 academic year (U.S. Department of Education, 2009).

Approximately 1 in 5 (21.1 percent) individuals in the sample were female, which is not unexpected considering that the DOD reports that 14.6 percent of current active duty personnel are female (Department of Defense, 2013). As females generally have higher postsecondary completion rates than men and the general student population has a more balanced ratio of men to women than did the MRP sample, the MRP's results may not be directly comparable to national completion rates. If the MRP sample included more women, it would have likely made the sample's overall completion rate rise and be more representative of the overall student population. Over half of the sample (56.3 percent) were in their 20s when they first enrolled in a postsecondary or vocational training program and nearly one-quarter (23.7 percent) were between 25 and 29. This is similar to a Department of Education (2009) report that stated 45.9 percent of undergraduate students who received veteran education benefits were between 24 and 29. A direct age comparison with the MRP results, however, was not possible due to the different age groups used in the Department of Education report.

Furthermore, the vast majority of the sample initially enrolled in either a public school (79.2 percent) with the remainder split fairly evenly between private nonprofit institutions (10.7 percent) and proprietary schools (10.1 percent). Caution should be exercised when drawing conclusions from this result; the NSC's coverage rate for proprietary schools is lower than it is for the public and private nonprofit sectors, which may account for the higher proportion of

Table 1**Demographic Comparison between Million Records Project¹ and U.S. Department of Education² Results**

Demographic	MRP	Dept. of Ed
Female	21.1%	25.2%
Age at Initial Postsecondary Enrollment		
Under 20	20.4%	0.2%*
20-24	32.6%	14.7%*
25-29	23.7%	45.9%*
30-39	17.4%	26.4%
40 or older	5.0%	12.9%
Initial School Sector Enrollment		
Public School	79.2%	65.7%
Public, Non-Profit	10.7%	13.1%
Proprietary	10.1%	10.4%
Other or multiple schools	**	10.8%
Branch of Service		
Air Force	18.1%	**
Army	39.7%	**
Coast Guard	1.5%	**
Marine Corps	17.1%	**
Navy	23.5%	**
Other ³	<.1%	**

¹ N = 859,297² Department of Education, 2009³ NOAA and PHS both qualify for Post-9/11 GI Bill benefits

* U.S. Department of Education used different age groups: "18 or younger," "19-23," "24-29"

** No Data

public school enrollment. As for branch of service, the Army comprised the largest segment of the sample (39.7 percent), followed by the Navy (23.5 percent), Air Force (18.1 percent), Marine Corps (17.1 percent), and the Coast Guard (1.5 percent).

Postsecondary Completion Rates

Of the entire Million Records Project sample ($n = 859,297$), 70,382 (8.2 percent) had an earliest initial postsecondary enrollment date of Jan. 1, 2011 or later. These records were excluded from all postsecondary academic outcome analysis because these veterans have likely not had enough time to earn a postsecondary degree. Their inclusion would have artificially skewed the sample's overall completion rate. The remaining 788,915 records were analyzed. Of this sample, a majority (407,483) indicated the attainment of a postsecondary degree, ranging from a vocational certificate to a doctorate, for an overall student veteran completion rate of 51.7 percent.

Introducing another variable—when the individual actually used the GI Bill benefit—depicts some interesting findings. Of those with a postsecondary completion ($n = 407,483$), 79.5 percent ($n = 323,798$) earned a certificate or degree after enrolling in VA benefits. However, more than one-third (40.8 percent; $n = 166,073$) completed at least one postsecondary program prior to using any GI Bill benefits. An example of this would be a service member who earns a certificate through the DOD's Tuition Assistance program while on active duty and then later uses the GI Bill to earn another degree. Approximately two-thirds (64.6 percent) of these 166,073 veterans first earned an associate or lower-level degree and nearly half (49.6 percent) then went on to use their GI Bill benefits to earn another postsecondary degree. When evaluating these results, it is important to note that VA used an artificial cutoff date to determine whether a degree was earned after or before enrolling in the benefit. This may have led to an

overestimate in the number of student veterans earning a degree after enrolling in the benefit and an underestimate of those that completed a degree prior to using the GI Bill.

Time to Completion for Initial Degree

Of the sample reporting at least one postsecondary completion (n = 407,483), 18.9 percent of the records (76,859) did not include a valid “earliest enrollment date”—usually because the student’s earliest enrollment occurred before the institution began submitting data to the NSC. Therefore, 330,624 records were analyzed to determine time-to-completion for initial degrees.

Table 2 displays the summary statistics (mean, median, and mode) for initial associate and bachelor’s degree levels. The sample’s average time-to-completion for an associate-level degree was 5.1 years. However, the middle response was four years and the most frequent response was two years. The sample’s average time-to-completion for a baccalaureate-level degree was 6.3 years, the middle response was five years, and the most frequent response was four years. The large difference between the means and the other measures suggests that the distribution of years is nonparametric; outliers may be influencing the overall mean. Discussion of these potential outliers will be explored in the next section. These results also suggest that the average is not the best measure time-to-completion for student veterans.

Table 2

Summary Results of Time-to-Completion for Initial Degree by Degree Level in Years

<u>Degree Level</u>	<u>Mean</u>	<u>Median</u>	<u>Mode</u>
Associate’s Level	5.1	4.0	2.0
Bachelor’s Level	6.3	5.0	4.0

¹ N = 144,343

² N = 130,189

Initially, time-to-completion analysis followed the U.S. Department of Education’s standard reporting practices ending at the four-year mark for associate-level degrees and at the six-year mark for bachelor’s degrees. However, the summary statistics for the sample’s time-to-completion indicated that reporting beyond the traditional four-year and six-year benchmarks was warranted as outliers may appear at higher intervals. Table 3 displays the sample’s time-to-completion for those who earned an initial associate level and baccalaureate level degree; certificate and graduate degrees were excluded due to the varying time rates within those degree programs.

Approximately half (52.6 percent) of the sample who first earned an associate-level degree did so within four years. For those in the sample who initially completed a bachelor’s degree, a majority (50.5 percent) completed it within five years and a cumulative total of 59.4

Table 3
Cumulative Percentage of Time-to-Completion for Initial Degrees Earned

Completed In	Associate’s Level ¹	Bachelor Level ²
2 years or less	29.0%	**
3 years	42.6%	**
4 years	52.6%	40.0%
5 years	61.2%	50.5%
6 years	69.0%	59.4%
7 years	**	67.1%
8 years	**	74.2%

¹ N = 144,343

² N = 130,189

** No Data

percent completed it within six years. It is likely that individuals reporting extended times-to-completion were not continuously enrolled and many factors, both personal and military-related, may have contributed to their longer academic careers.

Highest Level of Education

Table 4 summarizes results for initial degree level earned and the highest level of education completed regardless of GI Bill usage. Approximately 1 in 10 (10.3 percent) first earned a certificate, nearly half of the sample (48.5 percent) first earned an associate-level degree, and 38.6 percent first earned a baccalaureate-level degree. As for highest level of education, however, nearly half of the sample (47.3 percent) earned a baccalaureate-level degree, 29.2 percent earned an earned an associate-level degree, and only 6.3 percent reported a certificate as their highest degree. When comparing the initial degree levels with the highest level of education a pattern appears: lower degrees (certificates and associate-level) decrease, while higher degrees (baccalaureate-level and above) increase. Overall this suggests that student veterans continue their education beyond the initial degree to earn higher degrees over the course

Table 4
Comparison of First Degree Earned and Veterans' Highest Level of Education¹

Level	First Degree	Highest Level of Education
Certificate	10.3%	6.3%
Associate's	48.5%	29.2%
Bachelor's	38.6%	47.3%
Master's	2.4%	15.7%
Doctorate	**	1.6%

¹N = 407,483

** No Data

of their lifetime.

Further evidence that veterans pursue higher levels of education over the course of their lives is seen when comparing the first degree earned with future degrees earned. Nearly one-third (31.3 percent) of those who initially earned a vocational certificate or diploma went on to earn a higher degree. Similarly, 35.8 percent of those that initially earned an associate degree later earned a higher degree. Finally, 20.8 percent of those who initially earned a bachelor’s degree later earned a graduate level or doctoral degree.

Table 5 compares an individual’s highest level of education with whether they earned a degree before or after using GI Bill benefits. For those who earned any degree prior to using their GI Bill benefits, 4.7 percent reported a certificate, 22.7 percent reported an associate-level degree, 43.8 percent reported a baccalaureate-level degree, 25.8 percent reported a master’s-level degree, and 2.9 percent reported a doctorate as their highest level of education. For those who earned a degree after enrolling in GI Bill benefits, 7.3 percent earned a certificate, 33.6 percent earned an associate-level degree, 49.7 percent earned a baccalaureate-level degree, 8.8 percent

Table 5
Comparison of Highest Level of Education by Use of GI Bill Benefit¹

Highest Level of Education	Degree Before Benefit	Degree After Benefit	Sample
Certificate	4.7%	7.3%	6.3%
Associate’s	22.7%	33.6%	29.2%
Bachelor’s	43.8%	49.7%	47.3%
Master’s	25.8%	8.8%	15.7%
Doctorate	2.9%	0.7%	1.6%

¹N = 407,483

earned a master’s-level degree, and only 0.7 percent earned a doctorate as their highest level of education. Those who earned a degree prior to using GI Bill benefits had higher levels of education than those who relied solely on the benefit to earn a degree. Some caution should be exercised in drawing conclusions from these results, as the actual date of enrollment in the benefit was not available and VA used an artificial cutoff date to determine degree-attainment prior to enrollment in the benefit. It is therefore difficult to conclusively identify individuals in this sample who earned a degree after using their benefits.

Degree Fields

Tables 6 and 7 show the five most frequent degree fields, based on the CIP codes, reported by institutions to the NSC, for those initially completing associate-level degrees and baccalaureate-level degrees. While there is overlap in the degree fields between the associate and baccalaureate levels, their order varies. At the associate-level, the most frequent degree field was liberal arts and sciences (33.5 percent), followed by business (17.8 percent), homeland security, law enforcement, and firefighting (9.7 percent), health professions (9.3 percent), and engineering technologies (7.6 percent). By contrast, the most frequent degree field at the

Table 6
Percentage of Degree Field for Initial Associate’s Degree¹

Major	Percentage
Liberal Arts and Sciences	33.5%
Business	17.8%
Homeland Security, Law Enforcement, Firefighting	9.7%
Health Professions	9.3%
Engineering Technologies	7.6%

¹N = 141,402

Table 7
Percentage of Degree Field for Initial Baccalaureate Degree¹

Major	Percentage
Business	26.2%
Social Sciences	10.8%
Homeland Security, Law Enforcement, Firefighting	6.6%
Computer and Information Sciences	5.8%
Health Professions	4.9%

¹N = 128,710

bachelor’s level is business (26.2 percent), followed by social sciences (10.8 percent), homeland security, law enforcement, and firefighting (6.6 percent), computer and information sciences (5.8 percent), and health professions (4.9 percent).

Science and Engineering degrees. Using the National Science Foundation’s (NSF) criteria for classifying U.S. Department of Education CIP codes to Science and Engineering degrees, the MRP grouped the sample’s CIP codes into two categories: Science and Engineering (S&E) degrees and non-Science and Engineering degrees (non-S&E). Table 8 displays the

Table 8
Percentage of Science and Engineering Degrees by Degree Level¹

Degree Level	N	S&E	Non-S&E
Total Sample ²	312,923	17.8%	82.2%
Associate’s level	141,402	7.5%	92.5%
Bachelor’s level	128,710	32.6%	67.4%

¹Science and Engineering as defined by NSF and based on initial degree obtained

²Includes post-baccalaureate degrees as initial degrees in NSC records.

Table 9**Cumulative Percentage of Time-to-Completion for S&E Associate’s Degrees¹**

Completed In	S&E	Non-S&E	Sample
2 years or less	28.5%	27.7%	29.0%
3 years	42.9%	41.3%	42.6%
4 years	52.1%	51.5%	52.6%
5 years	60.0%	60.2%	61.2%
6 years	67.5%	68.1%	69.0%

¹N = 141,402

percentage of initial degrees earned in Science and Engineering fields by degree level. Analysis shows that of the 312,923 records that contained a CIP code for the initial degree completion, 17.8 percent were Science and Engineering degrees. When accounting for degree level, the number of Science and Engineering degrees awarded at the baccalaureate level (32.6 percent) is drastically higher than at the associate level (7.5 percent).

Tables 9 and 10 compare the time-to-completion for Science and Engineering degrees, non-Science and Engineering Degrees, and the entire sample based on initial degree level. At the associate level, there was little variance in the times-to-completion between the three groups. However, at the baccalaureate level, a higher percentage of the sample pursued bachelor’s degrees in Science and Engineering completed their degrees faster than those in non-Science and Engineering majors.

Table 11 compares the mean, median, and mode for the time-to-degree of Science and Engineering degrees, non-Science and Engineering degrees, and the sample’s overall time-to-completion. The median for non-Science and Engineering bachelor’s degrees (six years) is

Table 10**Cumulative Percentage of Time-to-Completion for S&E Bachelor's Degrees¹**

Completed In	S&E	Non-S&E	Sample
4 years or less	39.4%	37.1%	39.0%
5 years	52.5%	48.3%	50.5%
6 years	61.6%	57.3%	59.4%
7 years	69.0%	65.2%	67.1%
8 years	75.9%	72.6%	74.2%

¹N = 128,710

higher than both the Science and Engineering bachelor's degrees (five years) and the overall sample (five years).

Table 11**Time-to-completion Summary Statistics for Science and Engineering Degrees by Degree Level**

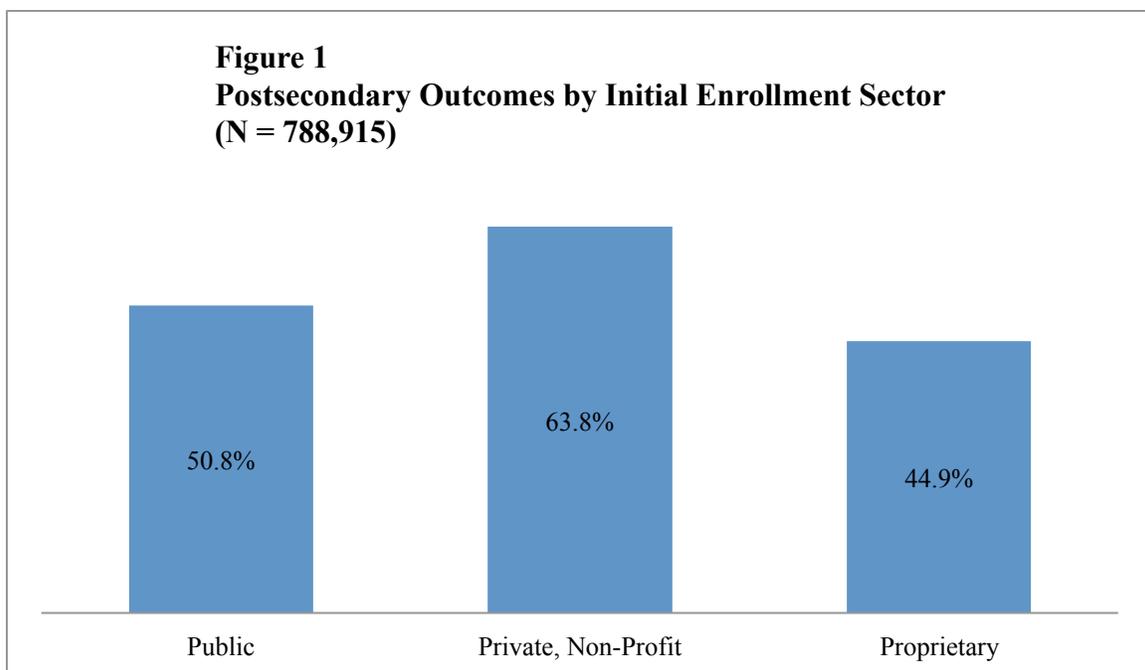
	Mean	Median	Mode
Associate's Level Degree			
Sample	5.1	4.0	2.0
S&E	5.3	4.0	2.0
Non-S&E	5.2	4.0	2.0
Bachelor's Level Degree			
Sample	6.3	5.0	4.0
S&E	6.2	5.0	4.0
Non-S&E	6.5	6.0	4.0

¹N = 312,923

Postsecondary Academic Outcome Comparisons

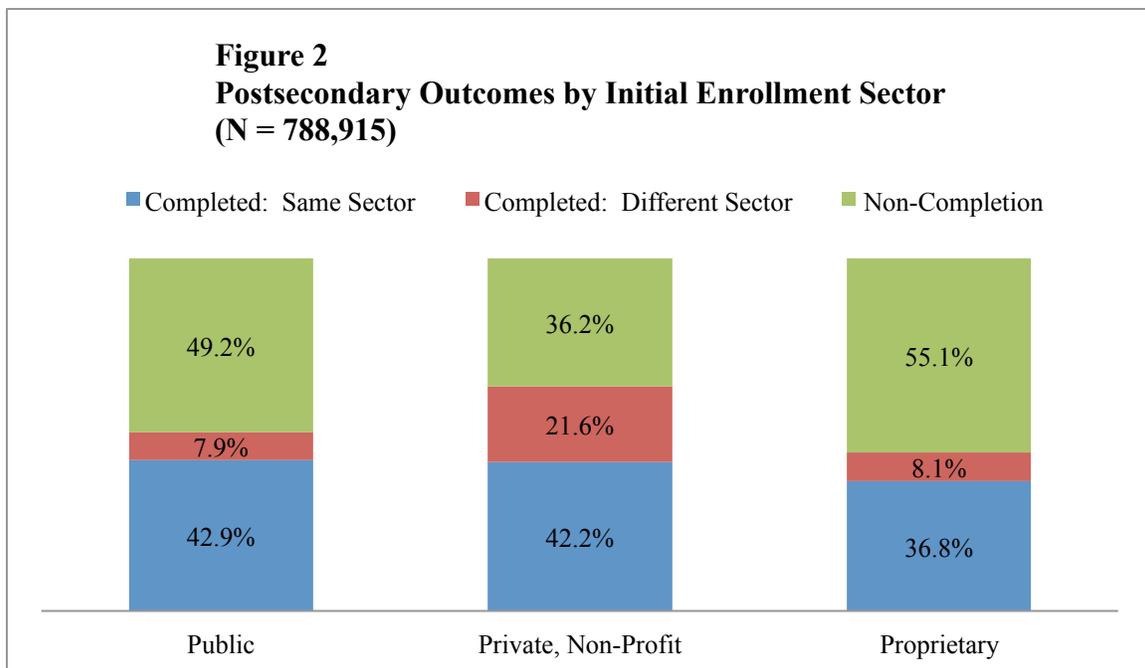
Limited comparisons across three demographic variables, initial school sector of enrollment, branch of service, and type of GI Bill used, were also conducted.

Initial school sector. Figure 1 displays the completion rates for the entire sample according to the school sector in which the veteran first enrolled. This is not necessarily the sector in which they first used their GI Bill benefits or the sector in which they graduated from. Of those in the sample that initially enrolled in a private nonprofit school, 63.8 percent earned a postsecondary degree from any school sector; 50.8 percent of those that initially started at a public school went on to earn a postsecondary degree; and 44.9 percent of the sample that initially enrolled in a proprietary institution earned a postsecondary degree. As noted previously, the NSC coverage rates for the three groups vary, with the proprietary sector having the lowest coverage during the sampling timeframe (2002 to 2010). The exact effect this has on the results is unknown, but most likely the margin of error for the proprietary sector results is higher than for the other sectors and should be considered when interpreting the results.



The proportion of postsecondary completions according to school sector also parallel the enrollment percentages for each sector. The public school had the highest percentage of completions with 71.7 percent. The private nonprofit sector had 15.5 percent of all sample completions, and the proprietary sector had 12.9 percent. Again, the low coverage rate for the proprietary sector during the sampling time frame should be considered when interpreting these results.

Figure 2 displays the completion rates for those earning a degree within the same initial sector of enrollment, the completion rates for those that earned a degree in a different sector than their initial enrollment, and the percentage that did not complete. The public sector had the highest within-sector retention rate (42.9 percent) for completions, followed by the private nonprofit sector (42.2 percent), and the proprietary sector (36.8 percent). While private nonprofit institutions had a high overall completion rate, it also had the highest migration rate (21.6 percent). This suggests that approximately 1 in 5 student veterans that initially begin at a two- or four-year private nonprofit institution eventually left the school and the sector entirely



before completing their first degree. It is also important to note that noncompletion does not necessarily mean withdrawal from school. The individuals in this group may still be working toward their degrees. The migration rates for the three sectors may also increase over time as those currently classified as noncompleters earn a degree in a new sector.

Tables 12 and 13 display the time-to-completion for initial associate and baccalaureate degrees for each sector of initial enrollment. While the proprietary sector had the lowest completion rates of the three, they also had a larger proportion of students completing both associate-level and baccalaureate-level degrees faster. This suggests that those who initially enroll in a proprietary school and earn a degree do so more quickly than those who initially enroll at a public or private nonprofit institution.

Figure 3 displays the highest level of education based on the initial school sector enrollment. There was little difference across the sectors, with a bachelor’s degree being the most frequent highest level of education. However, within each sector, private nonprofit schools had higher rates of graduate degrees (28.5 percent) compared with public (15.9 percent) and

Table 12

Cumulative Percentages of Time-to-Completion for Initial Associate’s Degrees by Initial School Sector of Enrollment¹

Completed in	Public	Private Non-Profit	Proprietary	Sample
2 years or less	25.8%	36.9%	59.3%	29.0%
3 years	39.5%	49.1%	72.5%	42.6%
4 years	49.8%	59.0%	80.1%	52.6%
5 years	58.6%	67.2%	85.5%	61.2%
6 years	66.8%	74.2%	89.7%	69.0%

¹ N = 144,343

Table 13

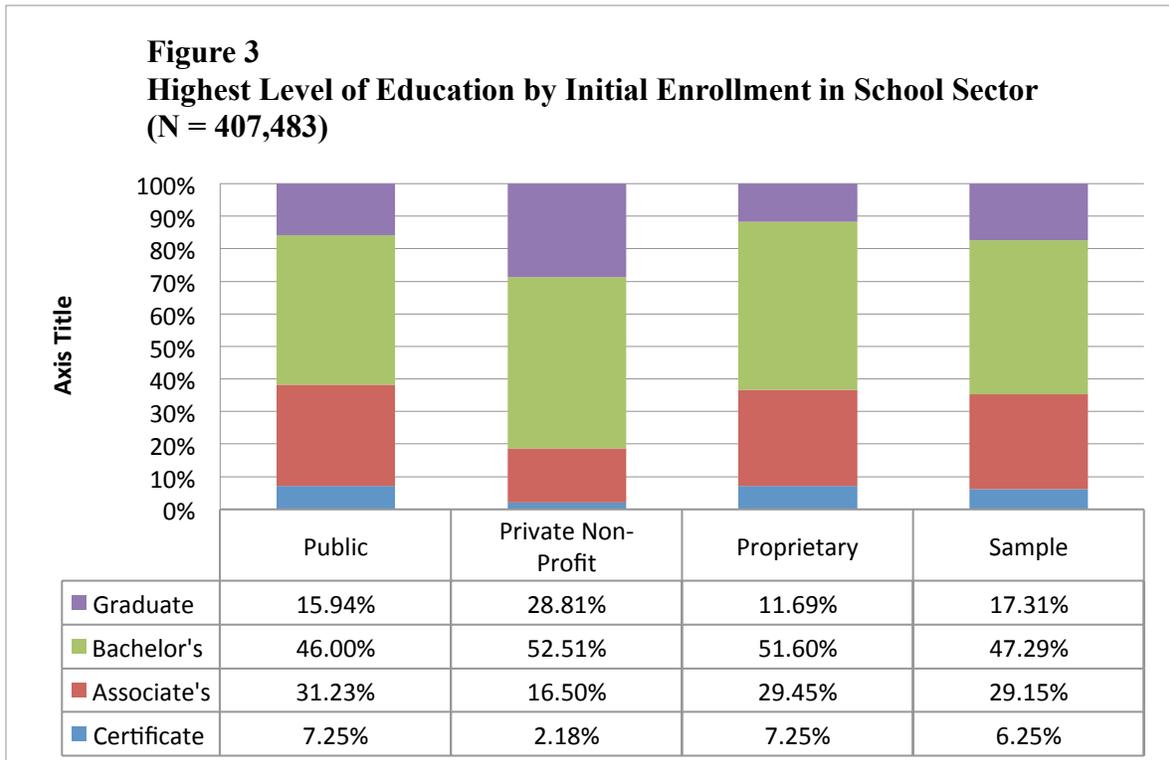
Cumulative Percentage Time-to-Completion for Initial Bachelor’s Degrees by Initial School Sector of Enrollment¹

Completed in	Public	Private Non-Profit	Proprietary	Sample
4 years or less	32.3%	54.8%	68.7%	40.0%
5 years	44.4%	64.6%	78.3%	50.5%
6 years	53.8%	72.1%	85.0%	59.4%
7 years	62.3%	78.1%	89.5%	67.1%
8 years	70.2%	83.2%	93.1%	74.2%

¹ N = 130,189

proprietary schools (11.3 percent). This could be due to the limited number of graduate programs offered at proprietary schools compared with public and private nonprofit institutions.

Finally, an examination of the initial degree for Science and Engineering degrees by



initial school sector was conducted. Results found minimal variation between the sectors. The rates for private, nonprofit, and proprietary schools were the same (18.8 percent) and slightly above the sample’s average of 17.8 percent. The rate for the public sector (17.6 percent) was slightly below the sample’s average.

Branch of service. Table 14 displays the completion rates for each branch of the military. The analysis found that three of the five military branches had completion rates higher than that of the overall sample (51.7 percent): Air Force (66.9 percent), Coast Guard (53.5 percent), and the Navy (51.9 percent). The Marine Corps had a completion rate of 44.9 percent and the Army had a completion rate of 47.0 percent.

There was little variance in the highest level of education among military branches. The highest degree most commonly earned across the five branches was a bachelor’s degree, with the Marine Corps having the largest percentage (50.1 percent). The Air Force had the fewest number of veterans reporting a bachelor’s degree as their highest degree (43.2 percent), but had the highest proportion of post-baccalaureate degrees (20.8 percent).

Table 14
Branch of Military Service Completion Rates

Branch of Service	Completion Rates	Sample Size
Air Force	66.9%	147,403
Army	47.0%	312,561
Coast Guard	53.5%	12,299
Marine Corps	44.9%	130,958
Navy	51.9%	185,525
Other ¹	91.1%	169

¹ NOAA & PHS

Table 15**Cumulative Percentages Time-to-Completion for Initial Associate Degrees by Branch of Service¹**

Completed in	Air Force	Army	Coast Guard	Marine Corps	Navy
2 years or less	30.8%	26.2%	29.7%	30.2%	30.1%
3 years	43.3%	39.8%	42.8%	45.1%	44.0%
4 years	53.7%	49.8%	52.4%	54.9%	54.0%
5 years	62.8%	58.5%	60.0%	63.1%	62.1%
6 years	71.3%	66.4%	66.7%	70.3%	69.4%

¹ N = 144,343

Tables 15 and 16 compare the time-to-completion for initial associate-level and baccalaureate-level degrees by branch of service. There was little variation in the time-to-completion rates among the branches. A majority of veterans in nearly all five branches completed their associate degree in four years, with the Army (49.8 percent) falling just below 50 percent. A similar result was found for bachelor's degrees, with all five branches having at least a majority completing their degree within six years.

Table 16**Time-to-Completion for Initial Bachelor's Degrees by Branch of Service¹**

Completed in	Air Force	Army	Coast Guard	Marine Corps	Navy
4 years or less	41.7%	36.6%	37.3%	37.1%	42.4%
5 years	53.9%	48.1%	48.1%	49.1%	53.0%
6 years	62.6%	57.4%	56.2%	58.5%	61.2%
7 years	69.8%	65.5%	63.6%	66.7%	68.4%
8 years	76.5%	73.0%	70.6%	74.2%	74.9%

¹ N = 130,189

Analysis of Science and Engineering degrees among the branches found that all five have rates similar to the overall sample's average. The Marine Corps and Navy had the highest rate of degrees in the Science and Engineering fields (both at 19.3 percent), followed by the Army (18.6 percent). All three were above the sample average of 17.8 percent. The Coast Guard was slightly below the sample average at 17.0 percent and the Air Force had the lowest rate of degrees (14.1 percent) in Science and Engineering fields.

GI Bill usage. Although it is premature to draw any definitive conclusions about the Post 9/11 GI Bill or its comparison with other VA education benefits, due to its recent implementation, some comparisons were conducted to explore early trends between the MGIB exclusive group and the hybrid MGIB–Post-9/11 GI Bill group.

Table 17 displays the comparison of academic outcomes between the two groups of GI Bill beneficiaries. A comparison of student veterans who used only Montgomery GI Bill benefits versus student veterans who used both the MGIB and Post-9/11 GI Bill shows minor differences between the two groups. Student veterans who used portions of both GI Bills had a slightly higher completion rate (57.8 percent to 59.7 percent) and a slightly higher percentage of Science and Engineering degrees (17.6 percent to 18.9 percent). These student veterans also had a higher proportion of baccalaureate degrees as their highest level of education compared with student veterans who used only the MGIB. However, student veterans using only the MGIB had a greater proportion of master's and doctorate degrees, which may indicate that they have been attending postsecondary education and vocational programs longer and that this difference will narrow over time.

Table 17**Comparison of Postsecondary Outcomes by GI Bill Chapter Used**

	MGIB	Both	Post 9/11 GI Bill	Sample
<u>Completion Rates¹</u>	57.8%	59.7%	**	51.7%
<u>Highest Level of Education²</u>				
Certificate	6.8%	4.8%	**	6.3%
Associate's	28.0%	26.8%	**	29.2%
Bachelor's	46.9%	52.8%	**	47.3%
Master's	16.6%	14.3%	**	15.7%
Doctorate	1.7%	1.3%	**	1.6%
<u>Science and Engineering Degrees³</u>				
S&E	17.64%	18.20%	**	17.84%
Non-S&E	82.36%	81.80%	**	82.16%

¹N = 788,915²N = 407,483³N = 312,923

** Not enough data for comparison

Discussion

The Million Records Project is intended to increase the knowledge of stakeholders, policymakers, and the general public with regards to the postsecondary academic outcomes of this generation's student veterans. For the first time in the history of the GI Bill, empirical evidence has been obtained on the academic achievements of current student veterans, and it offers a glimpse into potential future trends. It is also anticipated that the Million Records Project will have substantial policy, practical, and research implications.

While this report provides an in-depth look at the postsecondary outcomes of student veterans, some weaknesses in the study should be noted. The inclusion of only Montgomery GI Bill (MGIB) and Post 9/11-GI Bill beneficiaries limits the report's findings to these specific VA education benefits programs. Caution should be used when generalizing these findings to other VA education programs, such as the Montgomery GI Bill Selective Reserve (MGIB-SR) benefit or the Veterans Educational Assistance Program (VEAP). In addition, including other education benefits programs, such as DOD's Tuition Assistance, would show in greater detail the total amount of financial assistance student veterans received due to their military service, which would allow for a more robust discussion.

Another weakness of this report is the lack of data on the sample's enrollment status. The results are based on certificate or degree attainment. Including enrollment information will allow for more accurate results when measuring persistence rates, sector migration rates, and the number of non-completers who are, in fact, still enrolled in higher education programs.

The exclusion of enrollment intensity—part-time or full-time enrollment—is another weakness. This data point, connected to enrollment, would provide additional information and allow for stronger conclusions when evaluating the time-to-completion results. For example, this

variable would help researchers determine if a veteran's long time-to-completion is a result of military service, enrollment intensity, or some combination of the two.

An additional weakness is that some of the variables did not have complete, detailed information. For example, the specific date when an individual enrolled in the GI Bill benefit was not provided. The VA rather used a cutoff date of 2002. Anyone having a degree prior to that date was assigned to the "earned degree prior to benefit" group and those not having a degree prior to the cutoff point were assigned to the "earned degree after benefit" group. This skews the results by potentially undercounting the "earned degree prior to benefit" group and overestimating the "earned degree after benefit" group.

Finally, the low coverage rate for the proprietary sector in the NSC database makes comparisons across sectors difficult, as the margin of error is higher for proprietary schools. Therefore, conclusions and discussions based on sector comparisons should be done with caution as a higher coverage rate could lead to different results.

The Million Records Project also has a number of key strengths that should be noted. First, the large sample size of 898,895 veterans over a span of 10 years produces an extremely low margin of error and strong population estimates, which allows for a robust discussion about the data with little worry about misinterpreting the results due to sampling error. Second, VA's random selection of the sample also reduced potential sampling error while increasing the external validity of the results. Third, by using the NSC's database, the project obtained degree data based on records from institutions of higher education, thus eliminating potential response bias from individuals—though, as noted above, the low coverage rate for proprietary schools does create a response bias based on school sector and should be considered when interpreting the results.

Postsecondary Academic Outcomes

A majority of the sample earned a postsecondary degree or certificate, for a postsecondary completion rate of 51.7 percent, which is comparable to the 2010 NSV results. While it is atypical to use an average across several years of postsecondary completion data, the purpose of this study was to gain a better measure of the postsecondary academic outcomes of the Post-9/11 generation of student veterans, and a group average over the era is the most appropriate statistic for that purpose.

The MRP design allows for analysis of the postsecondary academic outcomes for individual academic year cohorts, but the results are likely to differ from other national-level statistics on postsecondary completion rates. Methodological differences are a main cause of such variance. Traditional databases, such as IPEDS, NCES, and NSC, track postsecondary completion rates using a cohort model with specific enrollment and completion dates, a sample limited to first-time students, and a time-to-completion capped at six years. By contrast, the MRP sample studied student veterans over many years and included individuals with previous degree attainments. If the same methods used by IPEDS and NCES were applied to this sample of student veterans, a lower completion rate for student veterans would be expected, because more of them would be excluded or listed as dropouts if their time-to-degree was longer than six years.

However, the goal of the MRP was not to directly compare student veterans with other populations but rather to begin to fill the void in research on veterans in higher education by providing a more accurate measure of student veteran postsecondary outcomes. This report is a necessary first step. A cohort-based design would require several years of examination to determine trends and it may not fully capture external influences like increased deployments.

This overview of the postsecondary academic outcomes of student veterans sets the stage for future studies to make comparisons using a more traditional cohort-based approach.

In addition, using a group average of postsecondary completion for the service era allows for parallel comparisons with previous research on student veteran postsecondary completion rates from earlier eras. The 2010 National Survey of Veterans, when selecting only student veterans who served after September 2001, notes that 51.5 percent reported completing their educational or vocational program for which they used GI Bill education benefits (Cate, 2014). The completion rate reported in the MRP is similar to the 51.5 percent, but slightly lower than the completions rates reported for other service eras in the 2010 NSV, which are approximately 65 percent. The difference could be a function of time; those service eras have had more time to enroll and complete a degree than many of the veterans in the MRP sample. This gap is likely to close over time. The MRP's findings not only provide updated and more comprehensive data, but the results stand in stark contrast to 2012 media reports that claimed that 88 percent of Post-9/11 student veterans were dropping out of college in their first year.

Although direct comparisons with other completion rate statistics are not possible due to differing methodologies, the Million Records Project's completion rate is far higher than what may be expected for nontraditional students. A 1996 study of nontraditional student completion rates found that within five years only 44.3 percent of the sample earned any type of postsecondary certificate or degree (Horn, 1996). In fact, student veterans are attaining degrees at a rate similar to that of all students—traditional and non-traditional. However, it is taking longer to reach that mark. The National Student Clearinghouse reported a 56.1 percent national completion rate for the AY 2007 cohort over a six-year period (Shapiro, Dundar, Zisken, Yuan, & Harrell, 2013). The MRP sample required longer to reach comparable levels of completion,

which is not surprising considering the military deployments over the course of the sample. This suggests that at a postsecondary academic outcome level, student veterans may resemble traditional students rather than their nontraditional counterparts, and are very persistent. They may withdraw from college for military or personal reasons, but will return. Again, caution should be exercised in making direct comparisons between these cohort designed studies and the MRP methodology.

In addition, this sample's 51.7 percent completion rate will most likely continue to rise. The MRP measured postsecondary academic outcomes as of June 14, 2013 with incomplete data from the graduating class of 2013 and no data on summer completers. Student veterans enrolling in school closer to 2010 or after, which is a large percentage of Post-9/11 GI Bill beneficiaries, would not have had enough time to earn a degree or certificate and are not recorded in the NSC's database as attaining a certificate or degree. Therefore, as student veterans who recently enrolled in institutions of higher education have the opportunity to finish, this sample's overall completion rate should increase. The 51.7 percent completion rate is, however, a benchmark based on empirical evidence.

The average time-to-completion for student veterans who first earned an associate degree was 5.1 years. For those who first earned a bachelor's degree, the average time-to-completion was 6.3 years. Both data points indicate that some veterans may require slightly more time to complete a degree than the traditional time-to-completion expectations established by the U.S. Department of Education. However, it is important to remember that time-to-completion does not mean that the student was continuously enrolled and it is more likely that the student veteran had to withdraw and change from full-time to part-time.

It is also important to note that the averages are influenced by outliers, and the median and mode are better indicators of a student veteran's time-to-completion. For student veterans who first completed an associate degree, a majority did so in four years or less with the most frequent time-to-completion being two years. For those first completing a bachelor's degree, a majority did so in five years, but the most frequent time-to-completion reported was four years. This indicates that a majority of student veterans are earning their degrees in the U.S. Department of Education's established timeframe, while a smaller but important minority, as noted by the longer average time-to-completion, requires a few extra years.

Based on the MRP time-to-completion results and other research (Ackerman, et al., 2009; DiRamio, et al., 2008), it can be hypothesized that student veterans follow different paths to degree attainment, which is evidenced by the varying times-to-completion for this sample. Figure 4 visually represents at least three such paths. Recognizing these three pathways will allow institutions of higher education to properly plan for changes in a student veteran's enrollment over the course of their academic career.

Path Alpha is the traditional path recognizable to most people. An individual enters the military after high school, fulfills his or her service obligations, and upon separation enrolls in higher education. With their military service complete, they are able to persist to graduation relatively uninterrupted by military obligations. Student veterans on this path typically earn an associate-level degree in two years and a baccalaureate-level degree in four. Active duty service members are the largest segment of the military and therefore it is not surprising that most student veterans probably follow this path as evidenced by the median and mode time-to-completion.

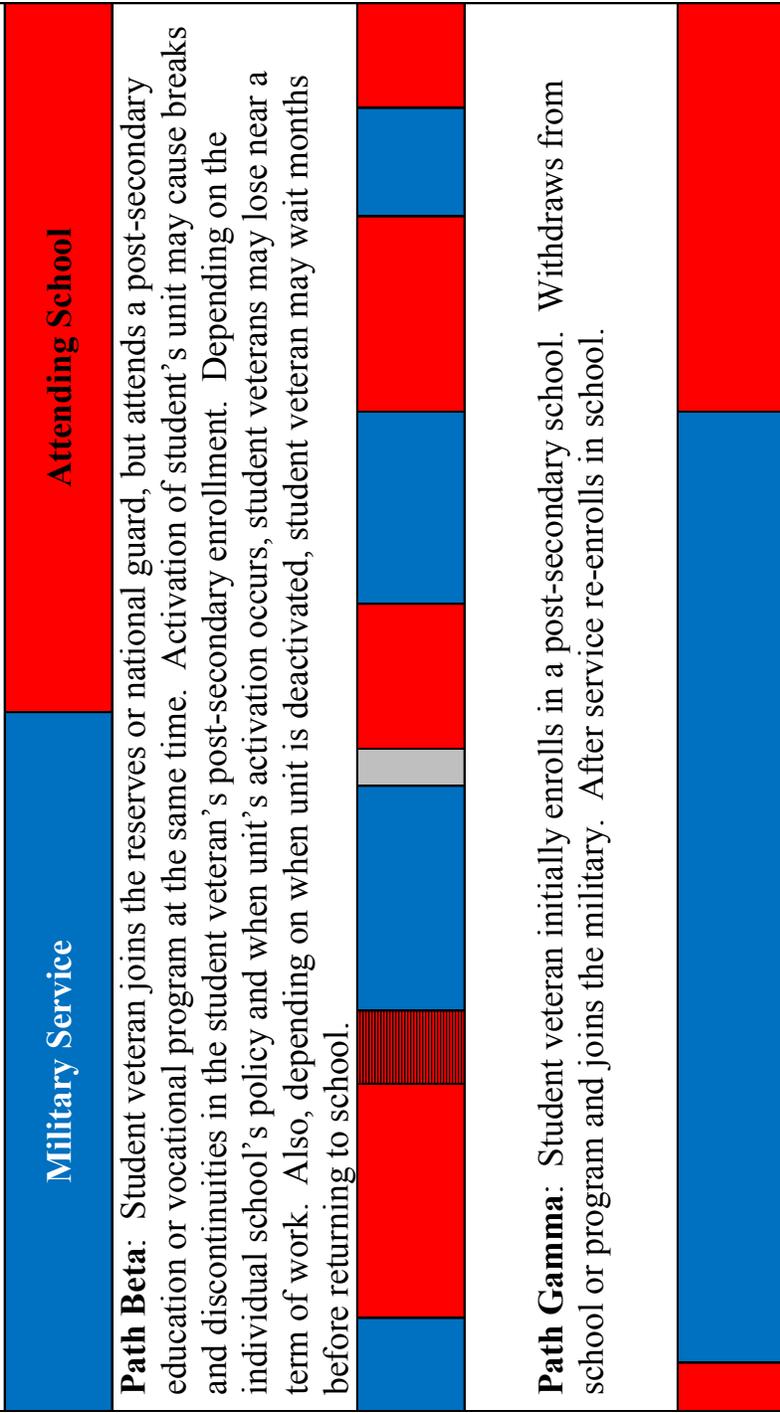
Some evidence also suggests that being a reservist in college and being called up can significantly disrupt a student veteran's postsecondary progress (Ackerman, et al., 2009; DiRamio, et al., 2008). Path Beta reflects the increased use and incorporation of reservist and National Guard units in today's military. In this path, an individual enrolls in college after joining the military as a reservist or National Guard member or vice versa. In both cases, the student veteran is at risk of being activated during the school term, which is what occurs in this path. The student veteran's military obligation causes a temporary stop-out. Depending on when the activation occurs and the specific institution's policies, the student veteran's academic progress for that term could be negated and listed as a withdrawal (shown as red and black lines in Figure 4). The student veteran deploys for the designated amount of time, is deactivated, returns home, and re-enrolls in school. Student veterans in some instances may have to wait months before continuing their studies if their unit is deactivated in the middle of a semester (shown as a gray block in Figure 4). Finally, the student veteran continues his or her studies, but may face several more activations over the course of the academic career.

In the scenario just described, a total of 20 months may have been artificially added to the student's time-to-completion: four months of credits lost due to activation during the term, 12 months deployed, and then another four months waiting to re-enroll. What was a two-year degree quickly becomes a four-year associate degree and the four-year normative time-to-completion for a bachelor's degree may take six years to complete—provided that the student veteran is activated only once. Student veterans that follow Path Beta may account for some of the high average time-to-completion found in this study. In addition, since several Army and Marine Corps reservists and National Guard units were activated numerous times during

Figure 4

Student Veteran Hypothesized Completion Paths

Path Alpha: Student veteran joins the military, fulfills his contract to the military and once contract is over enrolls in post-secondary education or vocational program. Typically the path that most active duty service members follow, although some may take correspondence courses or on-base courses.



Path Beta: Student veteran joins the reserves or national guard, but attends a post-secondary education or vocational program at the same time. Activation of student's unit may cause breaks and discontinuities in the student veteran's post-secondary enrollment. Depending on the individual school's policy and when unit's activation occurs, student veterans may lose near a term of work. Also, depending on when unit is deactivated, student veteran may wait months before returning to school.

Path Gamma: Student veteran initially enrolls in a post-secondary school. Withdraws from school or program and joins the military. After service re-enrolls in school.

Operation Iraqi Freedom and Operation Enduring Freedom, this path may also explain their currently lower rates of completion compared to the other service branches.

Path Gamma offers another explanation for the long average time-to-completion. In this path, an individual enrolls in an institution of higher learning, but leaves to join the military as an active duty service member. Once the service member fulfills his or her military contract and separates, they re-enroll in higher education to earn a degree. Due to the increase in military enlistments following the terrorist attacks of Sept. 11, 2001, student veterans following this path may account for a larger percentage of the sample than in previous service eras. For those who extended their length of service beyond their initial contract, their time-to-completion could range from several years to more than a decade. Such cases account for some of the outliers found in the data that also contributed to the higher average time-to-completion for student veterans.

Aside from the pathways, the results also indicate that the GI Bill benefit may not be the main motivation driving veterans to enroll in higher education. A high percentage (40.8 percent) of the student veterans who earned a postsecondary degree or credential in the sample earned the degree prior to using VA education benefits. These individuals may have completed a degree prior to ever being eligible for VA benefits, which suggests that today's military is comprised of well-educated individuals. In addition, two-thirds (64.5 percent) of those earning a degree prior to accessing VA benefits completed a two-year associate or vocational certificate. They may have done so using the DOD's Tuition Assistance program to earn a degree while on active duty. It could also indicate that student veterans are conscientious consumers of their benefits. If they recognize that attaining a lower-level degree at a reduced cost can also fulfill general education

requirements at a four-year institution, student veterans may choose to save GI Bill benefits for use at more costly schools and to pursue higher degrees.

The results further support this idea with nearly half (49.6 percent) of those who earned a degree prior to accessing their GI Bill benefits also earning a degree after usage. For the entire sample that completed a degree, either at the baccalaureate or associate level, 79.4 percent did so after accessing their benefits. While the motivation for enrolling in higher education or the motive behind using one's VA benefits may be unclear and outside the scope of this project, the data suggest that the GI Bill incentivizes veterans to persist in earning postsecondary degrees and leads to increases in a veteran's overall level of education. Further research into when and why veterans choose to use their VA education benefits would provide much needed clarity and answer many of these questions.

One-third (33.4 percent) of student veterans in the sample earned a bachelor's degree or higher, which is slightly lower than the results of the 2012 American Community Survey (U.S. Census, 2012), which reported 42 percent of the entire U.S. veteran population who attended some college earned a bachelor degree or higher. However, as more time elapses and more student veterans in the MRP sample progress through education, the percentage of baccalaureate-level degrees and higher are expected to rise and this gap will most likely narrow. While the GI Bill may not be capable of fully funding a student veteran's postsecondary education, it does provide the foundation, both in terms of knowledge acquisition and financial freedom, on which veterans can pursue additional higher-level degrees like their post-WWII era counterparts who went on to become doctors, engineers, and researchers (Humes, 2006). In doing so, they are likely to be more competitive in the civilian workforce and earn higher wages over their lifetime (Bureau of Labor Statistics, 2010).

An analysis of degrees pursued, with a focus on Science and Engineering fields, also sheds light on the employability of student veterans. Today's veterans appear to be earning degrees in a few specific fields, as evidenced by the overlap in the five most frequent degree fields for associate- and bachelor-level degrees. Three degrees appear in the top five for both degree levels, although in different order: business; homeland security, law enforcement, and firefighting; and health professions. This suggests that a large segment of the sample will be entering the business or service sectors of the workforce. Also, the high frequency of student veterans pursuing liberal arts and sciences, as defined by the U.S. Department of Education, at the associate level suggests that many attend a two-year institution to complete their general education requirements and may later transfer to a four-year university to earn a higher degree.

Of the sample with a degree completion and a degree field record, 17.8 percent earned a Science and Engineering degree, as defined by the National Science Foundation. At the associate-level, the percentage of Science and Engineering degrees decreases to 7.4 percent. However, it increases to 32.6 percent when looking only at those who first completed a bachelor's degree. According to NSF data, the average number of Science and Engineering bachelor's degrees conferred to all students between 2002 and 2010 was approximately 31.8 percent (National Science Foundation, 2013). The MRP results suggest that student veterans are attaining bachelor-level Science and Engineering degrees at a rate similar to their civilian counterparts.

In addition, the study examined differences in time-to-completion for baccalaureate students in Science and Engineering programs with their peers pursuing other bachelor's degrees. The results indicate that those majoring in Science or Engineering completes their degrees more quickly than student veterans in non-Science or Engineering fields. This may be

more a result of the structured course schedules of many Science and Engineering programs that minimize the amount of electives students can take. However, the limited number of months that the GI Bill will pay for classes is another incentive for this group to finish faster. Currently, the GI Bill allocates funds for only 36 months of classes at the full-time enrollment level—approximately four years of college. MRP results show that only 39.4 percent of the sample completed their Science and Engineering bachelor’s degree within four years. While a higher rate than their non-Science and Engineering counterparts, approximately 20 percent still needed an additional one to two years to finish their degree. If attending at a continuous, full-time rate for their entire college career, these students are likely to have exhausted their benefits prior to completion and paid for the additional cost out of their own pocket or utilized student loans.

The Million Records Project also compared student veteran postsecondary completion rates based on the sector of higher education in which the student initially enrolled. The results, while not definitive due to the varying coverage rates previously discussed in this report, show that private nonprofit institutions, public schools, and proprietary schools can all improve their postsecondary completion rates. However, some sectors may need to improve more than others. Based on the sector of a student veteran’s initial enrollment, the private nonprofit sector has the highest student veteran completion rate at 63.8 percent, followed by public schools at 50.1 percent, and the proprietary sector with the lowest at 44.9 percent. Essentially this indicates that if student veterans initially enrolls at a public or private nonprofit institution of higher learning, they are more than likely to earn a degree over the course of their lifetime from any school. The converse is potentially true for those first enrolling in a proprietary school; they may be less likely to complete a degree in their lifetime from any school.

These completion rates are based on the school sector in which the student veteran first enrolled—not where they first completed their degree (See Figure 3). When sector transfer rates are applied to these results, the rates become nearly even across the three sectors. In addition, the private nonprofit sector receives a large increase from students who completed their degrees in a different school sector. Sector migration is a broad exploration and a poor indication of student veteran transfer rates. More detailed initial enrollment level data and enrollment data in general would allow for discrete analyses, allow researchers to note non-completer students that are still enrolled and persisting, and generate stronger results and interpretations.

In evaluating sectors, it is important to recall that the coverage rates for the proprietary sectors was lower compared with the other two sectors. This created a potential sample bias skewing data towards the public and private nonprofit sectors and should be considered in the discussions of sector enrollment. The MRP results show that most student veterans (79.2 percent) initially enrolled in public schools and roughly 1 in 10 initially enrolled in either a private nonprofit (10.7 percent) or proprietary institution (10.1 percent). Such a large disparity in enrollment means that not all increases in completion rates by sector are equal. For example, a 1 percentage point increase in completion rates in the public sector is equal to at most eight times as many student veterans graduating in the private or proprietary sector if those sectors experience the same one point increase. This information should help guide the allocation of scarce resources to maximize impact.

It is also critical to note that the completion rates are reported at the sector level and detailed analysis by school was out of the scope and ability of this report. Therefore, individual schools within a given sector may have significantly different postsecondary completion rates than the sector completion rates reported here. Although the private nonprofit sector has the

highest completion rate, it is probable that there are private nonprofit schools with lower student veteran postsecondary completion rates. Conversely, the proprietary sector has a lower postsecondary completion rate, but it is likely that some proprietary institutions graduate veterans at a high rate.

In summary, the analysis shows that student veterans graduate at significantly higher rates than their nontraditional student peers and perform at a level comparable to traditional students. Their time-to-completion varies and reflects the fact that some student veterans follow different paths to degree attainment. The results also suggest that student veterans may strongly consider when to use their limited GI Bill benefits to maximize impact, as evidenced by those who delay usage until enrolled at a more costly institution or to pursue a higher-level degree. The findings also suggest that GI Bill usage leads to higher levels of education over the course of a veteran's lifetime. Last, the largest percentage of student veterans graduating with bachelor's degrees are preparing for careers in business, public service, science, and engineering fields.

Policy Implications

The Million Records Project has numerous public policy implications. Most notably is the fact that this report establishes a proven methodology to empirically and accurately measure the impact of the GI Bill in near real time. Prior to the Million Records Project, policymakers and stakeholders had to wait years or even decades to know the effects of a specific GI Bill program. Not only has the Million Records Project drastically reduced that time to a fraction of what it once was, but this process is replicable, valid, comprehensive, and cost-effective.

The MRP also empowers policymakers and stakeholders to make data-driven decisions regarding the future of the Post-9/11 GI Bill, which is one of America's most robust investments in the post-service success of veterans in history. The MRP provides empirical evidence that

student veterans are using their GI Bill benefits to earn postsecondary certificates and degrees. However, it is important to note that student veterans may need more time to complete their certificates and degrees due to personal and military obligations. For some student populations, breaks in enrollment or changes in enrollment intensity may result in permanent withdrawals from school. Yet for veterans, the MRP results suggest that they are persistent and will continue through to degree attainment.

As noted above, the Million Records Project also analyzed the performance of student veterans enrolled in different sectors of higher education. The results mainly indicate that greater research is needed to understand how and why student veterans persist in each sector, but the level of student veteran enrollment in each has significant policy implications. Far more student veterans are enrolling in public institutions than in private or proprietary schools. That means that even a small increase in the completion rate of veterans at public schools will yield a larger number of veterans actually earning degrees. Stakeholders may use this data to allocate limited resources more effectively.

It is also well known that America is facing a serious shortage in the number of students graduating with Science and Engineering degrees. Following WWII, thousands of student veterans earned such degrees and then made numerous advances in medicine, technology, mathematics, and other fields. Today's veterans are well-equipped to pursue such degrees to fill the skills-gap plaguing the nation. They not only have experience using modern technology from their time in the military, but many have security clearances, are well-versed in other languages and cultures, and are now earning degrees and credentials in these critical fields. The MRP found the percentage of student veterans earning bachelor's degrees in Science and Engineering is basically even with the general population. With this baseline established, work

can begin to increase the number of student veterans earning Science and Engineering degrees, thus helping to close the skills gap.

The findings showed that nearly 1 in 5 student veterans took five to six years to complete a bachelor's degree. The GI Bill only allocates funds for 36 months or approximately four academic years if the student veteran attends full-time for all months, meaning that many student veterans may be at risk of dropping out, switching majors, or taking on student debt to complete their degrees before their GI Bill is exhausted. If legislation were passed that granted Science and Engineering students an extra year of GI Bill benefits, it would incentivize more veterans to pursue such majors and increase the likelihood that they complete these high-demand degrees. It would also potentially reduce the number of student veterans who may switch from a Science and Engineering degree to another field because their GI Bill benefits will be depleted prior to completion. More research, however, is needed to explore potential factors that increase the number of student veterans earning Science and Engineering degrees.

Research Implications

The Million Records Project has implications for the research community as well. Those examining veterans and military service members in higher education, as well as the larger population of nontraditional students, now have a new method for analyzing postsecondary outcomes. The NSC can provide robust data not only on degree completion, but also on enrollment. Furthermore, the MRP results indicate that research on student veteran postsecondary academic outcomes should utilize expanded timeframes for completion beyond those used by the U.S. Department of Education. If researchers use the U.S. Department of Education's timeframes, a significant proportion of student veterans may inadvertently be missed.

The Million Records Project also adds a new dimension to the study of nontraditional students and the classification of student veterans as nontraditional students. Even though they share many of the same traits, as defined by Horn (1996), traits that typically result in few postsecondary completions, student veterans are earning postsecondary degrees at rates higher than their nontraditional counterparts. Contrary to theoretical predictions, student veterans are actually succeeding in postsecondary environments at the same level as their traditional student peers. This topic should be further explored to discover the factors—both character traits of student veterans and institutional supports—that lead to positive academic outcomes and how to replicate such practices for other nontraditional students, thereby increasing the overall completion rate.

The results also empower researchers interested in exploring veterans in higher education. Prior to the Million Records Project, a main weakness of many research articles focusing on student veterans was the inability for a researcher to state if his or her sample was representative of the entire student veteran population. The MRP provides researchers limited national level statistics to use when developing studies, selecting samples, and comparing results. This may lead to a snowball effect of stronger research on veterans in higher education and a rapid expansion of the currently limited knowledge base on these students, which in turn can improve and inform both policy and practice.

Implications for Practice

Last, the Million Records Project will have countless practical implications, especially for institutions of higher education that enroll student veterans.

In addition to shedding light on possible paths to completion, the MRP is a blueprint that schools can replicate to track the academic outcomes of their student veterans. They can then

compare their results with both a national completion rate and to the completion rate for their sector of higher education. The results will empower administrators to smartly allocate scarce resources. For example, if the school is graduating veterans at a high rate, it may have reached a point of diminishing returns. The school should, most likely, sustain current levels of support. If a school has a low completion rate, that school may need to increase support. Future work, as described in the next section, will assist schools in determining exactly what programs and service to invest in.

Furthermore, many schools face budget cuts and have had to prioritize the types of programs and services they provide to students. Since there have been limited data on student veteran completion rates, some schools may question the value of allocating resources for this population at all. The fact that student veterans are completing at high rates, however, indicates that an investment in supportive services is likely to attract more student veterans, increase persistence, and thus increase the total amount of GI Bill payments being made to the school.

Future Research and Directions

The MRP was a necessary first step to vastly expanding the collective knowledge base regarding veterans in higher education. However, it is only the first step.

The immediate next project will both broaden and deepen the scope of the MRP results. Phase II will replicate the data-match conducted in the Million Records Project, but only for veterans using the Post-9/11 GI Bill benefit. The sample will consist of 1 million student veterans that enrolled in the benefit between 2009 and 2013. The Phase II data-match will also include enrollment data, thus allowing researchers to calculate retention, persistence, and transfer rates. It is also likely to determine key loss-points for student veterans—times that they are most likely to drop out. If successful, interventions can be designed and implemented strategically to

increase persistence. The Phase II project will also explore the number of student veterans that “stop out,” but return to school, and to determine the average length of that hiatus.

Finally, Phase II will explore the campus policies, practices, and services that most influence student veteran postsecondary outcomes at a sample of institutions on a subsample of the population. The selected schools will be analyzed according to sector and level, thus better preparing them to implement policies, practices, and services that have successfully improved academic outcomes in their sector.

Future studies should explore ways to further measure the overall return on the GI Bill investment. Postsecondary completion rates are only one measure. Other research can focus on how GI Bill beneficiaries impact the economy, such as job attainment, wages, amount of taxes or social security paid, and number of months unemployed. Additional measures, such as savings to VA and federal government programs, should also be considered, such as use of private health insurance over VA medical insurance.

Last, the Million Records Project sets the stage for research related to the student loan debt of military veterans. While the GI Bill is a robust financial benefit, the time-to-completion rates noted in this study show that the benefit may not always cover a student veteran’s entire academic career. There are also gaps in the benefit that can increase the cost of a degree. For example, if a student veteran is classified as an out-of-state resident, his or her GI Bill benefits are capped and will not cover the full cost of tuition at that institution. This forces student veterans to make difficult choices about their academic future: either pay for college with student loans, transfer to a more affordable institution, or drop out entirely. The amount and impact of student debt on student veterans’ persistence in college and their long-term goals remains largely unknown.

Closing

For nearly 70 years, the GI Bill has been an essential tool to help veterans transition from the military to the civilian workforce. Over the decades, many researchers and historians have examined and reported on the benefits of the GI Bill to veterans and the country. The research has shown that student veterans have high levels of postsecondary academic outcomes.

The Million Records Project adds to this previous research on student veterans and the GI Bill, with notable exceptions. This report has shown that, like all previous generations, a majority of student veterans in the Post-9/11 GI Bill era are earning postsecondary degrees and that this percentage is likely to rise over the foreseeable future. It refutes certain previously held notions that a majority of student veterans use their educational benefits on vocational certificates or on-the-job training programs. The MRP findings indicate that a majority of student veterans are earning bachelor's or graduate degrees. These levels of postsecondary degree attainment, combined with the leadership skills developed in the military, position student veterans to become tomorrow's leaders in numerous fields, such as business, public service, science, and engineering.

This report breaks new ground as well. Unlike previous research that waited several years or decades to examine student veteran completion rates and the effects of the GI Bill, the MRP utilized real-time degree attainment databases. This method gives policymakers, stakeholders, Veterans Service Organizations, and the American public the opportunity to know in near real-time the return on their GI Bill investment. Having real-time attainment data on student veterans instead of anecdotal, outdated data will also allow for more effective allocations of scarce resources; and it gives the American public the reassurance that tax dollars are being used wisely by those who have defended our nation.

While the Million Records Project is a vital first step in understanding the current generation of student veterans, it is not the last. This report provides as many answers regarding the postsecondary outcomes of veterans as it poses questions for future research. The next phase of analysis should focus on the drivers of academic success for student veterans so that effective programs can be brought to scale, thus increasing the likelihood that all student veterans achieve their academic goals and earn a postsecondary degree or credential.

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