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# Impact of the Post-9/11 G.I. Bill: An Examination of Retention of First Year Students in the Hampton Roads Area

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# IMPACT OF THE POST-9/11 G.I. BILL: AN EXAMINATION OF RETENTION OF FIRST YEAR STUDENTS STUDYING IN THE HAMPTON ROADS AREA

by

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## ABSTRACT

## IMPACT OF THE POST-9/11 G.I. BILL: AN EXAMINATION OF THE RETENTION OF FIRST YEAR STUDENTS STUDYING IN THE HAMPTON ROADS AREA

Kim Bullington Sibson
Old Dominion University, 2014
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The Post-9/11 G.I. Bill has had a tremendous impact on higher education institutions (HEI) across the country. As of 2011, the Veterans Administration (VA) had issued G.I. Bill payments to almost 500,000 veterans. This research examines the effect of the Post-9/11 G.I. Bill on student retention in different types of HEIs in the Hampton Roads region of Southeastern Virginia, an area that has a high number of military and military-affiliated residents. *Ex post facto* data from various institutions have been compared, with a public university, a for-profit college, and a two-year public community college to examine the retention rates of first year students using their Post-9/11 G.I. Bill benefits between 2009 and 2010. This research contributes to the literature in several ways. First, the G.I. Bill, passed in 1944 has had limited research associated with its usage in colleges and universities (DiRamio, Ackerman, & Mitchell, 2008; Rumann, 2009). Second, with the advent of the Post-9/11 G.I. Bill, administrators of HEIs and the federal government are examining this law in two ways: the administrators are examining the amount of money coming in from this benefit and the federal government is examining the number of dollars going out to HEIs. Third, research that has been

conducted on the Post-9/11 G.I. Bill deals primarily with qualitative data; this quantitative research will provide benchmark areas for other HEIs to compare themselves as the Hampton Roads region is well represented through the use of the Post-9/11 G.I. Bill (Stripling, 2010).

*Keywords: veteran, military, G.I. Bill, higher education institutions, first year student, retention, persistence, progression.*

To my parents, Jim and Tuy-Cam Bullington for always believing in me.
To my husband, Steve, and my sons Kevin and Oliver, for putting up with me on this wild ride.

- and -

To those who have walked with me along this path,
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## NOMENCLATURE

| | |
|---|---|
| ACE | American Council on Education |
| DEA | Dependents' Educational Assistance Program, Chapter 35 |
| DoD | Department of Defense |
| G.I. Bill | Veterans benefits used for postsecondary education from the US Department of Veterans Affairs |
| HEI | Higher Education Institution |
| IRB | Institutional Review Board |
| MGIB | Montgomery G.I. Bill, Chapter 30 |
| Post-9/11 G.I. Bill | Post-9/11 Veterans Educational Assistance Act of 2008, Chapter 33 |
| PMC | Postwar Manpower Conference |
| REAP | Reserve Educational Assistance Program, Chapter 1607 |
| ROTC | Reserve Officers' Training Corps |
| SCHEV | State Council of Higher Education for Virginia |
| SPSS | IBM Statistical Package for the Social Sciences |
| VA | US Department of Veterans Affairs |
| VSO | Veterans Services Officer |
| VEAP | Post-Vietnam Veterans' Educational Assistance Program |

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# CHAPTER 1 INTRODUCTION AND PURPOSE STATEMENT

## Introduction

The Post-9/11 G.I. Bill was introduced as the Post-9/11 Veterans Educational Assistance Act of 2008 (Pub. L. 110-252, H.R. 2642). It is a bi-partisan effort to encourage active duty military members to be retained longer in the armed forces. It also aims to provide a solution to rising costs of college tuition and day-to-day living expenses the former Montgomery G.I. Bill (MGIB) can no longer maintain (Korb, Duggan, Juul, & Bergmann, 2009). Additionally, this legislation has created a surge in enrollment in colleges and universities across the nation. As of Spring 2011, almost 500,000 servicemembers, veterans, or dependents had used G.I. Bill benefits (U.S. Department of Veterans Affairs, 2011b). Administrators in higher education must be prepared to take on these students who have diverse and differing needs from other student populations. A thorough understanding of the needs of these students is needed to identify the factors driving student academic success and to ascertain whether the Bill has had any effect on retention of student in colleges and universities. Questions need to be asked such as whether the financial support provided by the Bill, or other traditional retention factors such as outside influences and academic difficulties, have an impact on student retention in HEIs.

The 2010 census revealed that there are 21.8 million living veterans in the United States. Ethnically, these are comprised 17,700,000 non-Hispanic White; 2,300,000 Black; 1,700,500 Hispanic; 258,000 Asian; 153,000 American Indian or Alaskan Native;

and 30,000 Native Hawaiian or Other Pacific Islander servicemembers, as shown in Figure 1.1.

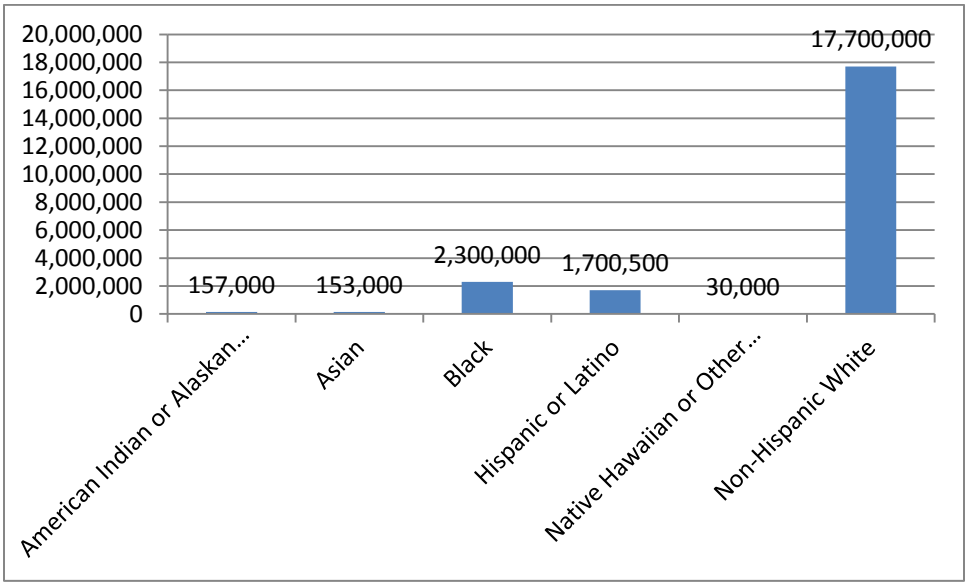


Figure 1.1 Veteran's Ethnic Diversity

With regard to gender, males comprise the majority with 20,200,000 to 1,600,000 females. Physically, 5,500,000 veterans hold a disability rating. Of those, 3,300,000 are service-connected disabilities, and 652,000 are rated at 70% disabled or higher (United States Census Bureau, 2010).

There are over 1.4 million active-duty personnel in the Army, Navy, Marine Corps, and the Air Force; 42,389 active duty Coast Guard personnel; 25 million veterans; and over one million reservists and National Guard members (U.S. Coast Guard, 2010; U.S. Department of Defense, 2010). Figure 1.2 shows the usage of G.I. Bill benefits by all eligible servicemembers, veterans, and their dependents from 2001 to 2010, an astonishing 101.20% increase. Baker (2008) reported that 400,000 students were

enrolled in undergraduate and graduate programs in off-duty voluntary education and 39,070 degrees were awarded to voluntary education participants. The Department of Veterans Affairs (VA) has additionally issued over $8.57 billion in Post-9/11 G.I. Bill benefit payments to 464,000 veterans (Wilson, 2011). In Spring 2010, the VA paid money to over 340,272 recipients (U.S. Department of Veterans Affairs, 2011b), in Spring 2011, through February 14th, over 321,500 students enrolled and were claiming VA benefits and this number is still growing (Wilson, 2011). It is important to remember that it is not only veterans who are using G.I. Bill benefits, but also active duty and reserve servicemembers and their dependents (i.e. spouses and dependent children).

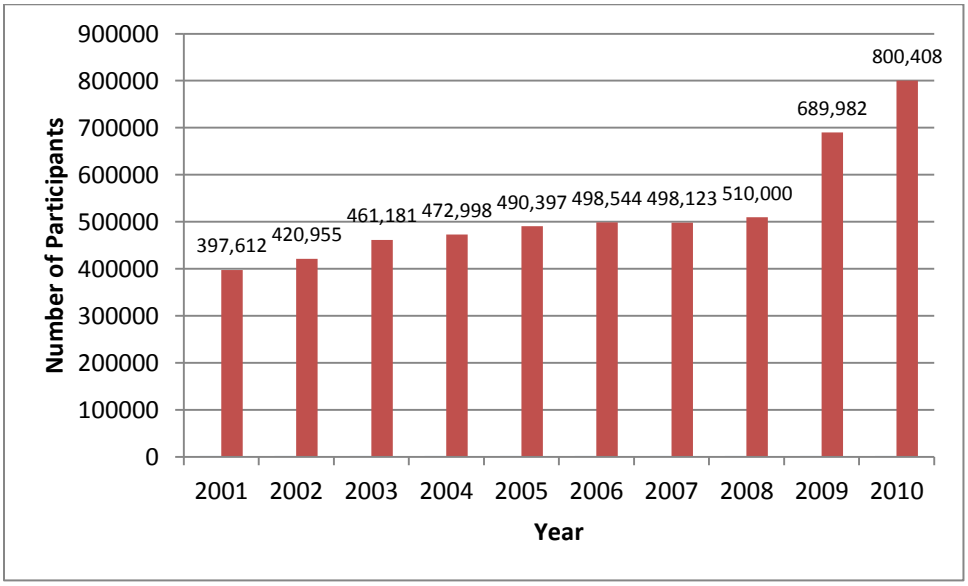


Figure 1.2 Participants in VA Education Programs by Fiscal Year.

Nine out of 10 enlisted servicemembers entered the military without a bachelor's degree (McBain, 2008). In 2007-2008, 43% of veterans attended two-year colleges; 21% attended public four-year institutions, 14% attended private non-profit institutions, and 13% attended for-profit colleges (Radford & Wun, 2009).

Patterson (1996) states that the original 1944 G.I. Bill is the "most significant development in the modern history of American education" (p. 69). It entitled returning veterans to receive money for tuition and books, as well as a monthly stipend to support themselves while enrolled in college, and low-interest loans for home purchases. "Veterans were older, better motivated, and included among their total 10 per cent who would not have gone to college without the G.I. Bill and another 10 per cent who 'probably' would not have done so"(Olson, 1973, p.605).

In order to address deficiencies in the MGIB due to ever increasing numbers of veterans, ongoing US involvement in overseas conflicts since 2001, and rising tuition costs, Senators Jim Webb (D-VA), Frank Lautenberg (D-NJ), Chuck Hagel (R-NE), and John Warner (R-VA) came together in a bipartisan effort to introduce the Post-9/11 Veterans Educational Assistance Act of 2008, more commonly referred to as the Post-9/11 G.I. Bill, or Chapter 33. In short, this Bill provides more flexibility in education benefits, supplies students with different payment incentives (such as book stipends, which were incidentally offered in a later version of the MGIB), and allows for dependents and spouses to also benefit from servicemembers and veterans' sacrifices for their country. Most importantly it affords servicemembers and veterans the chance to continue their education without having to rely on additional student loans to survive (Rash, Skinner, Cline, & Blanch, 2008). Although the Post-9/11 G.I. Bill is more

generous than the MGIB, it is still not as generous as the original 1944 G.I. Bill, in monetary terms (Radford, 2009). The Post-9/11 G.I. Bill offers an opportunity for servicemembers and veterans alike to attend college with a more comprehensive and larger benefits package that is not only available to them, but also to their dependents (spouses and children).

The critical retention period for students in postsecondary education is generally viewed as being during the transition from freshman-to-sophomore status as the period during which most students encounter difficulties adjusting to college (Astin, 1993; Hagedorn, 2005; Tinto, 1975, 1993). Persisting from the first to second year of college has been an issue that has been researched for decades; however there is no known research that specifically examines persistence or retention of students using G.I. Bill benefits., which creates a significant gap in the literature The 2010 U.S. Census additionally reported a "veteran is more likely than the average American to have earned a high school diploma, but less likely to have completed a college degree" (U.S. Census Bureau, 2012, n.p.). This is significant because in order to enlist in the military a high school diploma or equivalent is necessary; this may be considered a confounding factor as some are not using the G.I. Bill benefits.

Table 1.1

Veterans' Education Levels as Compared to the U.S. Population

| | High School Diploma | Bachelor's Degree |
|---|---|---|
| Veterans | 92% | 26% |
| Total U.S. Population | 86% | 28% |

For the purposes of this study, the following terms are defined as follows:

- *US Armed Forces.* Branches of the US military: Air Force, Army, Coast Guard, Navy, Marines
- *Servicemembers*. Currently employed full-time in one of the branches of the US Armed Forces
- *Veterans.* Previously employed in one of the branches of the US Armed Forces
- *Reserves.* Currently employed part-time in one of the branches of the US Armed Forces.
- *Military-Affiliated*. A servicemember, veteran, reservist, or family member (spouse or child(ren)).
- *Veterans Administration (VA).* The Federal authority that provides benefits to former members of the military.
- *Retention/Persistence.* Enrolling in college and remaining enrolled through graduation (Hagedorn, 2005). For the purposes of this study, retention is defined as a student attending a college or university starting with 0 (zero) to 23 credits

and remaining enrolled and completing 24 or more institutionally granted (non-transferred) credit hours, putting them into federally-defined sophomore status.

- *Attrition/Dropout*. Attrition/dropout is the inverse of retention (Hagedorn, 2005)
- *Progression.* Moving from one class rank the next (e.g. freshman to sophomore, sophomore to junior, junior to senior, senior to alumnus).
- *General Student Population.* (GenPop) Students who, in this study, do not have access or have chosen not to use the Post-9/11 G.I. Bill.
- *First Year Student.* A student in his or her first year at an institution. The student may have no previous college or may have transfer, military, or experiential credit awarded.

## Purpose Statement

The purpose of this exploratory study is to use an *ex post facto* data comparison to examine the retention of first year students who are benefitting from the Post-9/11 G.I. Bill. Data were gathered from a public four-year university, a public two-year community college, and a proprietary/for-profit university in the Hampton Roads region of Southeastern Virginia.

## Research Questions

The following research questions guided the study:

1. What demographic factors, if any, are significant predictors of first to second year student retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region?

This question prompts secondary questions for each of the postsecondary institutions being studied.

2. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region?
3. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a two-year public college in the Hampton Roads region?
4. What demographic factors, if any, are significant predictors of first year student retention of Post-9/11 G.I. Bill beneficiaries in a for-profit college in the Hampton Roads region?

A final research question allows for a comparison of populations:

5. What are the demographic factors of retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries?

In order for the most rigorous study possible, it is necessary to find the predictors of first to second year student retention for the general student population and then drill down to compare the G.I. Bill beneficiary population to the general population of returning first year students.

## Significance

The U.S. Department of Education provided $132 billion in grants and loans to students in 2009-2010 and the U.S. Congress has become increasingly interested in student outcomes and success at for-profit, nonprofit, private, and public schools (U.S. Government Accountability Office, 2011). The United States Government

Accountability Office released a report in December 2011. The report found that for-profit institutions had lower graduation rates for bachelor's degree programs, higher rates of unemployment for graduates, more student loan debt, higher loan default rates, and lower pass rates than did nonprofit private and public institutions (U.S. Government Accountability Office, 2011). This highlights the fact that there needs to be more stratified examinations of institutions across the board. Moreover, the Post-9/11 G.I. Bill will cost the U.S. Government approximately $76 billion over ten years (National Science Foundation, 2009); this will increase calls for accountability and transparency from not only elected officials, but from the population at large.

This study is significant as the Post-9/11 G.I. Bill is still in its infancy and its impact is not widely known. According to the Student Veterans Association, student veterans on campus will almost double in the next five years (Reynolds, 2013). As the Bill gains popularity among eligible veterans, servicemembers, and dependents, the U.S. Government and the Department of Veterans Affairs (VA) will be closely scrutinizing the effect and success of the Bill because it is dependent on tax payer dollars. In early 2013, Congress approved legislation requiring institutions of higher education to be more transparent regarding veterans via the *Comprehensive Veterans Education Information Policy* (P.L. 112-249). This law requires institutions to provide information to not only veterans, but to be transparent and accountable with enrollment, graduation, and retention rates. With more and more calls for accountability (Fain, 2013; Grasgreen, 2013), higher education must respond and show what services they are providing for veterans, and how they are tracking enrolled students and ensuring their highest rates of success.

In 2008, more than five years before the formal withdrawal of troops from Iraq, the Department of Defense (DoD) anticipated an influx of 2 million veterans of the Iraqi and Afghanistan conflicts. These students were attracted to the benefits of the Post-9/11 G.I. Bill to be returning or coming to America's colleges and universities (American Council on Education, 2008). For example, Virginia's Germanna Community College's enrollment increased by 21% (Germanna Community College President's Blog, 2009). In a letter to higher education executives, the Under Secretary of Veterans Affairs for Benefits indicated that as of September 11, 2009, in its first month of implementation, the VA had received 260,000 claims for the Post-9/11 G.I. Bill (Dunne, 2009; McBain, 2009). For the entire academic year of 2007-2008, 440,000 servicemembers used G.I. Bill benefits (Marklein, 2007), from May 1, 2009 through April 1, 2010, the VA received over 578,000 enrollment certifications (Wilson, 2010).

The first year of the Post-9/11 G.I. Bill was assessed by the RAND Corporation (Steele, Salcedo, & Coley, 2010). The study found that the G.I. Bill was a motivating reason for veterans in pursuing higher education. Some of the more appealing factors include the living allowance and the fact that payments are sent directly to the HEIs. Challenges to using the Post-9/11 G.I. Bill include lack of knowledge about benefits, claims processing delays, and transfer of military credits to college credits. The study also found that although students reported transition difficulties, other veterans provided support they needed, as did various campus officials. More recently, the Gallup Politics Group ran a poll of 1,268 veterans which showed that eight out of ten veterans were either very satisfied or satisfied with their education benefits and that three out ten veterans have used education benefits via the G.I. Bill (Saad, 2014).

States and individual institutions also play an important role in the execution of the Post-9/11 G.I. Bill. In-state tuition for veterans and servicemembers often plays a key role in whether or not a student enrolls in an HEI. Students are often frustrated by the amount of red tape they encounter when trying to be admitted and register. Moreover, they are daunted by the difference between themselves and their civilian counterparts and face informational, financial, cultural, and injury- and/or trauma-related barriers that traditional students do not necessarily have to face (McBain, 2008). Student frustration with administrative processes can also influence student attrition.

Research on veterans also shows that colleges and universities are failing to track student retention and success. It was found that 68% of colleges do not specifically track retention and graduation rates for veteran undergraduate students (McBain, Kim, Cook, & Snead, 2012). Data from McBain et al. (2012) also show that only 25% of colleges have some level of understanding on why veterans drop out but only 5% have data that show their retention efforts are working. Regarding advising and mentoring, 63% offer dedicated services for veteran students by administrators who understand the specific needs of this population, such as veteran-knowledgeable advisors, Veterans Affairs Certifying Officials, counselors trained in dealing with PTSD and TBIs specific to combat veterans, etc. While there is beginning to be an acknowledgment of current veteran students and their needs, this acknowledgement is still new in terms of understanding what drives retention of these students.

Retention of all students is directly correlated to involvement. Astin's (1993) involvement theory is defined as both the "quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 528). This

becomes more difficult as an adult or non-traditional student, who has lived a different life than those who went straight to college from high school. Military veterans and servicemembers have had very different experiences than their civilian counterparts, particularly those who have experienced combat situations. Special attention should be paid to this population to encourage involvement with the institution. One way would be to offer a student organization, such as a military student club, where students can come together to share their experiences, give to each other, and give back to the communities in which they go to school, work, and live. Students who are involved generally have better experiences in college and there is no reason that former or current military students cannot benefit from the same experiences.

In the last 50 years, there has been much research on retention of students in colleges and universities. However, there is a noticeable lack of research conducted focusing on the retention of veterans, particularly those using veteran's benefits to pursue their education. Moreover, in terms of retention, it has been suggested that the G.I. Bill alone is not sufficient to support access and retention; veterans need more support systems in place to be successful as students (Smith-Osborne, 2009). This study will open the pathway for the research of an important, underserved, and rapidly increasing student population.

## Research Design

A quantitative *ex-post facto* research design was selected for this study. This approach is appropriate because since the groups being studied already exist, random assignment is not possible (Breakwell, Hammond, Fife-Schaw, & Smith, 2006; Cooper & Schindler, 2001; Schenker & Rumrill, 2004; Sukhia, Mehrotra, & Mehrotra, 1966). An

*ex post facto* design also allows for investigating possible cause and effect relationships (Cohen, Manion, & Morrison, 2007) and allows for the observation of pre-existing variables under normal conditions (Lord, 1973).

## Data Collection

As the Post-9/11 G.I. Bill is still in its infancy, the data in this study will only be able to provide a snapshot of two years of retention data. The researcher worked with the data reporting offices of a public four-year university, a public two-year community college, and a for-profit four year university. Since all of these colleges and universities are in the Commonwealth of Virginia, there will be common reporting elements as they all must report specific data to the State Council of Higher Education for Virginia (SCHEV) and the Southern Association of Colleges and Schools Commission on Colleges (SACS-COC).

## Data Analysis

The dependent variable that guided this study was retention. The covariates included demographic information (gender, ethnicity, age), and use of the Post-9/11 G.I. Bill.

The data analysis included determining the factors for retention for all students at each of the institutions under investigation. This allowed for a comparison of students in the general population with the Post-9/11 G.I. Bill beneficiaries. This was accomplished through logistic regression for the dependent variable and covariates, as well as $\chi^2$ tests to examine the significance of the control factors. The values of the coefficients will be used to infer and describe relationships, if any are found.

## Conclusion and Dissertation Outline

The transition from soldier to scholar remains difficult. Students are faced with many obstacles, some of which seem insurmountable; however, the new Post-9/11 G.I. Bill provides opportunities for servicemembers, veterans, and their dependents to attend a higher education institution that meets their educational needs and helps them achieve their educational desires. It is vital for higher education institutions to understand how the new G.I. Bill will impact student retention, progression, and persistence, particularly in the highly volatile first to second year phase so that further efforts can be made to retain students through graduation.

Chapter One, Introduction, of this dissertation has discussed the background and significance for this study. Chapter Two, Literature Review showcases past literature on the government funding for military education, the G.I. Bill, and student retention, in general and as it pertains to veterans. Chapter Three, Method, shows how and why the data were analyzed. Chapter Four, Findings, presents the findings from the data. Finally, Chapter Five, Conclusion, presents concluding remarks, implications, and directions for future research.

# CHAPTER 2 RETENTION, PERSISTENCE, AND PROGRESSION OF VETERANS AND MILITARY-AFFILIATED BENEFICIARIES OF THE G.I. BILL

There have been many studies on student retention in the last 60 years, as this subject has become an increasing concern on college campuses in the United States and around the world. Colleges and universities typically propose data-driven decision making solutions and ask questions such as why students are not graduating in four years, or why a certain percentage of students progressed on to the next year of study. The average departure rate for first year students is 25% (Budden, Hsing, Budden, & Hall, 2010) and there are also concerns that culture and minority status affects progression of students (Abrego, Morgan, & Abrego, 2009; Harbrecht, Neidermeyer, & Tuten, 2006; Rivas, Sauer, Glynn, & Miller, 2007; Roach, 2008).

Persistence, in higher education, is defined as continued enrollment through graduation (Barefoot, 2004). Progression is defined as completion of the year and advancing to the next status (i.e. freshman to sophomore, sophomore to junior, etc.) (Cave, 2006). Most universities fail to graduate more than 65% of their undergraduates in the six year cycle which represents a decline in retention and graduation rates from 20 years ago (Bowen, Chingos, & McPherson, 2009). Six year attainment rates for students who began college or university in the 2003-2004 academic year at any institution show that 49% had received a certificate, associate's degree, or a bachelor's degree; 15% were still currently enrolled; and 35% had neither received a degree nor were they enrolled at any HEI (Radford, Berkner, Wheeless, & Shepherd, 2010).

With an increase in adult students (over 25 years old) attending college and university campuses, research is becoming more prevalent on adult students' needs, but there are still gaps that have not been addressed (Fincher, 2010), particularly within certain subpopulations. One of these subpopulations, veterans, has recently become of significant interest in the United States because of the Post-9/11 G.I. Bill.

> Veterans Administration officials say they don't track retention rates or even know exactly how many Iraq and Afghanistan veterans are currently using GI Bill benefits to attend college. But they, too, applaud the effort to help returning soldiers earn their degrees. (Zdechlik, 2005, n.p.)

There remains a dearth of research and literature on students as veterans and their retention, persistence, and progression through graduation (DiRamio et al., 2008; Rumann, 2009).

## Student Retention

Retention did not become of great concern to colleges and universities until the 1970s, and this occurred then specifically for three reasons. First, states mandated that higher education massify, meaning provide tertiary education to over 50% of the population (Kember, 2010); second, there was a call to invest in learning as it contributed to national welfare. Finally, due to inflation, budget cuts, and the end of the Draft, HEIs had to change their approach to recruiting and retaining students (Thelin, 2010). In the 1980s, with increasing accountability in intercollegiate athletics, academic performance once again became a hot topic as HEIs were receiving increasing levels of federal financial assistance. The Student Athlete Right-to-Know and Campus Security Act (P.L.

101-542) requires HEIs to report graduation rates of student athletes; this extends to all student athlete data that are used to provide a baseline for the entire student body.

The study of retention of students in higher education, as a whole, is based primarily on Durkheim's (1961) work on suicide which examined sense of belonging: when someone feels membership in a group and when they have supportive friends, they are less likely to commit suicide. Moreover, the more regulated a society the more likely suicide is because of a higher chance of alienation if one does not conform to societal norms; conversely the opposite is true, the lack of regulation that isolation brings, which can create a lack of discipline, or feelings that no one cares, can cause people to commit suicide. This idea can be directly related to retention, persistence, and progression of students in higher education because of the idea of membership and non-membership in a supportive society, in this case, on a college or university campus, and the correlating decrease in the likelihood of suicide, or in the case of colleges and universities, attrition.

Retention is directly related to persistence and progression; if a student is not retained, the student does not persist or progress. There are several models that deal with predicting retention, persistence, and progression of students through higher education. Spady's (1970) model indicates that students who share group values and friendship have higher social integration, thus experiencing higher satisfaction in education and stronger institutional commitment that their non-involved out-group counterparts. He examined characteristics such as family background, academic potential, and socioeconomic status as well as negative and positive grade performance and intellectual development. Spady (1971) found that satisfaction with an institution does not directly correlate to dropout rates, but is indirectly related to dropout rates through the level of commitment to the

institution. Sewell and Hauser's (1972) model has eleven independent variables that have some effect on student attrition, whether direct or indirect, on educational success: father's education, mother's education, father's occupation, parental income, mental ability, high school grades, teachers' encouragement, parental encouragement, friends' plans, college plans, and occupational aspiration. This model explains the process of degree attainment in three spheres: educational, occupational, and economic. Donaldson and Graham's (1999) Model of College Outcomes particularly examines differences between adult and traditionally-aged students. This model is based on five components that affect older students specifically: prior experiences, psychosocial and value orientation, cognition, the connecting classroom, and life-world environment. The connecting classroom is the key component to this model. For younger, traditionally-aged students social involvement has more influence on learning outcomes; for adult students, there is a need for social connections. Adults need to feel connected with faculty and their peer students, and create connections through the context of knowledge (Donaldson & Graham, 1999).

Bean's (1980) work on student attrition is based on four categories (dropout; satisfaction and institutional commitment; organizational determinants – i.e. routinization, practical value, institutional quality, etc.; and background variables – i.e. students' pre-matriculation characteristics such as parent's education, socioeconomic status, etc.) that have some influence on students' interaction in college and university. The study found that men and women leave university for different reasons, however institutional commitment was the key factor as men left even when they were satisfied and women were less likely to leave when they exhibited a strong institutional

commitment. Moreover, opportunity to transfer to a different college or university also had an effect on student attrition.

Pascarella (1980) examined contact with faculty and dropout rate. His model combines students' background characteristics with institutional factors, educational outcomes, informal contact with faculty, and *other college experiences* as factors that lead to persistence or the decision to withdraw from an institution. He found that there are direct correlations to the amount of informal, out-of-the-classroom interaction with faculty and satisfaction with college, intellectual development, academic achievement, and progression from the freshman year to the sophomore year in college.

Tinto (1993, 1998) presented stages of institutional departure: the *Rites of Passage* and the *Stages of the College Career*. He based his theory on Arnold Van Gennep, a Dutch anthropologist who studied the rites of memberships in tribal societies. Central to student departure and retention is the movement of individuals from one group to another. These rites of passage are separation, transition, and incorporation. Each of these stages has the key element of patterns of interactions between individuals and the societies to which they belong. The separation stage is characterized by a discernible decrease in communication from the individual to society-at-large. Transition occurs when the individual begins to interact within another, new society. This stage is key to individuals understanding their role and being trained (or self-training) to become members of the group. The final stage, incorporation, involves becoming a participant member in the new group or society. These rites of passage and their associated stages can also be cyclical with individuals moving from one group to another and beginning the progression through the individual stages again (Van Gennep, 1960). Tinto (1988)

argues that college students are members of one community (the college or university) but are also members of various subsets within the larger community. Thus, college students must go through different rites of passage for each new community they find themselves engaging with while possibly separating themselves from other communities that they belong to. In the *Stages of the College Career, s*tudents transitioning to college and university must begin the first phase, Separation, by beginning to disassociate with past communities (e.g. high school, hometown, etc.). This period of transition is one of excitement, fun, stress, and disorientation. This overwhelming amount of differing emotions is hard on students making such a vast transition, especially traditional students (age 18-22). For more mature students, this is also a bewildering time. Tinto (1988) argues that those staying at home while attending college do not necessarily have to make the same disaffiliations as traditionally-aged students; however they are not able to take full advantage of the new communities to which they belong because the immersion levels are different. The second stage is the Transition to College. In this stage, students are beginning to become familiar with the "norms and patterns of behavior appropriate to integration in the new communities of college" (Tinto, 1988). However, at this point, students face the difficulties of adjusting to their new environments and this has major implications on their willingness to remain in college through graduation; their sense of bewilderment and frustration can become insurmountable, or they are not fully committed to completing their education and end up dropping out. The final stage, Incorporation in College, is when individuals become engaged in the university/college community and the various sub-communities and must adhere to the norms, rituals, and traditions of each. For the most part, however, students are left on their own to find their

way and learn and acquire the norms of each society and community; and if they cannot find ways to incorporate the chance of leaving the college/university increases (Tinto, 1988). Tinto's theory evolved in 1993 where he identified academic difficulties, inability of students to resolve educational goals, and the failure to become or remain incorporated into the groups and communities of the institution.

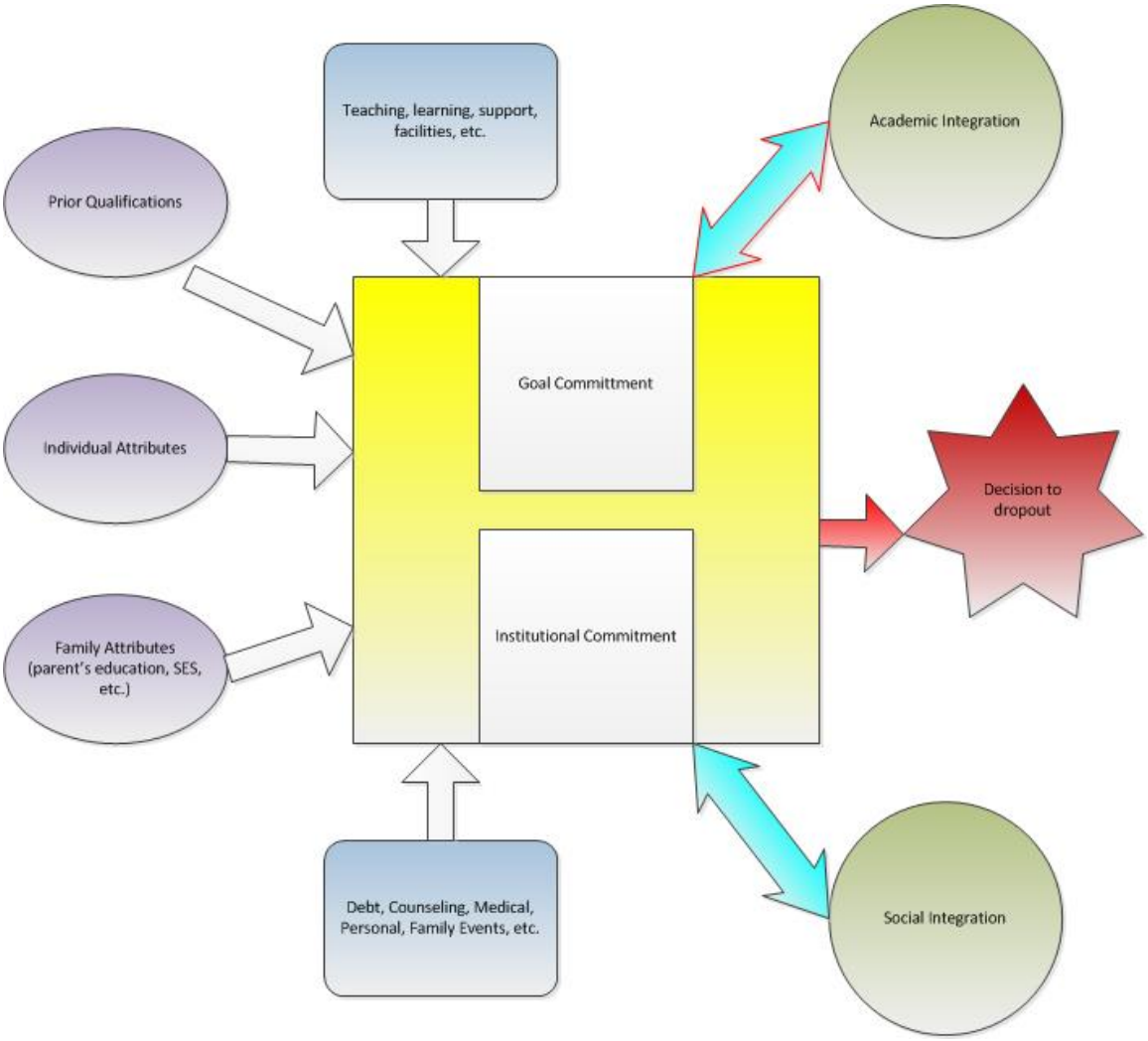


Figure 2.1 Tinto's (1975, 1987, 1993) Student Integration Model

Tinto's (1975, 1987, 1993) Student Integration Model also examines student persistence with regard to students' individual entry characteristics, which include race, sex, socioeconomic status, academic ability, high school grade point average, academic and social attainments, value climates, and expectational climates and how these factors have a direct correlation to a student's commitment to the completion of an academic degree and persistence in college. Retention, in Tinto's view, is based on students' goal commitment and institutional commitment and there are many drivers which lead to attainment of these goals. As a student integrates further and further into the institution's communities, there is a positive influence on that student's retention and an enhancement of the commitment to complete the educational endeavor (Tinto, 1993). Mature students, in general, tend to be more committed to their academic programs (Pollard, Bates, Hunt, & Bellis, 2008); however they also face similar and dissimilar issues with their integration into college and university and may have other reasons to leave such as financial or family concerns (Yorke & Longden, 2007, 2008).

Martinez (1995) indicates that most data collectors tend to ask the wrong questions when looking at information on retention of students. The first error is that institutions only ask for one reason why a student left, when there can be, and usually are myriad reasons for student departure. Demographic indicators are not the only factors leading to student departure, and are often misconstrued as the sole determining factor, and while other reasons should be examined, including financial situations, work and family demands, and individual and cultural attitudes regarding persistence and completion (Martinez, 1995). Larger research studies have tended to rely heavily on qualitative judgments; draw from the wrong populations; or from volunteers; lack control

groups; do not distinguish between large and small impact retention efforts; and suffer from generalizations and do not properly identify cause and effect relationships (Cousins, 2002; Martinez, 1996, 2000, 2001). Martinez (2001) argues that demographic factors, student decision making, student motivation, college-related issues, and advice and guidance also play major roles in retention of students.

Chen and Thomas' (2001) work on student persistence in Taiwan proposed two models: the Primary Persistence Model (based on academic integration, social integration, parental education, gender, entrance examination, gym grade, major departments, housing, occupational guidance programs, and academic remedial programs) and the Secondary Persistence Model (based on significant and non-significant predictors of persistence). Interestingly, students who did not like gym or other extracurricular activities tended to not be retained. They compare this Taiwanese gym grade to social integration in the US.

Pascarella, Pierson, Wolniak, and Terenzini (2004) examined first generation college students and found that they are less involved in extracurricular activities, athletics, and volunteer work than legacy generations. This is because first generation students are less likely to live on campus and are more likely to have greater work responsibilities. However, when they did get involved, they tended to benefit to a greater degree than their legacy peers in academic skill areas and focus on degree plans.

As the world becomes flatter, cultural diversity can wreak havoc with retention. Differing cultural norms can have a great impact on whether or not a student will be able to fit into a college or university's varied groups and societies. Differences in time,

space, and communication (rhetoric and nonverbal), educational levels, and a basic sense of belonging all play into whether or not a student from a different culture can find his or her place in a new society (Davidhizar & Shearer, 2005).

Pleskac, Keeney, Merritt, Schmitt, and Oswald (2011) developed a detection model of college withdrawal. This framework is based on decision-making processes students undergo when withdrawing from institutions. In other words, they found that there are precipitating events (tuition increases, bad academic results, etc) that drive students' decision to withdraw; students have internal criteria, and if these events meet those criteria, they withdraw.

## Tinto's (1993) Effective Retention Strategies

Tinto (1993) defines *Dimensions of Institutional Action* that include tools and ideas that colleges and universities can use to effectively retain students. The first idea is to define exactly what *dropout* means. Institutions must have clear goals and commitments toward retention and these must be reflected in the mission. Moreover, if a student does not see their departure as a degree of failure, neither should the institution.

Principles of effective retention include institutional commitment to students, educational commitment, and social and intellectual community development. The first principle states that institutions should put student welfare above and beyond institutional goals and that educational programming should remain committed to students' diverse needs and interests. Educational commitment means that these retention programs are holistically viewed as a commitment to education for everyone, not just a select few students. Finally, these retention programs ensure that students are integrated into society

as citizen scholars by creating supportive and social educational communities in which students can join, grow, and belong (Tinto, 1993).

In order to effectively implement these strategies, institutions should provide enough resources for faculty and staff so that programs for retention can be implemented and employees are incentivized to participate as well as properly trained; moreover, institutions should have a strong commitment to long-term retention program development and ownership of these programs should belong to those implementing the programs. An institution-wide approach must be coordinated in a collegial and collaborative manner, and efforts should focus on student retention. Finally, retention programs should be engaged in a continuous improvement process to ensure that every effort is made to retain students (Tinto, 1975).

## Adult Students

Historically, research on students in higher education has mostly centered on the traditional-age student, 18-22 years old. However, more recently, research on the more nontraditional-age student, usually over age 25, has emerged. Between 1970 and 1990, adult learners in the United States, aged 25 or over, increased from 28% to 43% of students in college (U.S. Department of Education, 2002). In 2010, it was estimated that adult learners represented 38% of tertiary learners (Jacobs & Hundley, 2010), but it is still too early to tell if those estimates will be met. Non-traditional students, generally, have not been considered in retention efforts and they tend to get less support than do traditionally-aged students (Fincher, 2010).

Boshier (1973) examined participation and dropout of adult students. He used Maslow's (1967) Theory of Metamotivation to define *deficiency motivated people*, who use work and education "more for achieving gratification or lower basic needs, of neurotic needs, as a means to an end … or as a response to cultural expectations" (as cited in Boshier, 1973, p.256) and *growth motivated people*, who have "satisfied lower-order needs in Maslow's hierarchy" (p. 256). He found that adult students who do not participate and/or dropout tend to do so because of not having enough organized educational experiences and that educators, in particular, must pay close attention to formal and informal environmental aspects as regards this population.

Clarke (1980) found that adult students were more amenable to remedial courses than were traditionally-aged students, and they were more receptive to feedback regarding preparedness for college. Horan (1990a) examined Vietnam veterans as mature students and found that although some experienced issues with alcohol and drugs, overall they were fairly typical mature students whose worries included how to pay for college and provide for their families. Richardson (1994) and Richardson and King (1998) argue that adult learners also have the added barrier of needing to relearn how to study effectively and have to deal with pejorative stereotypes such as age related changes to intellectual capacity. Yorke (1999) found that mature students who left university prematurely in the United Kingdom were more likely to have family responsibilities and/or financial problems that influenced their withdrawal. McAleavy, Collins, and Adamson (2004) identified three categories of barriers that affect retention of adult students: situational (family structure, finances, culture), institutional (cost of education,

availability of programs, entrance requirements), and dispositional (attitudes and values of a person towards learning).

Comparisons have also been made between younger and adult college students (Johnson, Wallace, & Sedlacek, 1979; Mangano & Corrado, 1980; Warchal & Southern, 1986). These comparisons indicate that college administrators and faculty should be aware of the difficulties encountered by adult students entering a traditionally-aged atmosphere and create programs for transition of adult students to university and college campuses.

Pollard et al. (2008) performed a telephone survey of mature students in England and found that many respondents felt that university was an option, even at an older age. Mature students either do not see further education as a possibility in the future, it is something they are actively considering, or it is something they are considering in the near future. Many adult students, however, are unsure about how to start the process of enrolling, or how much university will actually cost them, but feel that it is important to be further educated to be more employable. They also found that adults prefer to go to school part time, in the evening, at a campus near home. Finally, employer support is important for mature adults, not only financially, but if it created more opportunities for advancement at work (Pollard et al., 2008).

Fincher (2010) examined adult student retention. He argues that there are four methods to increase retention: 1) raising entrance standards, 2) decreasing academic rigor, 3) decreased pace (e.g. allowing students to learn over longer periods), and 4) learning enhancement. He puts forth 12 recommendations to help increase retention for

mature students with regard to learning enhancement. Six are under the academic umbrella and six are under the administrative one. *Accelerated learning programs* can help adult students by saving time and streamlining processes. Providing *tutoring services* can also enhance learning; not only do students get individualized attention, but they can improve academic deficiencies. This can be further strengthened through *web-based learning support*, which can use methods such as software programs to create opportunities for students to have interactive learning experiences. *Placement testing and remediation* allow for students to be placed in courses in which they are more prepared to succeed. *Curriculum redundancy* occurs when the same concept is repeated over different courses, or for emphasis on importance (Johnstone & Maloney, 1998). *Applied research* creates avenues for students to learn and become engaged with their institutions (Lopatto, 2006) and allows student to apply their knowledge to real-life circumstances (Hur & Kim, 2007), while rapidly learning (Fincher, 2010). Creating avenues for adult students to have *international exposure* can "enhance the student experience and therefore increase commitment to completion" (Fincher, 2010, p.16). Fincher argues that higher education administrators should make changes to increase student retention by decreasing barriers to education. *Alignment of loan dispersal and course scheduling* plays a large role in the ability of adult students to attend classes and to help lessen the financial burden, in the short term, for adult students. Eliminating *confusing terminology* can also reduce misunderstandings for adult learners. Having *increased communication of expectations for students* available in different modes (e.g. on call counselors, online help desks, being open after hours, etc.). Finally, having *current technology* can help

adult students, as, like their counterparts, they are dependent on technology to function in the modern classroom (Fincher, 2010).

Tinto's (1993) model is problematic with regard to adult students as this population, generally, comes to higher education for differing reasons than those of their traditionally aged counterparts. Older students are more committed to their program of study because they have not only considered the choice to enter higher education but are generally pursuing an education frame that will advance them in their careers (Yorke, 2004). Mature students also have outside factors and commitments that can make their higher education journey more solitary – they are not as involved in campus social and academic activities. This does not allow adult students to have a sense of belonging that will help increase retention, persistence and progression in higher education (Yorke, 2004).

## Military (and Military-affiliated) Students

Having a military force that is better educated is valuable to the government for many reasons: increases in productivity, retention in the service, and increased morale (Thirtle, 2001). Radford (2009) indicates that, in general, servicemembers attending colleges and universities tend to be younger than veterans, but older than traditional undergraduate students as they serve in the military prior to attending college. Most military students also were minorities in 2007-08 and women represented 27% of all military undergraduates in the same year, but only represented 7% of veteran students (Radford, 2009). Location is extremely important to students using G.I. Bill benefits and most indicated that cost and program availability was a deciding factor in attendance.

Almost half of all servicemembers at public four-year colleges receive G.I. Bill benefits. 47% are pursuing associate degrees and 42% bachelor's degrees (Radford, 2009).

**Minority Veterans.** Limited research has examined racial status of veterans in higher education. Compared to Caucasian veterans, African American and Hispanic veterans are younger, less likely to hold college degrees, and make less than $30,000 per year (Washington, Vallentine Villa, Damron-Rodriguez, & Harada, 2005). A study by Kearney, Draper, and Barón (2005) found that although more Asian American, Latino, and African American students were found to have more need for counseling, Caucasian students attended more counseling sessions than their peers. African American veterans comprise 10.3% and Hispanic comprise 3.6%; these numbers are projected to increase to 15.4% and 8.7%, respectively by 2036 (Olsen & O'Leary, 2011). Kleykamp (2010) found that due to a reduction in the military in the 1990s, the number of African Americans in college increased.

**Women Veterans.** The roles of women in the military have changed since women began military service in the All-Volunteer Force in 1973. As recently as 2012, varying degrees of military jobs are available to women: Air Force (99%), Navy (88%), Marines (68%), and Army (66%) (Parrish, 2012). In 2010, women comprised 8.1% of veterans and that number is projected to rise to 15.1% by 2036 (Olsen & O'Leary, 2011).

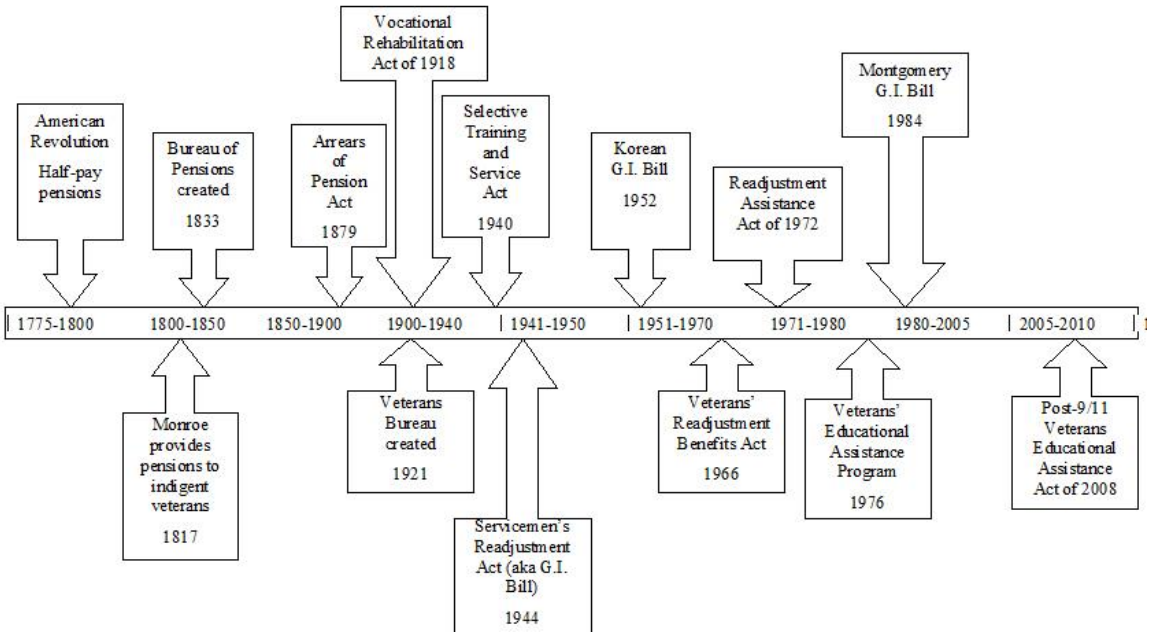


Figure 2.2 A Timeline of Veterans Benefits

**The Morrill Act of 1862.** The Morrill Act of 1862 (7 U.S.C. § 391), also known as the Land Grant College Act, was enacted to create educational institutions in each state that was primarily focused on

> where the leading object shall be, without excluding other scientific and classical studies and including military tactic, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life. (Morrill Land-Grant Act, 1862, n.p.)

This Act further established military training programs at land-grant institutions and after the United States' entrance into World War I, the 1916 National Defense Act was brought into law, creating the Reserve Officers' Training Corps (ROTC), as well as the active duty forces, the reserves, and the National Guard (Rumann & Hamrick, 2009). The Morrill Act was one of many precursors to the G.I. Bill and put a military presence, in different forms, on America's colleges and universities.

**Veterans Benefits from the American Revolution through 1943.** As early as the American Revolution (1775-1783), veterans have asked for benefit packages. In 1778, veterans demanded pensions consisting of half of their salary. Originally, President George Washington denied their request, concerned with cost and repercussions from the citizenry, but he acquiesced after a rash of officer resignations. In 1780, Congress agreed to grant half-pay pensions to those officers who remained in the Army for the duration of the War (Juul, 2009).

In 1817, President James Monroe, facing a large budget surplus, granted pensions to indigent veterans of the Revolution and the more recent War of 1812. This allotted twenty dollars per month to officers and eight dollars per month to enlisted soldiers. However, in 1820, Congress required that veterans provide proof of poverty to receive the pension. This was met with massive resistance and in 1823, the legislation was amended to remove the poverty clause (Juul, 2009).

As the Civil War was beginning to escalate, the Union Army, concerned with a lack of volunteers, provided an incentive: they would pay soldiers who had been wounded in the line of duty. Officers would receive up to thirty dollars per month and

enlisted soldiers beginning at eight dollars per month. This was also the first time that widows and dependents would be entitled to pensions should their soldier be killed in battle (Juul, 2009). On top of the pensions, soldiers injured during battle would also be entitled to one-time payments "$50 for a missing arm or $75 for a missing leg" (Juul, 2009, p. 18).

The Arrears of Pension Act of 1879 was enacted with the aim of providing that all pensions should begin from the "date of death or discharge" (Glasson, 1900, p. 95). Prior to this legislation, pensions commenced only after application for benefits (Holcombe, 1999). This allowed beneficiaries to receive the arrears that had accrued from discharge/death through application of benefits. A later proviso, the Increase Act of 1886, granted pensions to the soldiers and widows of the Mexican War of 1846 (Glasson, 1900).

Further legislation granting more benefits to veterans ensued in the years following Reconstruction. The Dependent Pension Act of 1890 was enacted to make more veterans eligible for benefits (Skocpol, 1993). The Vocational Rehabilitation Act of 1918 provided funds to rehabilitate disabled veterans (Elliott & Leung, 2004) leading to the creation of the Veterans Bureau in 1921 (which would change to the Veterans Administration in 1930). This office was established to administer veterans benefit programs. The Selective Training and Service Act of 1940 required former employers to rehire veterans who had been conscripted to duty after they returned.

In 1932, due to the worsening of the American Depression, veterans were given service certificates instead of money from the Veterans' Bureau. This created outrage

and caused the creation of the Bonus Expeditionary Forces: a group estimated between 15,000 and 40,000 strong. These veterans laid siege on the Capital, and, although the results were not immediate, there were two major results: a) the government recognized the power of the veterans as a group and b) by 1937 these veterans were paid in settlement of their certificates, which was considered a huge victory (Veterans Administration, 2007).

## The G.I. Bill (1944-1984)

As benefits and pensions had become commonplace for veterans and their dependents, more and more demand was placed on the Veterans' Bureau by veterans to be provided with increased access to education and housing. While many think the G.I. Bill's advent was altruistic, a depressed economy following World War II led President Franklin Delano Roosevelt to call for ways to reignite the economy and to prevent economic catastrophe as several millions of veterans returned to their civilian jobs (Haydock, 1996; Juul, 2009; Mettler, 2005a).

Roosevelt commissioned a report from the National Resources Planning Board - the Postwar Manpower Conference (PMC). This group's 1943 report strongly emphasized the fact that one of the government's main efforts should be to find ways to help returning soldiers reintegrate into society. Moreover, they suggested that all veterans should be eligible for one year of free training, but only for job markets in need of labor. A second committee, the Armed Forces Committee on Postwar Educational Opportunities for Service Personnel suggested that all veterans who served for a minimum of six months should be entitled to one year of free education; however those

demonstrating exceptional academic ability could be provided with additional educational aid (Mettler, 2005b).

Concurrent to this process, the American Legion was working on its own separate efforts to persuade the government to provide increased benefits to veterans. Led by John Stelle, the former governor of Illinois, the Legion proposed what they called "a bill of rights for G.I. Joe and G.I. Jane", later to become the "G.I. Bill of Rights". This proposed education up to four years, depending on length of service (Mettler, 2005b). After some debate in both houses, the Serviceman's Readjustment Act of 1944 (P.L. 78-346, 58 Stat. 284m), now popularly known as the G.I. Bill, was signed into law. In a speech on June 22, 1944 announcing the passage of the bill, Roosevelt stated, "the members of the armed forces have been compelled to make greater economic sacrifice and every other kind of sacrifice than the rest of us, and they are entitled to definite action to help take care of their special problems" (Roosevelt, 1943, n.p.).

**The Serviceman's Readjustment Act of 1944.** Patterson (1996) states that the G.I. Bill is the "most significant development in the modern history of American education" (p. 69). The initial bill provided for veterans "to collect $20 a week in unemployment compensation for up to a year, home and farm loans up to $2,000, and up to four years of education at $500 a year plus monthly subsistence payments of up to $120" (Juul, 2009, p. 29). In 1945, an amendment to the bill provided veterans more time to enroll in college increasing the time from two to four years after discharge and increased the level of subsistence allowances (Mettler, 2005b).

By the mid-1950s, almost eight million veterans had taken advantage of G.I. Bill benefits – 2.2 million went to colleges and universities, and the rest attended trade or vocational schools (Juul, 2009; Mettler, 2005b; Olson, 1973). The G.I. Bill entitled returning veterans to money for tuition and books, as well as a monthly stipend to support them while enrolled in college, and low-interest loans for home purchases. "Veterans were older, better motivated, and included among their total 10 per cent who would not have gone to college without the G.I. Bill and another 10 per cent who 'probably' would not have done so" (Olson, 1973, p. 605).

The influx of students on college and university campuses was met with "uncritical acceptance" (Olson, 1973, p. 608). Higher education responded by creating larger classes, erecting Quonset huts for extra teaching space, the administration enlisted wives of faculty as well as graduate students to teach extra classes (Haydock, 1996). For the first time in U.S. history, 60 universities passed the 10,000 student enrollment mark (Olson, 1973).

**The Korean G.I. Bill (1952).** A main differentiating factor in the difference between World War II and Korean War soldiers is that many attempting to avoid conscription into the Korean conflict chose to take an educational deferment, which would allow those who could afford college to attend (in an attempt to avoid the fighting) while those who could not joined the military (voluntarily or not) and then received G.I. Bill benefits (Bound & Turner, 2002). Public Law 550, also known as the Korean G.I. Bill of Rights was enacted in 1952, and its major contribution to higher education was that it would only allow "a limited number of new colleges of unquestioned academic standing, some of which are conducted or sponsored by religious orders or denominations, to qualify for

participation in this new program" (P.L. 78-346, 48 State. 284m §227). This legislation was not as generous as the original 1944 G.I. Bill – instead of having full tuition and a stipend, Korean veterans received a stipend of $110/month for a single veteran from which tuition had to be paid (Bennett, 1996; Smole & Loane, 2008), regardless of the cost of tuition. Additionally, educational assistance programs were made available to widows of veterans and wives of veterans who were classified as totally disabled (Mosch, 1971).

**The Veterans' Readjustment Benefits Act (1966).** The Veterans' Readjustment Benefits Act (P.L. 89-358), also known as the Post-Korea and Vietnam-Era G.I. Bill was enacted in 1966. This legislation was the first to provide benefits to members of the armed services while still on active duty. Veterans who had more than 180 consecutive days of active duty service were provided one month of educational assistance for each month of service. Single veterans received $100/month, initially, but by 1984, they were receiving $376/month (Smole & Loane, 2008). With the passage of this legislation, more eligible veterans (76%) enrolled in college and university and by 1980, 5.5 million veterans had used their benefits (Veterans Administration, 2007).

**Post-Vietnam Veterans' Educational Assistance Program of 1976.** Vietnam-era veterans are more numerous than veterans of any other era and are also the last group of servicemembers who were subject to the Draft (Teachman, 2005). The Post-Vietnam Era Veteran's Educational Assistance Program (VEAP) was established under Title IV of the Veteran's Education and Employment Assistance Act of 1976 (P.L. 94-502) and is also known as "Chapter 32". This legislation was used as a recruitment tool for the Armed Services during peacetime and is the first time that participants in the program were

required to contribute to the program by paying between $25-$100/month, up to a $2,700 cap. VEAP benefits also had to be used within ten years of discharge (Smole & Loane, 2008). The federal government would match each dollar contributed toward VEAP with two dollars (Veterans Administration, 2007). Later, members who had participated in VEAP were allowed to transfer their benefits with the inception of the Montgomery G.I. Bill (Mercer & Skinner, 2008), which is explained below.

**The Montgomery G.I. Bill (1984).** The Montgomery G.I. Bill was named after Representative "Sonny" Montgomery of Mississippi (Juul, 2009) and is comprised of two programs: MGIB-Active Duty (MGIB-AD), or "Chapter 30", and MGIB-Selected Reserves (MGIB-SR), or "Chapter 1606". The MGIB-AD was enacted from the Department of Defense Authorization Act, 1985 (P.L. 98-525). Individuals had to pay into the MGIB-AD with $100/month for 12 months in order to receive benefits, and these benefits had to be used within three years and within ten years from the date of discharge. These benefits are paid on a monthly basis and can be used for tuition, fees, books, supplies, and other educationally-related expenses. Moreover, there is also a "Kicker"/College Fund – this allows students to receive additional monetary benefits and students must also pay into this fund. Students may also use the Tuition Assistance "Top-Up" program, which was established in 2001 under the Floyd D. Spencer National Defense Authorization Act (P.L. 106-398). This allows students who are approved through the Tuition Assistance Program to receive benefits above and beyond their G.I. Bill benefits if students' benefits are less than the college or university's tuition and fees. To qualify for the MGIB-SR, individuals in the Selected Reserves must agree to a six-

year service obligation. Up to 3 years of benefits that must be used within 14 years of established eligibility are available to these individuals (Smole & Loane, 2008).

**Overview of Benefits (1944-1984).** To date, the original G.I. Bill legislation of 1944 is still the most generous benefits package to date (Radford, 2009). As benefits have decreased, requirements to re-enlist or to pay money toward education benefits have become more and more prevalent. An overview of benefits for veterans is provided below. It shows the evolution of the G.I. Bill from its inception in 1944 through the MGIB.

Table 2.1

Selected Characteristics of Veterans' Education Benefit Programs (Period of Service and Use)

| Criteria | G.I. Bill of Rights | Korean G.I. Bill | Vietnam-Era G.I. Bill | Post-Vietnam Era Veterans' Educational Assistance Program (VEAP) | Montgomery G.I. Bill – Active Duty | Montgomery G.I. Bill – Selected Reserves | Post-9/11 G.I. Bill |
|---|---|---|---|---|---|---|---|
| Year enacted | 1944 | 1952 | 1966 | 1976 | 1984 | 1984 | 2008 |
| Initial authorization | P.L. 78-346 | P.L 82-550 | P.L. 89-358 | P.L. 94-502 | P.L. 98-525 | P.L. 108-375 | P.L. 110-252 |
| Period of service | 9/16/40 - 7/25/47 | 6/27/50 - 1/31/55 | 2/1/55 - 8/4/64 (Post-Korean War veterans) 8/5/64 - 5/7/75 (Vietnam-era veterans) | 12/31/76 - 7/1/85 | Entered active duty after 6/30/85 | 7/1/85 - present | 8/1/09 - present |
| Period of use | 6/22/44 - 7/25/56 | 8/20/52 - 1/31/65 | 6/1/66 - 12/31/89 | 1/1/77 - present | 7/1/85 - present | 7/1/85 - present | 8/1/09 - present |

*Note.* Adapted from Smole and Loane (2008) and Benefit Comparison Chart (U.S. Department of Veterans Affairs, 2011a).

Table 2.2

*Selected Characteristics of Veterans' Education Benefit Programs (Highest Benefit and Contribution).*

| **Criteria** | **G.I. Bill of Rights** | **Korean G.I. Bill** | **Vietnam-Era G.I. Bill** | **Post-Vietnam Era Veterans' Education.** | **Montgomery G.I. Bill – Active Duty** | **Montgomery G.I. Bill – Selected Reserves** | **Post-9/11 G.I. Bill** |
|---|---|---|---|---|---|---|---|
| Highest standard benefit<br><br>(2010 dollars) | $1,069 month and $630/month subsistence | $921/month maximum | $685/month | $1,098/month | $618.53/month | $288.93/month | ~$408/credit for tuition<br><br>~10,502/term in fees<br><br>~1,333/month housing allowance<br><br>1,000 year for books & supplies |
| Contribution | None | None | None | $25-$100 per month; $2,700 maximum | Pay reduction of $100/month for 1st 12 months | None | None |

*Note.* Adapted from Benefit Comparison Chart (U.S. Department of Veterans Affairs, 2011), NewGIBill.org (2011), and Smole and Loane (2008). "~" indicates national averages for Post-9/11 G.I. Bill averages nationwide as rates are determined per highest undergraduate tuition at a public university in each state.

Table 2.3

Selected Characteristics of Veterans' Education Benefit Programs (Service Length, Time Limitations).

| Criteria | G.I. Bill of Rights | Korean G.I. Bill | Vietnam-Era G.I. Bill | Post-Vietnam Era Veterans' Educational Assistance Program (VEAP) | Montgomery G.I. Bill – Active Duty | Montgomery G.I. Bill – Selected Reserves | Post-9/11 G.I. Bill |
|---|---|---|---|---|---|---|---|
| Length of service | Minimum 90 days | Minimum 90 days | More than 180 days active duty service | Minimum of 181 continuous days of active duty services, if entered before 10/16/81; 24 months of continuous active duty service if entered after 10/16/81 | Minimum 181 continuous days of active duty service; 24 months of active duty if enlisted after 9/7/80 | Accepted 6-year reserve obligation after 6/30/85 | Minimum 90 days<br>3 years for 100%-level benefit |
| Time limitation on use of benefits | Initiated by later of end of war or two years after discharge | Initiated by three years and completed by eight years after discharge | Within 8 years of discharge ; 10 years for Vietnam veterans | Within 10 years of discharge or release from active duty | Within 10 years of discharge or release from active duty | Within 14 years of initial eligibility, if eligible on or after 10/1/92 (for those eligible prior benefits to be used w/in 10 years of initial eligibility) | Within 15 years from last discharge or separation |

*Note.* Adapted from Smole and Loane (2008) and Benefit Comparison Chart (U.S. Department of Veterans Affairs, 2011a).

In 1999, Congress introduced four bills to enhance the program: S-1059, S-1076, HR-1071, and HR-1182. S-1059 and S-1056 were both intended to raise the maximum monthly benefit; additionally S-1059 allowed for members to transfer their benefits to their spouses and dependents. HR-1071 proposed covering full tuition and books to servicemembers who had served for four years or more and increase the monthly stipend. HR-1182 would provide an increased stipend, as well as covering up to 90% of tuition, in return for four years of service. The report also indicates that 90% of students who enter the military contribute to the MGIB; however both Senate and House bills would be more costly than the current MGIB program (Asch, Fair, & Kilburn, 2000). In 2000, the RAND Corporation issued an assessment on proposed improvements to the MGIB.

Over time, living expenses and college tuition have increased exponentially. In fact, the standard of living is significantly higher today than in 1960, and the distribution of income has become increasingly unequal; moreover, the cost of college has historically increased faster than the other indicators of inflation (Archibald & Feldman, 2011). Coupled with that is with the fact that the general public's opinion is that colleges are not doing their utmost to control costs (Immerwahr, Johnson, Ott, & Rochkind, 2010). The U.S. Government has put forth other measures that have been put in place to help servicemembers afford the extra expenses, such as Tuition Assistance and the Veterans Education Assistance Program; however the purchasing power of the MGIB has been severely and drastically lowered due to inflation and rising costs of education. The MGIB awarded $1,101 per month; however this amount was increased to $1,321 per month in 2008. This gives servicemembers and veterans an annual stipend of $9,909 per nine month academic calendar (Lay, 2009; Smole & Loane, 2008; U.S. Department of

Veterans Affairs, 2011a). The College Board's 2009 *Trends in College Pricing* report indicates that tuition, fees, and room and board in constant 2009 dollars averages at $26,300 (The College Board, 2009). This amount, while variable depending on what type of institution the student chooses, does not provide students depending solely on MGIB benefits with enough support and may results in students struggling to stay afloat while pursuing their educational goals.

## The Post-9/11 G.I. Bill

In order to address deficiencies in the MGIB, Senators Jim Webb (D-VA), Frank Lautenberg (D-NJ), Chuck Hagel (R-NE), and John Warner (R-VA) came together in a bipartisan effort to introduce the Post-9/11 Veterans Educational Assistance Act of 2008, P.L. 110-252, H.R. 2642, more commonly referred to as the Post-9/11 G.I. Bill, or "Chapter 33". In short, this bill provides more flexibility in education benefits, supplies students with different payment incentives (such as book stipends), and allows for dependents (children and spouses) to also benefit from servicemembers and veterans' sacrifices to their country. Most importantly it affords servicemembers and veterans the chance to continue their education without relying on additional student loans to survive (Rash et al., 2008). Although the Post-9/11 G.I. Bill is more generous than the MGIB, it is still not as generous as the original 1944 G.I. Bill (Radford, 2009).

Students who have served at least 90 total days on active duty after September 10, 2001 and are still on active duty or where honorably discharged from service are eligible for the Post-9/11 G.I. Bill. Students, based on the length of their active duty service, are eligible for tuition and fees (not to exceed the most expensive in-state undergraduate tuition), a monthly housing allowance equal to military E-5 with dependents pay, a yearly

book stipend, and a one-time payment of $500 for students who relocate to highly rural areas. Individuals with service of 90 days are entitled to 40% of the benefit and those who have served for 36 months or more are entitled to 100% of the benefit. Students can receive up to 36 months of benefits and benefits are available for 15 years from the last period of active duty (U.S. Department of Veterans Affairs, 2011a).

### The Effect of Veterans Benefits and the G.I. Bill on Higher Education

Between 1944 and 1994, 1,700 new higher education institutions were founded (Adams, 2000). While not entirely correlated to the G.I. Bill, some of this growth can be attributed to the veteran and dependent populations that entered US colleges and universities. Since 1944, 21.3 million students have used G.I. Bill benefits totaling approximately $72.8 billion dollars in education and training (Veterans Administration, 2007).

Because of the training and discipline through their military service, veterans have traditionally been seen as mature students who are better motivated to be successful in higher education (Frederiksen & Schrader, 1950; Love & Hutchinson, 1946; Preston & Botel, 1952). President James B. Conant, of Harvard University, who was initially opposed to the G.I. Bill, later stated that veterans were some of the best students that Harvard had ever seen (Olson, 1973). Articles and news media began to focus on "Joe College" versus "Joe Veteran" and the advertisers responded – a "sudden proliferation of college references and themes in a wide variety of products illustrates how the G.I. Bill phenomenon acted to change the image of higher education in American culture" (D. A. Clark, 1998, p. 180).

One of the greater effects was the call for regional accreditation associations for institutions of higher education. With the federal government spending more and more money on educating veterans and dependents, a call for accountability was issued (Thelin, 2004). This came from the Korean G.I. Bill: in 1952, the US Office of Education (USOE) created the National Commission on Accrediting. This evolved into the six regional accrediting associations that are in existence today (Proffitt, 1979).

Another impact that the G.I. Bill had on higher education was that married students became a norm at the graduate level. Moreover, graduate students were enlisted to teach undergraduate courses to help cope with the influx of students. Due to the needs of the nation, especially in reaction to the Cold War, veterans tended to continue their education at the graduate level, along with other types of students (Olson, 1973).

The G.I. Bill allowed disadvantaged minorities the ability to have equal access to higher education. This was ahead of its time in 1944 and was one of the precursors to the Civil Rights movement, which, in turn, also had a tremendous impact on America's colleges and universities. Moreover, the Bill allowed minorities to achieve the American dream (Humes, 2006). It was the fact that they had served, not who they were, that provided access for minorities to not only education, but home ownership, creating benefits that were inclusive, rather than exclusive. Humes (2006) indicates that in the South, around 90% of black veterans who attended college persisted and earned their degrees; this, according to the author, is attributed to segregation and a lack of jobs and opportunities.

**Veterans as College Students.** Card (1983) found that retention of Vietnam veterans in higher education was not as high as their civilian counterparts. Burnett and Segoria (2009) indicated that military transition students, those moving from a career in the military to another field, tend to feel most comfortable with each other. They are used to relying on each other and working in teams, and tend to have more self-confidence and maturity than their traditionally college-aged peers (Livingston, Havice, Cawthon, & Fleming, 2011); higher education officials should be cognizant of this. Tinto (1998) indicates that colleges and universities should provide experiences and opportunities for servicemembers, veterans, and their dependents to come together. Providing mentoring programs with mentors who have been in similar situations as the students will enrich the student's experience on campus. Creating communities for students and having venues where students can become involved in, on, and around campus leads to retention and persistence, especially in the first year of college or university (Tinto, 1998).

Pryor, Hurtado, DeAngelo, Blake, and Tran (2009) indicate that the CIRP Freshman Survey included a question about veteran status, of which 595 students responded. For veterans, 11.5% reported high school grades of A or A+, for nonveterans, 23.1% reported that same grade scale. For C+ averages or lower, 19.8% of veterans reported grades at that level, whereas their nonveteran counterparts reported 4.6%. Veterans also rated themselves higher than nonveterans with regard to leadership ability and social self-concept, but lower in academic self-concept. Veterans also indicated that they would become involved in clubs or groups (34.6%) and discuss course content with other students outside of the classroom (37.1%), both of which were lower than nonveterans (45.9% and 46.1%, respectively) (Pryor et al., 2009). This research strongly

conveys that veterans who were average in high school choose the military over college, which may have allowed them time to mature and develop different goals before attempting higher education.

Cook and Kim (2009) found that higher education is meeting the needs of military students in several areas, including acknowledging veterans and servicemembers in strategic plans, offering programs and services for veterans, recognition of military experience as transfer credit, assisting veterans with services, such as counseling and refunds for deployments, and helping veterans access their G.I. Bill benefits. However, they also found that higher education institutions were not adequately assisting veterans with their transition to college life. Administrators and faculty were not adequately trained to understand the transitional needs of veterans and administrative procedures were not streamlined to make the (re-)enrollment processes easy and accessible. Finally, they found that colleges and universities failed to provide enough opportunities for veterans to socialize with each other through student organizations (Cook & Kim, 2009), which can increase retention in college.

**Veterans' Academic Performance.** Love and Hutchinson (1946) found 219 students who were enrolled in college prior to enlisting increased their GPA from 2.15/4.00 to 2.81/4.00 after returning from war. They further found that veterans entering college for the first time performed better than their nonveteran counterparts, with 2.45/4.00 and 2.31/4.00 grade point averages, respectively. Frederiksen and Schrader (1950) examined 10,000 veteran and nonveteran students in 16 colleges, and found that veterans, as students, tended to be academically superior to nonveteran students. Preston and Botel (1952) examined 2,048 college students and their relationship between reading and

college achievement. They found that maturity was a factor in college achievement; veterans, as mature students, tended to have a greater sense of responsibility, were more serious, and eager to make up for lost time. Joanning (1975) found that Vietnam-era veterans also had a higher GPA than their nonveteran counterparts.

Generally, the research has shown that veterans are more successful academically than their nonveteran counterparts; however, little research has been conducted into veterans' academic success since the 1970s.

**Academic Adjustment Issues for Veterans.** Veterans tend do struggle to balance their student identity with their military one and have trouble moving from identity to the other (Bauman, 2009). Veterans also have difficulty readjusting to society and to academics after sustaining physical and mental injuries in war (Stringer, 2007). DiRamio, Ackerman, and Mitchell (2008) found that many veterans were not sufficiently academically prepared for college.

**Psychological Adjustment Difficulties for Veterans.** The physical and mental health of all college students remains a concern on college and university campuses especially following incidents such as the Virginia Tech massacre. Veterans with combat experience or other transitional-related issues are coming to campuses across America (Kay, 2010). Over 30,000 troops have been injured in the Iraqi conflict and are now entering America's institutions of higher education (Iraq Coalition Casulty Count, 2009).

Post-Traumatic Stress Disorder (PTSD), Traumatic Brain Injuries (TBIs), and alcohol abuse have been linked to problems with anger and hostility (Elbogen et al., 2010). Santiago, Wilk, Milliken, Castro, Engel, and Hoge (2010) report that the U.S.

military conducts health screenings for combat servicemembers three to six months after they return from deployment. These health screenings found that 27% of soldiers had alcohol misuse problems. Combat servicemembers and veterans are "at risk for long-term symptoms, including headache, tinnitus, irritability, diminished concentration, or poor memory" (Brauser, 2011, p. 1).

**College Completion Rates for Veterans.** The U.S. has a goal of increasing degree attainment for 25-34 year olds from 41.7% to 55% by 2025 (McPherson & Schulenberger, 2010). This goal, while visionary, is attainable, especially considering the number of military-affiliated G.I. Bill beneficiaries coming to America's colleges and universities.

Bound and Turner's (2002) study on veteran educational attainment found that veterans born after 1923 received six months more postsecondary education than nonveterans. Stanley (2000) found that the Korean G.I. Bill allowed veterans up to 33% more veterans to attain their degrees over their nonveteran counterparts. A study on compulsory military service in Germany examined two cohorts: those born prior to July 1, 1937, and those born after. Findings indicate that there was a 4% positive difference in degree attainment for those who had completed mandatory military service (Bauer, Bender, Paloyo, & Schmitd, 2010).

Unlike the surge of students from the original MGIB in the 1940s, the students coming to campuses are now faced with issues that previous beneficiaries did not.

Veterans who served in combat may experience social and cognitive dissonance as they transition and assimilate to the civilian college environment. Some

> veterans will return from combat with physical or psychological readjustment challenges and will require academic and disability accommodations to successfully reintegrate. (Cook & Kim, 2009, p. 1)

Veterans who have used educational benefits to subsidize their schooling have higher graduation rates (Bound & Turner, 2002; Stanley, 2000) and graduate faster than those who do not (Angrist, 1993).

**Veteran Student Support.** States and institutions play an important role in the execution of the Post-9/11 G.I. Bill. In-state tuition for veterans and servicemembers often has a key function in whether or not a student enrolls in an HEI. Students are often frustrated by the amount of red tape they encounter when trying to register and be admitted and are daunted by the difference between them and their civilian counterparts and face informational, financial, cultural, and injury- and/or trauma-related barriers that traditional students do not necessarily have to go through (McBain, 2008). Institutions should work on relationship building with their military-affiliated population and offer personal, academic, and transitional support services geared directly toward them (Bauman, 2009).

There have additionally been several third party support programs that are in place to assist in the transition from soldier to scholar: the American Council on Education's (ACE) Severely Injured Military Veterans: Fulfilling their Dreams Project, Boots to Books, Combat2College, Operation Education, Hometown Heroes Teach, Service members Opportunity Colleges, the Sonny Montgomery Center for America's Veterans, Supportive Education for the Returning Veteran, and Troops to College

(McBain, 2008). Partnering with organizations such as these, or creating on campus programs that focus on the success of students with military backgrounds, as well as their dependents, will help strengthen and enrich this population during their matriculation, and perhaps beyond college.

Institutions have responded to some degree. The American Council on Education's *From Soldier to Student: Easing the Transition of Service Members on Campus* (Cook & Kim, 2009) and *From Soldier to Student II: Assessing Campus Programs for Veterans and Service Members* (McBain et al., 2012) examined institutions' responses to the influx of veterans and their needs. The first report measured campuses' ability to serve veteran students from the initial passage of the Post-9/11 G.I. Bill and the second measured changes in campus services after revisions to the Bill. The 2012 report found that there was an increase of 5% in services and programs (from 57% to 62%) designed for the military and veteran population. It also found that 71% of the responding institutions had military and veteran programs in their strategic plans. There has also been growth in dedicated offices for military and veteran students on HEI campuses (49% in 2009 to 71% in 2012) (McBain et al., 2012). However, there is still room to grow. If there are 62% of institutions reporting some level of assistance for veterans, there are still 38% of institutions that are not.

## Veteran Retention

Retention of students is directly correlated to involvement. Astin's (1999) involvement theory is defined as both the "quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 528). This becomes more difficult as an adult or non-traditional student, who has lived a different

life than those who went straight to college from high school. Military veterans and servicemembers have had very different experiences than their nonveteran counterparts, particularly those who have experienced war situations. Special attention should be paid to this population. One way would be to offer a student organization, such as a military student club, where students can come together to share their experiences, give to each other, and give back to the communities in which they go to school, work, and live. Students who are involved generally have better experiences in college and there is no reason that former or current military students cannot have the same experiences. However, a 2013 study found that veterans study harder, but are not as active in campus life as their traditional-age counterparts (Kim & Cole, 2013). Military transition students tend to feel most comfortable with each other (Burnett & Segoria, 2009). They are used to relying on each other and working in teams; higher education officials should be cognizant of this and provide experiences and opportunities for servicemembers, veterans, and their dependents to come together. Moreover, providing mentoring programs, with mentors who have been in similar situations as the students will enrich the student's experience on campus. Student-veteran groups allow veterans to come together (Bauman, 2009) and having a dedicated space for veterans is important to them (S. Hadley & Trechter, 2010).

Veterans and servicemembers who have been in war situations, are coming to campus with myriad needs that campus infrastructure and staffing may not be ready to accommodate. University and college officials should be prepared to increase staffing in critical areas such as counseling and disability services to be able to provide accommodation of the needs of this influx of new students. Often, these students work

with a Veterans Services Officer (VSO) as well as the university or college's disability services office. Church (2009) notes that some student veterans do not wish to disclose disabilities because they do not want to be labeled or stigmatized. College and university administrators need to reassure students with disabilities that their needs can be addressed with high levels of confidentiality from staff who are trained to specifically attend to their needs.

DiRamio, Ackerman, and Mitchell (2008) performed a study in which 25 students who had served in the Iraqi and Afghan conflicts were interviewed about their experience transitioning from soldier to scholar. This approach centered on the student-veteran being identified as such so that the efforts of campus administration could focus on providing a holistic approach to helping students in areas such as financial aid, counseling, disabilities, advising, institutional research, and student organizations. Providing orientations to the college or university is one method of identifying this population. Once identified, students can work with a transition coach, who is specially trained to address the diverse needs of servicemembers and veterans alike, who can help them cut through the multiple layers of red-tape that they often face which correlates to attrition (DiRamio et al., 2008).

### Students Using the Post-9/11 G.I. Bill for Postsecondary Education

As the Post-9/11 G.I. Bill goes into its third year, reports are beginning to surface on its use and effect. Steele, Salcedo, and Coley (2010) published a report on student experiences using the Post-9/11 G.I. Bill to pursue postsecondary education. Their findings are grouped into the use of the Post-9/11 G.I. Bill, transferring credits for

military experience, adjusting to campus life, and the changes institutions had to make to adjust to the requirements of this Bill.

In the use of the Post-9/11 G.I. Bill section, Steele et al. (2010) report that students like that benefits are paid directly to the institution – this allows students to pay their tuition and fees in a timely manner. Students also get monthly living allowances. Current servicemembers also appreciate the fact that there is no "pay in" for eligibility for the Post-9/11 G.I. Bill, unlike its pervious iterations where they had to pay $100 per month during their first year of service toward their G.I. Bill ((Poché, 2004) . With regard to being able to use military experience for academic credit, participants reported that 47% were satisfied with the transfer of credits and that the average number of credits transferred was 18. Overall, a majority of respondents reported having trouble adjusting to life on campus. They found that academia is different from regimented military life and veterans reported difficulty balancing academic and other responsibilities. Fellow veterans are reported as being used as a source of support as this older group of students has difficulty identifying themselves with the traditionally-aged campus populations (Steele et al., 2010).

Institutions have also had to adjust because of the Post-9/11 G.I. Bill (Steele et al., 2010). Institutions reported having increases of 35 and 100% in their G.I. Bill enrollments. The new law also has many minute details and an online certification process that campus officials needed to learn. Most importantly, administrators who deal with G.I. Bill benefits had to work closely with finance offices to ensure that students' benefits were applied in a timely manner to their accounts and to manage any payment difficulties. Moreover, administrators had to learn about the benefit options so that they

could explain them to students (Steele et al., 2010). The Veterans' Administration is piloted a program entitled *VetSuccess on Campus* where VA counselors are assigned to help veterans using the Post-9/11 G.I. Bill transition and create more effective channels between students, the VA, and the HEIs (Veterans Today, 2010).

It has been shown that investment in students and HEIs has increased graduation rates and that colleges and universities that have higher levels of investments in student services have higher graduation rates: for each $500 spent per student, the six year graduation rate increases by 0.7%; increasing the amount to $100 per student also has an effect at HEIs with higher Pell Grants dollars per student (Webber & Ehrenberg, 2010). For every 10% increase in state appropriations, the graduation rate increases by 0.64% (Zhang, 2009). It is important not only to institutions, but to the federal government and its entities like the Veterans Administration and Department of Defense, that their federal dollars are contributing to increased retention, persistence and progression of students.

The Veterans Administration has also had to make adjustments due to the passage of the Post-9/11 G.I. Bill legislation. From the original passage of the Post-9/11 G.I. Bill, the VA only had 13 months to implement the program; they lacked the proper information systems, staff, and guidance to properly implement the program (Scott, 2011). While the VA has made strides in claims processing moving the national average of processing claims from 48.8 days in 2009 to 25.7 days, it was still one day behind its target deadline date of 24 days in 2011 (Scott, 2011).

In December, 2010, Congress passed the Post-9/11 Veterans Education Assistance Improvements Act of 2010 (P.L. 111-377), known as the G.I. Bill 2.0, which

went into effect in August and October 2011. Some of the major changes include the offering of benefits to National Guard and Coast Guard Reserve members, as well as personnel at the National Oceanic and Atmospheric Administration and employees of the Public Health Service. Tuition and fee payments have also been simplified. The Post-9/11 G.I. Bill now pays all in-state public school costs, even for graduate degrees and non-degree programs and caps private school tuition at $17,500 with the Yellow Ribbon Program still applying to tuition and fees over the cap (Wilson, 2011). Colleges and universities will now have to report net costs for tuition and fees after deducting tuition and fee waivers, and scholarships and federal, state, institutional or employer-based aid received by the student (Wilson, 2011). Housing rates will be adjusted in August instead of January, which coincides with the beginning of the academic year, and housing will be prorated to training time; vocational rehabilitation participants and distance learners will also be eligible for housing assistance (Wilson, 2011). This legislation also clarifies the rules on interval pay: education benefits cannot be paid during academic year breaks (e.g. winter break) or when school is not in session (Wilson, 2011). Finally, the MGIB and MGIB-SR kickers, which were initially provided as a lump sum payment at the beginning of the term, will now be paid monthly (Wilson, 2011).

The U.S. Government Accountability Office released a report entitled *Veterans' Educational Benefits: Enhanced Guidance and Collaboration Could Improve Administration of the Post-9/11 GI Bill Program.* This report calls for two actions:

- Take steps to provide for schools to receive more critical program information such that as a student's eligibility for benefits or how payments have been calculated, for example, to enable certifying officials,

financial aid officials, and business office administrators to effectively administer the program and deliver benefits.

- Collaborate with the Department of Education and the higher education community, leveraging their experiences in administering aid. These collaborations should include assessing the applicability and viability of adopting processes and actions taken by the Department of Education, where practical, such as returning overpayments of program funds or reconciling benefit payments. (Scott, 2011, p. 4)

The Veterans Administration had the chance to respond to each recommendation. With regard to the first action, the VA concurs in principle. They will be creating a comprehensive and standardized handbook for school officials to address the issue of HEI administrators' ability to effectively administer the program. The VA also concurs in principle with the second action. The VA plans to create more dialogue with the Department of Education and higher education to ensure the applicability of all the Post-9/11 G.I. Bill requirements (Scott, 2011).

## Conclusion

The literature has shown that studies on the success of veterans in college are limited. This chapter provides an in-depth look across several interrelated categories: retention, persistence, and progression; the history of veterans benefits; issues that veterans and military-affiliated students bring to college campuses; as well as strategies and directions HEIs are taking to meet the varied needs of this diverse population.

# CHAPTER 3 METHOD

The purpose of this exploratory study, as stated in Chapter One, was to determine the significant predictors for first to second year student retention for beneficiaries of the Post-9/11 G.I. Bill and progression at selected HEIs in the Hampton Roads area of Virginia. This study also compared the average retention rates of freshmen across the various institution types as well as the general population of students at each institution.

The study addresses the gap in literature that exists regarding the G.I. Bill, in all of its iterations, from its 1944 inception to present day and on the retention of students using the G.I. Bill. The G.I. Bill has had a tremendous impact on colleges and universities in the United States and changed education in many ways (Haydock, 1996; Holcombe, 1999; Juul, 2009; Mettler, 2005a, 2005b; Olson, 1973; Patterson, 1996; Smole & Loane, 2008; Thelin, 2004); however, few studies have examined veterans as college students (LaBarre, 1969; Rumann, 2009; Rumann & Hamrick, 2009).

Research on veterans is limited and generally not attributed to a specific iteration of the G.I. Bill, with the exception of the original legislation. Previous research has focused on veterans' academic performance after World War II (E. L. Clark, 1947; Love & Hutchinson, 1946), academic adjustment issues of veterans in college (Bauman, 2009; DiRamio et al., 2008; L. S. Hadley, 1945; Kinzer, 1946; Stringer, 2007; Zdechlik, 2005), psychological adjustment difficulties for Vietnam veterans (Hendin & Haas, 1991; Horan, 1990b), and veteran student support (Ackerman & DiRamio, 2009). With regard to persistence and progression, college completion rates for veterans have been examined

for Vietnam veterans (Joanning, 1975; MacLean, 2005; Teachman, 2005). However, research exploring the factors driving academic success has been largely ignored.

Another purpose of this study was to uncover new knowledge to add to the literature that will help prepare higher education administrators in assisting increasing numbers of veterans returning to campuses across the United States.

Tinto's (1975, 1993) model has been extensively used throughout the literature and has also been tested in a variety of settings (Morris, 2002; Pascarella, Duby, & Iverson, 1983). Several of the predictors were examined for student retention at various institutions and are further discussed in the Covariate section of this chapter.

To achieve the above-stated purposes, the following research question was developed.

1. What demographic factors, if any, are significant predictors of first to second year student retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region?

This research question generated the following null hypothesis:

$H_0$ = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region.

This question prompts secondary questions for each of the postsecondary institutions being studied.

2. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region?

This research question generated the following null hypothesis:

$H_0$1 = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region.

3. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a two-year public college in the Hampton Roads region?

This research question generated the following null hypothesis:

$H_0$2 = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in a for-profit college in the Hampton Roads region.

4. What demographic factors, if any, are significant predictors of first year student retention of Post-9/11 G.I. Bill beneficiaries in a for-profit college in the Hampton Roads region?

This research question generated the following null hypothesis:

$H_0$3 = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in a two-year public community college in the Hampton Roads region.

A final research question allows for a comparison of populations:

5. What are the demographic factors of retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries?

This research question generated the following null hypothesis:

$H_0$4 = There are no significant demographic factors of freshman retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries.

These questions were based on a stratified sample of the various institution types (public four year university, for-profit four year university, public two year community college); using examples of different types of higher education institutions allows for more thorough benchmarking for similar types of institutions around the country.

Hampton Roads, located in Southeastern Virginia, has a population of 1,401,281 is comprised of seven cities:

- Chesapeake (population 222,209)
- Hampton (population 137,436)
- Newport News (population 180,719)
- Norfolk (population 242,803)
- Portsmouth (population 95,535)
- Suffolk (population 84,585), and
- Virginia Beach (population 437,994) (United States Census Bureau, 2010).

Using Hampton Roads institutions is an effective starting point for research on the effect of the Post-9/11 G.I. Bill as the area has a high military and military-affiliated population; there are over 100,000 active duty servicemembers, over 300,000 family members (Zielinski, 2008) and over 200,000 veterans (Firestone, 2008). In 2010, the VA released

information on the 25 colleges with the most veterans using the Post-9/11 G.I. Bill. Tidewater Community College's Virginia Beach campus was ranked fourth with 879 veterans using the Post-9/11 G.I. Bill; Old Dominion University was ranked eighth with 725, and ECPI College of Technology was ranked 18th with 536 (Stripling, 2010). More recently, all three institutions were recognized in as "Best for Vets" among colleges nationwide by the *Military Times* magazine. Old Dominion was ranked 14/100 in the Top 100 four-year colleges; Tidewater Community College was ranked 3/20 in the two-year category, and ECPI was ranked 2/20 in online and non-traditional schools (Cahn, 2014).

## Research Design

A quantitative *ex post facto* research design was selected for this study. *Ex post facto,* or after the fact, research "is a method of teasing out possible antecedents of events that have happened and cannot, therefore, be controlled, engineered or manipulated by the investigator" (Cooper & Schindler, 2001, p. 136). In other words, *ex post facto* design can be used when the researcher cannot assign participants randomly; the groups already exist (Breakwell et al., 2006; Schenker & Rumrill, 2004; Sukhia et al., 1966). *Ex post facto* research design differs from experimental research because *ex post facto* research does not control variables but generally allows for observation of pre-existing variables under normal conditions to determine a cause and effect (Lord, 1973). The experimental method, on the other hand, manipulates variables to determine the cause of the effect; this can create a potential for unethical or immoral use making *ex post facto* analysis more palatable, when involving persons as research subjects. However, it is important to note that there are considerations when using e*x post facto* data analysis. It is more flexible,

which can lead to showing causality and hypotheses can be based on personal preference of the researcher. This method also does not test the hypothesis and the hypothesis may not be the only one that has a causal relationship on the independent variables.

Even with the issues stated above, *ex post facto* research design is a good alternative with studies in sociology and education over experimental research because it provides additional flexibility when analyzing existing data in these disciplines, and it better fits the actual context in which these studies are often conducted (Lord, 1973; Kerlinger, 1964).

**Rationale for Selection and Appropriateness to the Study**

Data were gathered from the various institutional research offices at each participating institution. Since the data already existed, *ex post facto* analysis is appropriate to the study.

## Study Population

The population for this study will be degree-seeking students registered for classes at the various institutions under study during Fall 2009 and Fall 2010. The sample was comprised of first year students studying at selected universities and colleges in the Hampton Roads area of Virginia. Students were coded as either using the Post-9/11 G.I. Bill benefit or not. Stratified sampling was used as various types of institutions were chosen for this study: a four year public institution, a two year public community college, and a four year for profit institution. It was the attempt of this research that these data will be generalizable to all institutions around the country.

Students from each of the various institutions were placed into cohort groups; i.e. all first year students from one institution will be examined for the Fall 2009 and Fall 2010 academic semesters (Fall 1, Fall 2).

**Rationale for Selection of Criteria**

Since this study examined the effect of the Post-9/11 G.I. Bill on the retention of students it was important to look at students' retention who were (and who were not) using the Post-9/11 G.I. Bill. Studies have also highlighted the fact that the first year in college is critical (Lu, 1994), can be a stressful transition (Tinto, 1987), and freshman class attrition rates can be as high as 20-30% (Mallinckrodt & Sedlacek, 1987). There is also a documented relationship between academic achievement in college and retention; students who perform better academically are retained more than students who struggle academically (Kirby & Sharpe, 2001; McGrath & Braunstein, 1997; Ryland, Riordan, & Brack, 1994).

**Size of Population**

The size of the population was determined by the institutions under study and freshmen using Post-9/11 G.I. Bill dollars. Students were examined from a four-year public university, a public two-year community college, and a four-year for-profit institution.

**Dependent Variable.** The dependent variable that guided this study was retention. Retention has been defined in many ways over the past forty years, but in its most simple sense, it means that students are retained from year-to-year. In this study, a

student who successfully completed all the courses for which he or she registered was considered as being retained. Completion is defined as completing the course with a grade that is not failing or withdrawn over a semester. Each was independently examined to see whether differences exist with the covariates on G.I. Bill beneficiaries and non-G.I. Bill beneficiaries.

**Predictor Variables.** Predictor variables in this study allowed for comparison across categories. Three predictor variables were identified and every attempt was made to control for these in order to ensure threats to validity.

1. Gender – Gender may play a role with regard to retention. Internal validity could be compromised due to outside factors, (e.g. family duties, predisposition toward higher education attainment, etc.) that may affect one gender over the other. External validity could also be compromised. This variable was incorporated into SPSS and the regression model as a dichotomous predictor variable (i.e. 0 = male, 1 = female).
2. Age – Age may play a role with regard to retention. Students were examined by age groups (under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, over 48).
3. Ethnicity – Ethnicity may also play a role with retention. Students were examined by student-reported racial groups to see if there are any statistically significant racial groups that have retention issues within each cohort (African American, Asian, Hispanic, Native Hawaiian or Pacific Islander, Other, Caucasian).

## Data Collection Procedures

Permission to conduct research utilizing existing G.I. Bill data was sought from the Institutional Review Board (IRB) of Old Dominion University (see Appendix A for the official IRB approval); the other HEIs investigated honor Old Dominion University's IRB approval.

Data were gathered from the respective institutional research offices for each of the selected HEIs. These data were then entered into IBM SPSS Statistics 21.0 (SPSS) software, which is a comprehensive system for data analysis.

The data were collected from two academic semesters of use of the Post-9/11 G.I. Bill, which were Fall semester 2009 and Fall semester 2010. In this study, the dependent variable was retention.

**Data Categories.** The following categories were pulled from the data provided by each institution: ethnicity, age, gender, and use of the G.I. Bill. These allowed for comparison of retention across categories (e.g. women aged 23-27 were better retained then men in the same age category).

**Interrater Reliability Procedures for Data Entry/Analysis**. The researcher had a research team; one member of which who entered the data from the respective institutional research offices into SPSS. The researcher also entered the data into a different dataset. Once completely entered, both datasets were compared to ensure accuracy. Data were also spot-checked for agreement by a third person on the research team who did not enter any of the data. Once the statistical analyses were run, an

independent statistical expert were also performed an analysis to ensure that results are consistent.

**Applicability of Data Analysis to Research Questions.** This study attempted to describe demographic and educational characteristics on two subgroups in college (those using the Post-9/11 G.I. Bill to pay for college and those who are not using the benefit) by comparing retention in college during prescribed fall-fall terms. This was done through logistic regression and the predictors of retention found to be statistically significant will help drive the answers to the research questions. This design was selected because since students are either eligible for the Post-9/11 G.I. Bill or they are not eligible, it was not possible to randomly assign subjects and manipulation of the covariates is not possible.

**Validity.** In this design, internal validity was not threatened because the groups were analyzed separately. The groups were, however, analyzed, as a whole to provide an overall picture of the populations. External validity can be threatened for the same reason as groups could not be randomly assigned, *a priori*, to a treatment group. However, this research was not able to manipulate the groups through treatments as the groups already existed. The researcher has made every effort to limit these effects by coding potential confounding variables as predictor variables in the regression model. However, it should be noted that despite efforts to control for both internal and external validity, that students may possess different traits and values that would affect their retention that have not been accounted for based on the available data. For example, some students will be true freshmen, some will have transfer, military, or experiential credit, some may be attending their institution for the first time, and others will have

worked for some amount of time prior to entering college. These different groups can have totally different experiences with respect to retention because of their differing backgrounds. Moreover, the variables are rather specific. Controls over the intervening variables may result in homogenous subjects in the comparison groups, making them too narrowly defined. In order to control for this, an attempt to generalize results to other populations and postsecondary institutions has been made. The outcome should provide other institutions of higher education a baseline on which to understand the effect of the Post-9/11 G.I. Bill on retention in higher education.

**Statement of the Null Hypothesis.** A significance value of 0.05 was used to answer each hypothesis to show whether the Post-9/11 G.I. Bill has an effect on the retention of students using the benefit.

1. $H_0$ = There are no significant demographic predictors of retention for students using the Post-9/11 G.I. Bill.
2. $H_0 1$ = There are no significant demographic predictors of retention for students using the Post-9/11 G.I. Bill in a public university in the Hampton Roads region.
3. $H_0 2$ = There are no significant demographic predictors of retention for students using the Post-9/11 G.I. Bill in a for-profit college in the Hampton Roads region.
4. $H_0 3$ = There are no significant demographic predictors of retention for students using the Post-9/11 G.I. Bill in a two-year public community college in the Hampton Roads region.

5. $H_0$4 = There are no significant demographic factors of freshman retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries

## Data Analysis

The approach used with the data analysis for this dissertation was twofold: a) an analysis of demographic factors that predict retention will be performed followed by b) a logistic regression analysis for the dependent and independent variables and $\chi^2$ tests to evaluate differences in retention rates for the demographic predictors that were found significant. Relationships between a dependent and independent variables are often defined by regression models. The values of the coefficients were used to infer and describe relationships, any effect of the independent variables on the response, and the strength of the association between the dependent and independent variables.

### Logistic Regression

The approach used with the data analysis for this dissertation was binary logistic regression for the dependent and covariates and $\chi^2$ tests to examine the significance of the difference in retention rates between the different demographic groups. Relationships between a dependent variable and the independent variables are often defined by regression models. The values of the coefficients were used to infer and describe relationships, any effect of the independent variables on the response, and the strength of the association between the dependent and independent variables.

A logistic regression model also differs from a linear regression model. For this study, the outcome variable is binary or dichotomous (Hosmer & Lemeshow, 2000)

meaning the outcome is comprised of two possible outcomes (retained or not retained). In the case of this dissertation, risk is essentially the possibility of not being retained. Logistic regression is designed to certify that the estimate of risk is always between 0 and 1 (Kleinbaum & Klein, 2002).

## Analysis Justification

The dependent variable, retention, is both binary, and categorical. In other words, the students are either being retained or they are not. This research was interested in examining the probability of progression and persistence through the use of the Post-9/11 G.I. Bill, gender, race, and ethnicity as the independent variables. Thus, logistic regression was the best analysis for the dependent and independent variables and the results fall into categories that are not amenable to using a numerical analysis.

## Limitations

With any research design there are inherent limitations. With *ex post facto* research, since the variables have already been created, the researcher has no control over and cannot maneuver or randomize variables, which leads to difficulties in inferring causal effects (Cooper & Schindler, 2001). Some of the variables that limit this study included the geographical area, the number of selected institutions studied, and only examining the effect of the Post-9/11 G.I. Bill, if any, on retention of students, as opposed to other types of students. *Ex post facto* design can also have *post hoc* fallacy, which deals with "mistakenly attributing causation based on a relationship between two variables" (Ary, Jacobs, Sorensen, & Razavieh, 2010, p. 333). In order to make an attempt to avoid this fallacy, the researcher attempted to find a statistical relationship

between the dependent and independent variables (does a change in one variable affect a change in another?), ensure a temporal relationship between the variables (did the variables occur in a time sequence, one before the other?), and tried to eliminate confounding variables that might affect the independent variables (did anything else influence or determine the independent variables?) (Ary et al., 2010). Confounding variables included dependents using the Post-9/11 G.I. Bill, military and military-affiliated people who are eligible for the Post-9/11 G.I. Bill but are not using it, those who are not degree-seeking students, and those using other iterations of the G.I. Bill. An attempt to control for these populations was made by only counting those using their Post-9/11 G.I. Bill benefits.

## Summary

Logistic regression was chosen to assess the retention of students during their freshman years at three different institutions in the Hampton Roads area of Southeastern Virginia. The dependent variable, retention, was examined in light of the covariates, to determine whether there was a difference for students' retention who are using the Post-9/11 G.I. Bill in college.

# CHAPTER 4 FINDINGS

Three institutions in the southeastern region of Virginia were examined with regard to the retention of students, with a specific focus upon first year students using the Post-9/11 G.I. Bill benefits. Over two fall semesters (2009 and 2010), a total of 36,664 students were included in the study. Institution One I (I1) had a total of 18,189 students (49.6%), Institution Two (I2) had 17,599 students (48.5%), and Institution Three (I3) had 709 students (1.9%) resulting in the total number students whose records were examined.

## All Institutions

Institutions One, Two, and Three were examined using retention from the first to second year. Significant predictors of retention were G.I. Bill usage, gender, ethnicity, and age. Data from each institution were further examined in two sections: descriptive statistics and a preliminary binary logistic regression. Following the institutional breakdown is a section dedicated to further analysis of each of the significant predictors of retention.

### Frequency and Retention for All Institutions

The records of all three institutions were examined to ascertain first to second year retention data on students. For Fall 2009, there were 19,065 students first year students registered. Regarding ethnicity of the 19,065 enrolled students there were 5,387 (28.3%) African Americans, 708 (3.7%) Asians, 1,019 (5.3%) Hispanics, 113 (0.6%) Native Americans, 161 (0.8%) Native Hawaiian or Pacific Islanders, 1,436 (7.5%) with Other ethnicity, and 10,241 (53.7%) Caucasians. African Americans were retained at a rate of 59.12%, Asians were retained at 66.38%, Hispanics were retained at 46.12%,

Native Americans were retained at 57.52%, Native Hawaiian or Pacific Islanders were retained at 62.11%, those falling into the Other race category were retained at 70.40%, and Caucasians were retained at a 59.91% rate (see Table 4.1).

Table 4.1

*Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African American | 5,387 | 28.3 | 3,185 | 59.12 |
| Asian | 708 | 3.7 | 470 | 66.38 |
| Hispanic | 1,019 | 5.3 | 470 | 46.12 |
| Native American | 113 | 0.6 | 65 | 57.52 |
| Native Hawaiian or Pacific Islander | 161 | 0.8 | 100 | 62.11 |
| Other | 1,436 | 7.5 | 1,011 | 70.40 |
| Caucasian | 10,241 | 53.7 | 5,958 | 58.12 |
| Total | 19,065 | 100 | 11,422 | 59.91 |

Regarding G.I. Bill usage, 17,329 (90.9%) did not use the benefit and 1,736 (9.1%) used some iteration of the G.I. Bill (see Table 4.2). Those who did not use the G.I. Bill were retained at 59.09% while those who did use the G.I. Bill were retained at 68.08%.

Table 4.2

*G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 17,329 | 90.9 | 10,240 | 59.09 |
| Has G.I. Bill | 1,736 | 9.1 | 1,182 | 68.08 |
| Total | 19,065 | 100 | 11,422 | 59.91 |

The study participants included 794 (4.2%) students under the age of 18, 11,221 (58.9%) students aged 18-22, 2,984 (15.7%) students from age 23-27, 1,307 (6.9%) students aged 28-31, 1,127 (5.9%) students aged 32-37, 509 (2.7%) students aged 38-42, 578 (3.0%) students aged 43-47, and 545 (2.9%) students over the age of 48. Students under 18 were retained at 49.62%. Students aged 18-22 were retained at 61.64%. Students aged 23-27 were retained at 58.57%. Students aged 28-31 were retained at 59.14%. Students aged 32-37 were retained at 58.47%. Students aged 38-42 were retained at 56.18%. Students aged 43-47 were retained at 59.17%. Finally, those students over the age of 48 were retained at 55.59% (see Table 4.3).

Table 4.3

*Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 794 | 4.2 | 394 | 49.62 |
| 18 – 22 | 11,221 | 58.9 | 6,917 | 61.64 |
| 23 – 27 | 2,984 | 15.7 | 1,748 | 58.57 |
| 28 – 31 | 1,307 | 6.9 | 773 | 59.14 |
| 32 – 37 | 1,127 | 5.9 | 659 | 58.47 |
| 38 – 42 | 509 | 2.7 | 286 | 56.18 |
| 43 – 47 | 578 | 3.0 | 342 | 59.17 |
| Over 48 | 545 | 2.9 | 303 | 55.59 |
| Total | 19,065 | 100 | 11,422 | 59.91 |

The gender breakdown is 10,534 (55.3%) females and 8,531 (44.7%) males. Regarding retention, females were retained at 60.13% and males were retained at 59.64% (see Table 4.4).

Table 4.4

*I1 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 10,534 | 55.3 | 6,334 | 60.13 |
| Male | 8,531 | 44.7 | 5,088 | 59.64 |
| Total | 19,065 | 100 | 11,422 | 59.91 |

For Fall 2010, 17,559 first year students were registered. Regarding ethnicity there were 5,114 (29.1%) African Americans, 703 (4.0%) Asians, 849 (4.8%) Hispanics, 104 (0.6%) Native Americans, 155 (0.9%) Native Hawaiian or Pacific Islanders, 1,101 (6.3%) with "Other" ethnicity, and 9,573 (54.4) Caucasians. African Americans were retained at 61.17%; Asians were retained at 68.99%; Hispanics were retained at 66.31%; and Native Americans were retained at 58.71%. Those with Other race were retained at 71.03%. Caucasian students were retained at 57.54% (see Table 4.5).

Table 4.5

*I1 - Ethnicity – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African American | 5,115 | 29.1 | 3,129 | 61.17 |
| Asian | 703 | 4.0 | 485 | 68.99 |
| Hispanic | 849 | 4.8 | 563 | 66.31 |
| Native American | 104 | 0.6 | 73 | 70.19 |
| Native Hawaiian or Pacific Islander | 155 | 0.9 | 91 | 58.71 |
| Other | 1,101 | 6.3 | 782 | 71.03 |
| Caucasian | 9,573 | 54.4 | 5,509 | 57.54 |
| Total | 17,599 | 100 | 10,632 | 60.41 |

Regarding G.I. Bill usage, 16,148 (91.8%) did not use the benefit and 1,451 (8.2%) used some iteration of the G.I. Bill. Those who did not use the G.I. Bill were

retained at 59.82% compared to those who did use the G.I. Bill were retained at 66.99% (see Table 4.6).

Table 4.6

*I1 - G.I. Bill – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 16,148 | 91.8 | 9,660 | 59.82 |
| Has G.I. Bill | 1,451 | 8.2 | 972 | 66.99 |
| Total | 17,599 | 100 | 10,632 | 60.41 |

The study participants included 617 (3.5%) students under the age of 18, 10,639 (60.5 %) students aged 18-22, 2,665 (15.1%) students from age 23-27, 1,197 (6.8%) students aged 28-31, 946 (5.4%) students aged 32-37, 448 (2.5%) students aged 38-42, 578 (3.3%) students aged 43-47, and 509 (2.9%) students over the age of 48. Those under 18 were retained at 36.46%. Students aged 18-22 were retained at 63.61%. Students aged 23-27 were retained at 58.01%. Students aged 28-31 were retained at 57.31%. Students aged 32037 were retained at 57.31%. Students aged 38-42 were retained at 61.61%. Students aged 43-47 were retained at 56.57%. Students over 48 were retained at 49.90% (see Table 4.7).

Table 4.7

*I1 - Age – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 617 | 3.5 | 225 | 36.46 |
| 18 – 22 | 10,639 | 60.5 | 6,767 | 63.61 |
| 23 – 27 | 2,665 | 15.1 | 1,546 | 58.01 |
| 28 – 31 | 1,197 | 6.8 | 686 | 57.31 |
| 32 – 37 | 946 | 5.4 | 551 | 58.25 |
| 38 – 42 | 448 | 2.5 | 276 | 61.61 |
| 43 – 47 | 578 | 3.3 | 327 | 56.57 |
| Over 48 | 509 | 2.9 | 254 | 49.90 |
| Total | 17,599 | 100 | 10,632 | 60.41 |

The gender breakdown was 9,589 (54.5%) females to 8,010 (45.5%) male. Females were retained at 60.98% versus males who were retained at 59.74% (see Table 4.8).

Table 4.8

*I1 - Gender – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 9,589 | 54.5 | 5,847 | 60.98 |
| Male | 8,010 | 45.5 | 4,785 | 59.74 |
| Total | 17,599 | 100 | 10,632 | 60.41 |

**Binary Logistic Regression on the Four Predictors of Retention for All Institutions**

**Fall 2009.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2009. Regression results are shown in Table 4.9.

Table 4.9

*Fall 2009 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | 0.03 | 0.03 | 0.86 | 1 | 0.35 | 1.03 | 0.97 | 1.09 |
| Age | -0.01 | -0.00 | 19.74 | 1 | 0.00 | 0.99 | 0.99 | 1.00 |
| G.I. Bill | 0.44 | 0.05 | 64.00 | 1 | 0.00 | 1.55 | 1.39 | 1.73 |
| Ethnicity | -0.01 | 0.01 | 2.91 | 1 | 0.09 | 0.99 | 0.98 | 1.00 |
| Constant | 0.56 | 0.07 | 65.75 | 1 | 0.00 | 1.74 | | |

For gender, the results show that $p = 0.00$, $B = 0.03$, S.E. = 0.35, so there is not enough statistical evidence to suggest that there are gender differences in retention rates with the overall student population. For ethnicity, the results show that $p = 0.09$, $B = -0.01$, S.E. = 0.01, so there is not enough statistical evidence to suggest that ethnicity is a predictor of student retention. However, the results differ for G.I. Bill and Age. For G.I. Bill usage, the results show that $p = 0.00$, $B = 0.44$, S.E. = 0.05, so there is enough statistical evidence that retention rates differ between G.I. Bill beneficiaries and the general population of students. For age, the results show that $p = 0.00$, $B = -0.01$, S.E. = -0.00, so there is enough statistical evidence to suggest that there are differences in retention between at least one age group and the others. An $\chi^2$ analysis is performed in the section entitled Analysis of Significant Predictors of Retention, later in this chapter, for results found to be statistically significant.

**Fall 2010.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2010. Regression results are shown in Table 4.10.

Table 4.10

*Fall 2010 Binary Logistic Regression*

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Gender | 0.08 | 0.03 | 6.51 | 1 | 0.01 | 1.08 | 1.02 | 1.15 |
| Age | -0.01 | 0.00 | 58.43 | 1 | 0.00 | 0.99 | 0.98 | 0.99 |
| G.I. Bill | 0.40 | 0.06 | 46.47 | 1 | 0.00 | 1.50 | 1.33 | 1.68 |
| Ethnicity | -0.03 | 0.01 | 29.65 | 1 | 0.00 | 0.97 | 0.96 | 0.98 |
| Constant | .075 | 0.07 | 110.25 | 1 | 0.00 | 2.13 | | |

For Fall 2010, all categories were found to have statistical significance. For gender, the results show $p = 0.01$, $B = 0.08$, S.E. = 0.03, so there is enough statistical evidence to suggest that gender is a predictor of first year student retention. For age, the results show that $p = 0.00$, $B = -0.01$, S.E. = 0.00, so there is enough statistical evidence to suggest that age is a predictor of student retention. For G.I. Bill usage, the results show that $p = 0.00$, $B = 0.40$, S.E. = 0.06, so there is enough statistical evidence to suggest that the G.I. Bill is a predictor of first year student retention. For ethnicity, the results show that $p = 0.00$, $B = -0.03$, S.E. = 29.65, so there is enough statistical evidence to suggest that ethnicity is a predictor of student retention.

**Summary**

In the following three sections, all institutions are analyzed individually, then by Term (Fall 2009 or Fall 2010) in respect to the categorical variables that were examined in the All Institution analysis, regardless of significance found.

## Institution One

Institution One (I1) is a public university located in a metropolitan area of Southeastern Virginia. It has a student body of approximately 25,000, comprised of almost 19,000 undergraduates and 5,500 graduates. It is a doctoral-granting institution offering 66 bachelor's degrees, 56 master's degrees, two education specialist degrees, and 41 doctoral degrees (National Center for Education Statistics, 2013a). It has a Carnegie classification of Research University (high research activity) (Carnegie Foundation for the Advancement of Teaching, 2013a). For 2012-13, university-reported retention rates for first time students pursuing bachelor's degrees were 80% for full-time students and 62% for part-time students. Graduation rates for students pursuing undergraduate degrees were 23% in four years, 50% in six years, and 56% in eight years (National Center for Education Statistics, 2013a).

### Frequency and Retention for Institution One

Institution One was examined for retention of students. The dependent variable was was retention. Significant predictors of retention were G.I. Bill usage, gender, ethnicity, and age. For Fall 2009, there were 9,059 students first year students registered. Of those students, 2,005 (22.1%) African Americans, 346 (3.8%) Asians, 471 (5.2%) Hispanics, 42 (0.5%) Native Americans, 58 (0.6%) Native Hawaiian or Pacific Islanders, 1,045 (11.5%) with unknown ethnicity, and 5,092 (56.2%) Caucasians (see

Table 4.11). Regarding G.I. Bill usage, 8,179 (90.3%) did not use the benefit and 880 (9.7%) used some iteration of the G.I. Bill (see Table 4.12). There were 85 (0.9%) students under the age of 18, 5,937 (65.6%) students aged 18-22, 1,036 (11.4%) students from age 23-27, 553 (6.1%) students aged 28-31, 433 (4.9%) students aged 32-37, 264 (3.0%) students aged 38-42, 203 (2.2%) students aged 43-47, and 213 (2.3%) students over the age of 48 (see

Table 4.13). The gender breakdown was 4,869 (53.7%) females to 4,190 (46.3%) male (see Table 4.14).

Table 4.11

*I1 - Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 2,005 | 22.1 | 1,622 | 80.9 |
| Asian | 346 | 3.8 | 267 | 77.2 |
| Hispanic | 471 | 5.2 | 362 | 76.9 |
| Native American | 42 | 0.5 | 36 | 85.7 |
| Native Hawaiian or Pacific Islander | 58 | 0.6 | 46 | 79.3 |
| Other | 1,045 | 11.5 | 490 | 74.9 |
| Caucasian | 5,092 | 56.2 | 3,474 | 68.2 |
| Total | 9,059 | 100.0 | 6,594 | 72.8 |

Table 4.12

*I1 - G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 8,179 | 90.3 | 5,976 | 73.1 |
| Has G.I. Bill | 880 | 9.7 | 618 | 70.2 |
| Total | 9,059 | 100.0 | 6,594 | 72.8 |

Table 4.13

*I1 - Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 85 | 0.9 | 66 | 77.6 |
| 18 – 22 | 5,937 | 65.6 | 4,394 | 74.0 |
| 23 – 27 | 1,036 | 11.4 | 955 | 69.7 |
| 28 – 31 | 553 | 6.1 | 394 | 71.2 |
| 32 – 37 | 433 | 4.9 | 315 | 72.7 |
| 38 – 42 | 264 | 3.0 | 178 | 67.4 |
| 43 – 47 | 203 | 2.2 | 138 | 68.0 |
| Over 48 | 213 | 2.3 | 154 | 72.3 |
| Total | 9,059 | 100.0 | 6,594 | 72.8 |

Table 4.14

*I1 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 4,869 | 53.7 | 3,575 | 73.4 |
| Male | 4,190 | 46.3 | 3,019 | 72.1 |
| Total | 9,059 | 100.0 | 6,594 | 72.8 |

For Fall 2010, there were 9,130 students first year students registered. Of those, 2,211 (24.2%) were African Americans, 383 (4.2%) Asians, 505 (5.5%) Hispanics, 46 (0.5%) Native Americans, 47 (0.5%) Native Hawaiian or Pacific Islanders, 952 (10.4%) with "Other" ethnicity, and 4,986 (54.6%) Caucasians (see Table 4.15). Regarding G.I. Bill usage, 8.356 (91.5%) did not use the benefit and 774 (8.5%) used some iteration of the G.I. Bill (see Table 4.16). Eighty five (0.9%) students were under the age of 18, 5,842 (64.0%) students aged 18-22, 1,389 (15.1%) students from age 23-27, 620 (6.7%) students aged 28-31, 464 (5.0%) students aged 32-37, 273 (2.9%) students aged 38-42, 243 (2.6%) students aged 43-47, and 214 (2.2%) students over the age of 48 (see Table

4.17). The gender breakdown was 4,857 (53.2%) females to 4,273 (46.8%) male (see Table 4.18).

Table 4.15

*I1 - Ethnicity – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 2,211 | 24.2 | 1,767 | 79.9 |
| Asian | 383 | 4.2 | 293 | 76.5 |
| Hispanic | 505 | 5.5 | 391 | 77.4 |
| Native American | 46 | 0.5 | 41 | 89.1 |
| Native Hawaiian or Pacific Islander | 47 | 0.5 | 35 | 74.5 |
| Other | 952 | 10.4 | 713 | 73.1 |
| Caucasian | 4,986 | 54.6 | 3,386 | 67.9 |
| Total | 9,130 | 100.0 | 6,626 | 72.6 |

Table 4.16

*I1 - G.I. Bill – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 8,356 | 91.5 | 6,083 | 73.8 |
| Has G.I. Bill | 774 | 8.5 | 543 | 70.2 |
| Total | 9,130 | 100.0 | 6,626 | 72.6 |

Table 4.17

*I1 - Age – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 85 | 0.9 | 70 | 82.3 |
| 18 – 22 | 5,842 | 64.0 | 4,299 | 73.6 |
| 23 – 27 | 1,389 | 15.1 | 1,029 | 74.1 |
| 28 – 31 | 620 | 6.7 | 433 | 70.0 |
| 32 – 37 | 464 | 5.0 | 309 | 66.6 |
| 38 – 42 | 273 | 2.9 | 189 | 69.2 |
| 43 – 47 | 243 | 2.6 | 161 | 66.2 |
| Over 48 | 214 | 2.2 | 136 | 63.6 |
| Total | 9,130 | 100.0 | 6,626 | 72.6 |

Table 4.18

*I1 - Gender – Frequency and Retention – Fall 2010*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 4,857 | 53.2 | 3,519 | 72.5 |
| Male | 4,273 | 46.8 | 3,107 | 72.7 |
| Total | 9,130 | 100.0 | 6,626 | 72.6 |

**Binary Logistic Regression on the Four Predictors of Retention for Institution One Fall 2009.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2009. Regression results are shown in Table 4.19.

Table 4.19

*I1 - Fall 2009 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | 0.05 | 0.05 | 1.22 | 1 | 0.27 | 1.05 | 0.96 | 1.16 |
| Age | -0.01 | 0.00 | 9.05 | 1 | 0.00 | 0.99 | 0.99 | 1.00 |
| G.I. Bill | -0.01 | 0.08 | 0.02 | 1 | 0.90 | 0.99 | 0.85 | 1.16 |
| Ethnicity | -0.11 | 0.01 | 111.93 | 1 | 0.00 | 0.90 | 0.88 | 0.92 |
| Constant | 1.68 | 0.11 | 216.24 | 1 | 0.00 | 5.37 | | |

For gender, the results show that $p = 0.27$, $B = 0.05$, S.E. = 0.05, so there is not enough statistical evidence to suggest that gender has an impact on first year student retention. For G.I. Bill usage, the results show that $p = 0.90$, $B = -0.01$, S.E. = 0.08, so there is not enough statistical evidence to suggest that the G.I. Bill has an impact on first year student retention. However, the results differ for age and ethnicity. For age, the results show that $p = 0.00$, $B = -0.01$, S.E. = 0.00, so there is enough statistical evidence to suggest that gender has an impact on student retention. For ethnicity, the results show that $p = 0.00$, $B = -0.11$, S.E. = 0.01, so there is enough statistical evidence to suggest that gender has an impact on student retention.

**Fall 2010.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2010. Regression results are shown in Table 4.20.

Table 4.20

*I1 - Fall 2010 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | -0.02 | 0.05 | 0.17 | 1 | 0.68 | .98 | .89 | 1.08 |
| Age | -0.02 | 0.00 | 27.78 | 1 | 0.00 | 0.99 | 0.98 | 0.99 |
| G.I. Bill | 0.02 | 0.08 | 0.04 | 1 | 0.84 | 1.02 | 0.86 | 1.20 |
| Ethnicity | -0.10 | 0.01 | 108.46 | 1 | 0.00 | 0.90 | 0.89 | 0.92 |
| Constant | 1.88 | 0.11 | 282.54 | 1.00 | .00 | 6.55 | | |

For gender, the results show that $p = 0.68$, $B = -0.02$, S.E. = 0.05, so there is not enough statistical evidence to suggest that gender has an impact on first year student retention. For G.I. Bill usage, the results show that $p = 0.84$, $B = 0.02$, S.E. = 0.08, , so there is not enough statistical evidence to suggest that the G.I. Bill has an impact on first year student retention. However, the results differ for age and ethnicity. For age, the results show that $p = 0.00$, $B = -0.02$, S.E. = 0.00, so there is enough statistical evidence to suggest that age has an impact on student retention. For ethnicity, the results show that $p = 0.00$, $B = -0.10$, S.E. = 0.01, so there is enough statistical evidence to suggest that ethnicity has an impact on student retention.

**Institution Two**

Institution Two (I2) is a public community college located in a metropolitan area of Southeastern Virginia. It has a student body of approximately 32,100. It is an associate-granting institution offering four associate degrees (Associate in Arts, Associate in Sciences, Associate in Arts and Sciences, Associate of Applied Science) (National Center for Education Statistics, 2013b). It has a Carnegie classification as an

Associate's—Public Suburban-serving Single Campus (Carnegie Foundation for the Advancement of Teaching, 2013b). College-reported retention rates for first time students pursuing associate's degrees are 62% for full-time students and 43% for part-time students (National Center for Education Statistics, 2013b). Graduation rates for students pursuing associate degrees are 5% in two years, 13% in four years, and 18% in six years (National Center for Education Statistics, 2013b).

**Frequency and Retention for Institution Two**

Institution Two was examined for retention of students. Significant predictors of retention were G.I. Bill usage, gender, ethnicity, and age. For Fall 2009, 9,546 students first year students registered. Of those, 3,260 (34.2%) were African Americans, 348 (3.6 %) Asians, 527 (5.5 %) Hispanics, 70 (0.7 %) Native American, 103 (1.1 %) Native Hawaiian or Pacific Islander, 257 (2.7 %) Other, and 4,981 (52.2 %) Caucasians (see Table 4.21). Regarding G.I. Bill usage, 8,835 (92.6 %) did not use the benefit and 711 (7.4 %) used some iteration of the G.I. Bill (see Table 4.22). 1,900 (7.4 %) students were under the age of 18, 5,107 (53.5 %) students aged 18-22, 1,509 (15.8 %) students from age 23-27, 697 (7.3 %) students aged 28-31, 646 (6.8 %) students aged 32-37, 312 (3.3%) students aged 38-42, 257 (2.7%) students aged 43-47, and 315 (3.3 %) students over the age of 48 (see Table 4.23). The gender breakdown was 10,008 (56.3 %) females to 7,758 (43.7 %) male (see Table 4.24).

Table 4.21

*I2 - Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 3260 | 34.2 | 1790 | 54.9 |
| Asian | 348 | 3.6 | 158 | 45.4 |
| Hispanic | 527 | 5.5 | 274 | 52.0 |
| Native American | 70 | 0.7 | 42 | 60.0 |
| Native Hawaiian or Pacific Islander | 103 | 1.1 | 49 | 47.6 |
| Other | 257 | 2.7 | 131 | 51.0 |
| Caucasian | 4981 | 52.2 | 2634 | 52.9 |
| Total | 9546 | 100 | 5078 | 53.2 |

Table 4.22

*I2 - G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 8835 | 92.6 | 4812 | 54.4 |
| Has G.I. Bill | 711 | 7.4 | 445 | 62.6 |
| Total | 9546 | 100 | 5078 | 53.2 |

Table 4.23

*I2 - Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 703 | 7.4 | 378 | 53.8 |
| 18 – 22 | 5107 | 53.5 | 2717 | 53.2 |
| 23 – 27 | 1509 | 15.8 | 802 | 53.1 |
| 28 – 31 | 697 | 7.3 | 362 | 51.9 |
| 32 – 37 | 646 | 6.8 | 341 | 52.8 |
| 38 – 42 | 312 | 3.3 | 152 | 48.7 |
| 43 – 47 | 257 | 2.7 | 147 | 57.2 |
| Over 48 | 315 | 3.3 | 179 | 56.8 |
| Total | 9546 | 100 | 5078 | 53.2 |

Table 4.24

*I2 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 5381 | 56.4 | 2832 | 52.6 |
| Male | 4165 | 43.6 | 2246 | 53.9 |
| Total | 9546 | 100 | 5078 | 53.2 |

For Fall 2010, 8,220 students first year students were registered. Of those, 2,813 (34.2 %) were African Americans, 307 (3.7 %) Asians, 329 (4.0 %) Hispanics, 54 (0.7 %) Native Americans, 108 (1.3 %) Native Hawaiian or Pacific Islanders, 138 (1.7 %) with "Other" ethnicity, and 4,471 (54.4 %) Caucasians (see Table 4.25). Regarding G.I. Bill usage, 7,632 (92.8 %) did not use the benefit and 588 (7.2 %) used some iteration of the G.I. Bill (see Table 4.26). 527 (5.6 %) were students under the age of 18, 4,692 (57.1 %) students aged 18-22, 1,222 (14.9 %) students from age 23-27, 554 (6.7 %) students aged 28-31, 462 (5.6 %) students aged 32-37, 264 (3.2 %) students aged 38-42, 218 (2.7 %) students aged 43-47, and 281 (3.4 %) students over the age of 48 (see Table 4.27). The gender breakdown was 5.381 (56.4 %) females to 4,165 (43.6 %) male (see Table 4.28).

Table 4.25

*I2 - Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 2813 | 34.2 | 1302 | 46.3 |
| Asian | 307 | 3.7 | 179 | 58.3 |
| Hispanic | 329 | 4.0 | 158 | 48.0 |
| Native American | 54 | 0.7 | 29 | 53.1 |
| Native Hawaiian or Pacific Islander | 108 | 1.3 | 56 | 51.9 |
| Other | 138 | 1.7 | 60 | 43.5 |
| Caucasian | 4471 | 54.4 | 2032 | 45.5 |
| Total | 8220 | 100.0 | 3816 | 46.4 |

Table 4.26

*I2 - G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 7632 | 92.8 | 3461 | 45.3 |
| Has G.I. Bill | 588 | 7.2 | 355 | 60.3 |
| Total | 8220 | 100.0 | 3816 | 46.4 |

Table 4.27

*I2 - Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 527 | 5.6 | 151 | 28.7 |
| 18 – 22 | 4692 | 57.1 | 2392 | 51.0 |
| 23 – 27 | 1222 | 14.9 | 474 | 38.8 |
| 28 – 31 | 554 | 6.7 | 237 | 42.8 |
| 32 – 37 | 462 | 5.6 | 225 | 48.7 |
| 38 – 42 | 264 | 3.2 | 132 | 50.0 |
| 43 – 47 | 218 | 2.7 | 98 | 44.9 |
| Over 48 | 281 | 3.4 | 107 | 38.1 |
| Total | 8220 | 100.0 | 3816 | 46.4 |

Table 4.28

*I2 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 4627 | 56.3 | 2247 | 48.6 |
| Male | 3593 | 43.7 | 1569 | 43.7 |
| Total | 8220 | 100.0 | 3816 | 46.4 |

**Binary Logistic Regression on the Four Predictors of Retention for Institution Two Fall 2009.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2009. Regression results are shown in Table 4.29

Table 4.29

*I2 - Fall 2009 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | 0.03 | 0.04 | 0.61 | 1 | 0.43 | 1.03 | 0.95 | 1.12 |
| Age | -0.01 | 0.00 | 7.95 | 1 | 0.00 | 0.99 | 0.99 | 1.00 |
| G.I. Bill | 0.76 | 0.08 | 81.00 | 1 | 0.00 | 2.14 | 1.81 | 2.52 |
| Ethnicity | 0.01 | 0.01 | 1.36 | 1 | 0.24 | 1.01 | 0.99 | 1.02 |
| Constant | -0.10 | 0.10 | 1.22 | 1 | 0.27 | 0.90 | | |

For gender, the results show that $p = 0.43$, $B = 0.03$, S.E. = 0.04, so there is not enough statistical evidence to suggest that gender has an impact on first year student retention. For ethnicity, the results show that $p = 0.24$, $B = 0.01$, S.E. = 0.08, showing that there is no statistical evidence that ethnicity does not have an impact on retention rates. However, the results differ for age and G.I. Bill usage. For age, the results show

that $p = 0.00$, $B = -0.01$, S.E. = 0.00, so there is enough statistical evidence to suggest that age has an impact on student retention. For G.I. Bill usage, the results show that $p = 0.00$, $B = 0.76$, S.E. = 0.08, o there is enough statistical evidence to suggest that the G.I. Bill has an impact on first year student retention.

**Fall 2010.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2010. Regression results are shown in Table 4.30.

Table 4.30

*I2 - Fall 2010 Binary Logistic Regression*

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Gender | 0.25 | 0.05 | 29.34 | 1 | 0.00 | 1.28 | 1.17 | 1.40 |
| Age | -0.01 | 0.00 | 31.20 | 1 | 0.00 | 0.99 | 0.98 | 0.99 |
| G.I. Bill | 0.75 | 0.09 | 69.67 | 1 | 0.00 | 2.12 | 1.78 | 2.53 |
| Ethnicity | -0.01 | 0.01 | 3.13 | 1 | 0.08 | 0.09 | 0.97 | 1.00 |
| Constant | -0.16 | 0.10 | 2.44 | 1 | .012 | 0.85 | | |

For ethnicity, the results show that $p = 0.08$, $B = -0.01$, S.E. = 0.01, so there is not enough statistical evidence to suggest that ethnicity has an impact on first year student retention. However, the results differ for age, G.I. Bill usage and ethnicity. For age, the results show that $p = 0.00$, $B = 0.01$, S.E. = 0.00, so there is enough statistical evidence to suggest that age has an impact on student retention. For G.I. Bill usage, the results show that $p = 0.00$, $B = 0.75$, S.E. = 0.09, so there is enough statistical evidence to suggest that the G.I. Bill has an impact on first year student retention. For age, the results show that *p*

= 0.00, *B* = -0.01, S.E. = 0.01, so there is enough statistical evidence to suggest that age has an impact on student retention.

## Institution Three

Institution Three (I3) is a four year for-profit college located in a metropolitan area of Southeastern Virginia. It has a student body of approximately 10,760. It is a master's granting institution offering 19 associates, 14 bachelors, and 1 master degree. Approximate undergraduate enrollment is 10,700 and graduate enrollment is 20 (National Center for Education Statistics, 2013c). It has a Carnegie classification as an Associate's – Private For-Profit 4-year Primarily Associate's (Carnegie Foundation for the Advancement of Teaching, 2013c). College-reported retention rates for first time students pursuing bachelor's degrees are 64% for full-time students (National Center for Education Statistics, 2013c). Graduation rates for students pursuing associate degrees are 38% in four years, 38% in five years, and 38% in six years (National Center for Education Statistics, 2013c).

### Frequency and Retention for Institution Three

Institution Three was examined for retention of students. Significant predictors of retention were G.I. Bill usage, gender, ethnicity, and age. For Fall 2009, 460 students first year students registered. Of those, 122 (26.5%) were African Americans, 14 (3.0%) Asians, 21 (4.6%) Hispanics, 1 (0.2%) Native American, 134 (29.1%) with Other ethnicity, and 168 (36.5%) Caucasians (see Table 4.31). There were no Native Hawaiian or Pacific Islanders. Regarding G.I. Bill usage, 315 (68.4%) did not use the benefit and 145 (31.6%) used some iteration of the G.I. Bill (see Table 4.32). Six (0.1%) students were under the age of 18, 177 (38.4%) students aged 18-22, 103 (22.3%) students from

age 23-27, 57 (12.4%) students aged 28-31, 48 (10.4%) students aged 32-37, 25 (5.4%) students aged 38-42, 26 (5.6%) students aged 43-47, and 17 (3.6%) students over the age of 48 (see Table 4.33). The gender breakdown was 281 (61%) females to 103 (39%) male (see Table 4.34).

Table 4.31

*I3 - Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 122 | 26.5 | 42 | 34.4 |
| Asian | 14 | 3.0 | 4 | 28.6 |
| Hispanic | 21 | 4.6 | 9 | 42.9 |
| Native American | 1 | 0.2 | 0 | 0.0 |
| Native Hawaiian or Pacific Islander | - | - | - | - |
| Other | 134 | 29.1 | 98 | 73.13 |
| Caucasian | 168 | 36.5 | 61 | 36.3 |
| Total | 460 | 100 | 145 | 31.5 |

Table 4.32

*I3 - G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 315 | 68.5 | 17 | 5.4 |
| Has G.I. Bill | 145 | 31.5 | 128 | 88.2 |
| Total | 460 | 100 | 145 | 31.5 |

Table 4.33

*I3 - Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 6 | 1.3 | 0 | 0.0 |
| 18 – 22 | 177 | 38.5 | 15 | 34.9 |
| 23 – 27 | 103 | 22.6 | 50 | 48.5 |
| 28 – 31 | 57 | 12.4 | 21 | 36.8 |
| 32 – 37 | 48 | 10.4 | 23 | 48.1 |
| 38 – 42 | 25 | 5.4 | 14 | 47.9 |
| 43 – 47 | 26 | 5.7 | 14 | 53.8 |
| Over 48 | 17 | 3.7 | 7 | 41.2 |
| Total | 460 | 100 | 145 | 31.5 |

Table 4.34

*I3 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 281 | 61.1 | 70 | 24.9 |
| Male | 176 | 38.3 | 75 | 42.6 |
| Missing | 3 | 0.7 | 0 | 0.6 |
| Total | 460 | 100 | 145 | 31.5 |

For Fall 2010, 249 students first year students were registered. Of those, 90 (3.6%) were African Americans, 14 (5.6%) Asians, 21 (8.4%) Hispanics, 4 (1.6%) Native Americans, 11 (4.4%) with Other ethnicity, and 116 (46.6%) Caucasians (see Table 4.35). There were no Native Hawaiian or Pacific Islanders. Regarding G.I. Bill usage, 165 (66.2%) did not use the benefit and 89 (35.8%) used some iteration of the G.I. Bill (see Table 4.36). Five (2.0%) students were under the age of 18, 105 (42.2%) students aged 18-22, 54 (21.7%) students from age 23-27, 23 (9.2%) students aged 28-31, 20 (8.0%) students aged 32-37, 20 (8.0%) students aged 38-42, 8 (3.2%) students aged 43-

47, and 14 (5.6%) students over the age of 48 (see Table 4.37). The gender breakdown was 103 (42.7%) females to 138 (57.3%) male (see Table 4.38).

Table 4.35

*I3 - Ethnicity – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| African-American | 90 | 36.1 | 60 | 66.7 |
| Asian | 13 | 5.2 | 13 | 100 |
| Hispanic | 15 | 6.0 | 14 | 93.3 |
| Native American | 3 | 1.2 | 2 | 66.7 |
| Native Hawaiian or Pacific Islander | - | - | | |
| Other | 11 | 4.4 | 9 | 81.1 |
| Caucasian | 116 | 46.6 | 91 | 78.4 |
| Total | 249 | 100 | 190 | 76.3 |

Table 4.36

*I3 - G.I. Bill – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| No G.I. Bill | 160 | 64.3 | 116 | 72.5 |
| Has G.I. Bill | 89 | 35.7 | 74 | 83.1 |
| Total | 249 | 100 | 190 | 76.3 |

Table 4.37

*I3 - Age – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Under 18 | 5 | 2.0 | 4 | 80.0 |
| 18 – 22 | 105 | 42.2 | 76 | 72.4 |
| 23 – 27 | 54 | 21.7 | 43 | 79.6 |
| 28 – 31 | 23 | 9.2 | 16 | 69.6 |
| 32 – 37 | 20 | 8.0 | 17 | 85.0 |
| 38 – 42 | 20 | 8.0 | 16 | 80.0 |
| 43 – 47 | 8 | 3.2 | 7 | 87.5 |
| Over 48 | 14 | 5.6 | 11 | 78.6 |
| Total | 249 | 100 | 190 | 76.3 |

Table 4.38

*I3 - Gender – Frequency and Retention – Fall 2009*

| | Frequency | Percent | Retained | Percent |
|---|---|---|---|---|
| Female | 102 | 41.0 | 77 | 75.4 |
| Male | 139 | 55.8 | 105 | 75.5 |
| Missing | 8 | 3.2 | 8 | 100 |
| Total | 249 | 100 | 190 | 76.3 |

**Binary Logistic Regression on the Four Predictors of Retention**

**Fall 2009.** A binary logistic regression was run on the four significant predictors of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2009. Regression results are shown in Table 4.39.

Table 4.39

*I3 - Fall 2009 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | 0.68 | 0.26 | 6.93 | 1 | 0.01 | 0.51 | 0.31 | 0.84 |
| Age | 0.00 | 0.01 | 0.11 | 1 | 0.74 | 1.00 | 0.98 | 1.03 |
| G.I. Bill | 0.19 | 0.27 | 0.52 | 1 | 0.47 | 1.21 | 0.72 | 2.06 |
| Ethnicity | 0.02 | 0.05 | 0.22 | 1 | 0.64 | 1.02 | 0.93 | 1.12 |
| Constant | 2.13 | 0.63 | 11.53 | 1 | 0.00 | 8.38 | | |

For age, the results show that $p = 0.74$, $B = 0.00$, S.E. = 0.01, so there is not enough statistical evidence to suggest that age is a predictor of student retention. For G.I. Bill usage, the results show that $p = 0.47$, $B = 0.19$, S.E. = 0.27, so there is no statistical evidence that G.I. Bill usage has an impact on retention rates. For ethnicity, the results show that $p = 0.64$, $B = 0.02$, S.E. = 0.05, so there is not enough statistical evidence to suggest that ethnicity has an impact on student retention. However, the results differ for gender. For gender, the results show that $p = 0.01$, $B = 0.68$, S.E. = 0.26, so there is enough statistical evidence to suggest that gender has an impact on first year student retention.

**Fall 2010.** A binary logistic regression was run on the four significant predictors of of retention: gender, age, G.I. Bill usage, and ethnicity to evaluate first year student retention in Fall 2010. Regression results are shown in

Table 4.40.

Table 4.40

*I3 - Fall 2010 Binary Logistic Regression*

| | | | | | | | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | B | S.E. | Wald | df | Sig. | Exp(B) | Lower | Upper |
| Gender | 0.22 | 0.31 | 0.49 | 1 | 0.48 | 1.24 | 0.67 | 2.30 |
| Age | 0.00 | 0.02 | 0.00 | 1 | 0.99 | 1.00 | 0.97 | 1.04 |
| G.I. Bill | 0.65 | 0.37 | 3.09 | 1 | 0.08 | 1.92 | 0.93 | 3.98 |
| Ethnicity | 0.07 | 0.05 | 1.78 | 1 | 0.18 | 1.08 | 0.97 | 1.20 |
| Constant | 0.36 | 0.66 | 0.30 | 1 | 0.59 | 1.43 | | |

For gender, the results show that $p = 0.48$, $B = 0.22$, S.E. = 0.31, so there is not enough statistical evidence to suggest that gender has an impact on first year student retention. For age, the results show that $p = 0.99$, $B = 0.00$, S.E. = 0.02, so there is not enough statistical evidence to suggest that age has an impact on first year student retention. For G.I. Bill usage, the results show that $p = 0.08$, $B = 0.65$, S.E. = 0.37, so there is not enough statistical evidence to suggest that G.I. Bill usage has an impact on student retention. For ethnicity, the results show that $p = 0.18$, $B = 0.07$, S.E. = 0.05, so there is not enough statistical evidence to suggest that ethnicity has an impact on student retention.

## Analysis of Significant Predictors of Retention

Each of the institutions was examined for the following significant predictors of retention: age, ethnicity, gender, and G.I. Bill usage. This section further explores each category. Due to the binary nature of the regression, each of the categories, with the exception of gender which is already binary, were recoded into the following:

- Age:
    - Traditional age (18-22)
    - Non-traditional-age (all other ages)
- Ethnicity:
    - Representative (Caucasian)
    - Non-representative (Non-Caucasian)
- G.I. Bill
    - Using the Post-9/11 G.I. Bill
    - Not using the Post-9/11 G.I. Bill.

**Significant Predictors of Retention for Institution One**

For both Fall 2009 and Fall 2010, age and ethnicity were proven to have an impact on student retention. Pearson Chi-Square ($\chi^2$) tests were run on these predictors to analyze impact. Pearson Chi-Square tests allow for three types of testing: goodness of fit, independence, and the equality of *c* population proportions "to see whether population proportions are equal" (R. E. Kirk, 2008, p. 469).

For Fall 2009, an $\chi^2$ was performed based on the new binary data. It found that age and ethnicity were still significant, while gender and use of the Post-9/11 G.I. Bill were not statistically significant. For age, a Pearson Chi-Square showed a significant relationship between retention and age, $\chi^2$ (1, n= 9,059) = 12.97, $p$ = 0.00. This is congruent with the retention results by each group – the traditional-age group (18-22) had a 74.0% retention rate versus those who were out of the traditional-age (not 18-22) with a retention rate of 70.5%. For ethnicity, there was also a significant relationship, $\chi^2$ (1, n=

9,059) = 122.34, $p$ = 0.00. Caucasians were retained at 68.2% versus non-Caucasians who had a retention rate of 78.7%. For gender, males were better retained at 73.4% versus their female counterparts, who were retained at a 72.1% rate. For use of the Post-9/11 G.I. Bill, there was a 71.2% retention rate versus a retention rate of 72.9% for those not using the Post-9/11 G.I. Bill.

For Fall 2010, an $\chi^2$was performed based on the new binary data. It found that age and ethnicity were still significant, while gender and use of the Post-9/11 G.I. Bill were not statistically significant. For age, a Pearson Chi-Square showed a significant relationship between retention and age, $\chi^2$ (1, n= 9130) = 8.378, $p$ = 0.00. This is congruent with the retention results by each group – the traditional-age group (18-22) had a 73.6% retention rate versus those who were out of the traditional-age (not 18-22) with a retention rate of 70.8%. For ethnicity, there was also a significant relationship, $\chi^2$ (1, n= 9130) = 120.04, $p$ = 0.00. Non-Caucasians were retained at 78.2% versus Caucasians who had a retention rate of 67.9%. For gender, males were better retained at 72.7% versus their female counterparts, who were retained at a 72.5% rate. For use of the Post-9/11 G.I. Bill, there was a 71.5% retention rate versus a retention rate of 72.7% for those not using the Post-9/11 G.I. Bill.

**Significant Predictors of Retention for Institution Two**

For Fall 2009, age and G.I. Bill usage were shown to have an impact on student retention; for Fall 2010, age, G.I. Bill usage, and gender were shown to have an impact on student retention. For Fall 2009, an $\chi^2$ was performed based on the new binary data. It found that use of the Post-9/11 G.I. Bill versus those who do not use the Post-9/11 G.I. Bill was still significant, while age, ethnicity, and gender were not statistically

significant. With regard to use of the Post-9/11 G.I. Bill, a Pearson Chi-Square showed a significant relationship between use of the Post-9/11 G.I. Bill and age, $\chi^2$ (1, n = 9546) = 76.86, $p$ = 0.00. This is congruent with the retention rates of each group – those using the Post-9/11 G.I. Bill had a retention rate of 62.6% versus those not using the Post-9/11 G.I. Bill with a retention rate of 45.5%. For gender, females were retained at 47.4%, which was better than their male counterparts who were retained at a 46.1% rate. For age, those in the 18-22 age group were retained at the same rate of 46.8% like their counterparts who were retained at a 46.8% rate. For ethnicity, Caucasians were retained at a 47.1% rate, which is better than their counterparts who were retained at a 46.5% rate.

For Fall 2010, an $\chi^2$was performed based on the new binary data. It found that gender, age, and use of the Post-9/11 G.I. Bill were statistically significant while ethnicity was not found to be statistically significant. A Pearson Chi-Square showed a significant relationship between gender and retention, $\chi^2$ (1, n = 8220) = 19.48, $p$ = 0.00. For gender, females were retained at a rate of 48.6% versus their male counterparts who were retained at a 43.7% rate. For age, a Pearson Chi-Square showed a significant relationship between age and retention, $\chi^2$ (1, n = 8220) = 91.28, $p$ = 0.00. Students aged 18-22 were retained at a rate of 51.0%, which was better than their counterparts who were retained at a 40.4% rate. For Post-9/11 G.I. Bill usage, a Pearson Chi-Square showed a significant relationship between those using the Post-9/11 G.I. Bill and those who did not use it, $\chi^2$ (1, n = 8220) = 49.56, $p$ = 0.00. Those who did use the Post-9/11 G.I. Bill were retained at a rate of 60.4% versus their counterparts who were retained at a 45.3% rate. Non-Caucasians were retained at a rate of 47.6%, which is better than Caucasians, who were retained at a 45.4% rate.

**Significant Predictors of Retention for Institution Three**

For Fall 2009, gender was proven to have an impact on student retention and none of the significant predictors showed a statistical relationship for Fall 2010. For Fall 2009, an $\chi^2$ was performed based on the new binary data. It found that gender was statistically significant, while age, ethnicity, and use of the Post-9/11 G.I. Bill were not. For gender, a Pearson Chi-Square showed a significant relationship, $\chi^2$ (1, n = 460) = 8.13, $p$ = 0.00. Males were retained at 85.2% while females were retained at 73.9%. Students aged 18-22 were retained at a lower rate of 75.1% compared to their counterparts who were retained at 80.2%. Caucasians were retained at a 81.5% rate compared to Non-Caucasians who were retained at a 76.4% rate. Finally those students using the Post-9/11 G.I. Bill were retained at 85.2% compared to those not using the Post-9/11 G.I. Bill who were retained at 75.6%.

For Fall 2010, an $\chi^2$ was performed based on the new binary data. It found that none of the groups were statistically significant. For gender, 75.7% of males were retained compared to 77.1% females. For age, students aged 18-22 were retained at 72.4% compared to their counterparts who were retained at 79.2%. Caucasians were retained at a higher rate of 78.4% compared to their non-Caucasian counterparts who were retained at 74.4%. Finally, those using the Post-9/11 G.I. Bill were retained at a higher rate of 82.1% compared to those who did not use the Post-9/11 G.I. Bill who were retained at 73.3%.

## Comparison of the Demographic Factors of Retention for the General Population of Students to Post-9/11 G.I. Bill Students

A binary logistic regression was performed to determine the demographic factors of retention of the general population of students compared to students using the Post-9/11 G.I. Bill benefit. This was followed by a $\chi^2$ analysis of all of the demographic factors tested in this study. A breakdown of the general population compared to the population of Post-9/11 G.I. Bill benefit users is provided in Table 4.41. The logistic regression and $\chi^2$ results follow.

Table 4.41

General Population of First Year Students as Compared to the Population of Post-9/11 G.I. Bill Beneficiaries

| | | General Population | Percent of Population | Post-9/11 G.I. Bill Users | Percent of Population |
|---|---|---|---|---|---|
| Gender | Male | 15,069 | 44.4% | 1,472 | 53.7% |
| | Female | 18,853 | 55.6% | 1,270 | 46.3% |
| Age | Under 18 | 1,398 | 4.1% | 13 | 0.5% |
| | 18-22 | 21,001 | 61.9% | 859 | 31.3% |
| | 23-27 | 4,892 | 14.4% | 757 | 27.6% |
| | 28-31 | 2,146 | 6.3% | 358 | 13.1% |
| | 32-37 | 1,786 | 5.3% | 287 | 10.5% |
| | 38-42 | 825 | 2.4% | 132 | 4.8% |
| | 43-47 | 956 | 2.8% | 200 | 7.3% |
| | Over 48 | 918 | 2.7% | 136 | 5.0% |
| Race | African-American | 9,919 | 29.2% | 582 | 21.2% |
| | Asian | 1,262 | 3.7% | 149 | 5.4% |
| | Hispanic | 1,744 | 5.1% | 124 | 4.5% |
| | Native American | 205 | 0.6% | 12 | 0.4% |
| | Native Hawaiian or Pacific Islander | 268 | 0.8% | 48 | 1.8% |
| | Other | 2,377 | 7.0% | 160 | 5.8% |
| | Caucasian | 18147 | 53.5% | 1,667 | 60.8% |
| TOTAL | | 33,922 | 100% | 2,742 | 100% |

For the general population of students, 33,922 records were analyzed. For gender, 15,069 were males (44.4%) and 18,853 were females (55.6%). Race included 9,919 African-Americans (29.2%), 1,262 Asians (3.7%), 1,744 Hispanics (5.1%), 205 Native

Americans (0.6%), 268 Native Hawaiian or Pacific Islanders (0.8%), 2,377 Other Race (7.0%), and 18,147 Caucasians (53.5%). For age, 1,398 (4.1%) were under the age of 18, 21,001 (61.9%) who were 18-22, 4,892 (14.4%) aged 23-27, 2,146 (6.3%) aged 28-31, 1,786 (5.3%) aged 32-37, 825 (2.4%) aged 38-42, 956 (2.8%) aged 42-47, and 918 (2.7%) who were over 48 years old.

A logistic regression was run on the general population of students to determine which demographic factors were statistically significant. For gender, the results show that $p = 0.01$, $B = -0.06$, S.E. = 0.02, so there is enough statistical evidence to suggest that gender has an impact on first year student retention for the general population of students. For age, the results show that $p = 0.00$, $B = -0.30$, S.E. = 0.02, so there is enough statistical evidence to suggest that age has an impact on first year student retention for the general population of students. For race, the results show that $p = 0.00$, $B = 0.22$, S.E. = 0.02, so there is enough statistical evidence to suggest that race has an impact on first year student retention for the general population of students. Regression results are shown in Table 4.42.

Table 4.42

*Logistic Regression Results for the General Population of Students*

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| GENDER | -0.06 | 0.02 | 7.43 | 1 | 0.01 | 0.94 | .90 | 0.98 |
| AGE | -0.30 | 0.02 | 176.45 | 1 | 0.00 | 0.74 | .70 | 0.77 |
| RACE | 0.22 | 0.02 | 100.27 | 1 | 0.00 | 1.25 | 1.20 | 1.31 |
| Constant | 0.51 | 0.05 | 110.03 | 1 | 0.00 | 1.66 | | |

a. Variable(s) entered on step 1: GENDER, AGE, RACE

For users of the Post-9/11 G.I. Bill, 2,742 records were analyzed. For gender, 1,472 males were (53.7%) and 1,270 were females (46.3%). Race included 582 African-Americans (29.2%), 149 Asians (5.4%), 124 Hispanics (4.5%), 12 Native Americans (0.4%), 48 Native Hawaiian or Pacific Islanders (1.8%), 160 Other Race (5.8%), and 1,667 Caucasians (60.8%). For age, 13 (0.5%) were under the age of 18, 859 (31.3%) who were 18-22, 757 (27.6%) aged 23-27, 358 (13.1%) aged 28-31, 287 (10.5%) aged 32-37, 132 (4.8%) aged 38-42, 200 (7.3%) aged 42-47, and 136 (5.0%) who were over 48 years old.

A logistic regression was run on the students using the Post-9/11 G.I. Bill which demographic to determine which factors were statistically significant. For gender, the results show that $p = 0.79$, $B = 0.02$, S.E. = 0.08, so there is not enough statistical evidence to suggest that gender has an impact on first year student retention for users of the Post-9/11 G.I. Bill. For age, the results show that $p = 0.08$, $B = -0.16$, S.E. = 0.09, so there is not enough statistical evidence to suggest that age has an impact on first year student retention for users of the Post-9/11 G.I. Bill. For race, the results show that $p = 0.36$, $B = 0.08$, S.E. = 0.08, so there is not enough statistical evidence to suggest that race

has an impact on first year student retention for users of the Post-9/11 G.I. Bill. Regression results are shown in Table 4.43.

Table 4.43

*Logistic Regression Results for Users of the Post-9/11 G.I. Bill Benefit*

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| GENDER | 0.02 | 0.08 | 0.07 | 1 | 0.79 | 1.02 | 0.87 | 1.20 |
| AGE | -0.16 | 0.09 | 3.11 | 1 | 0.08 | 0.85 | 0.71 | 1.02 |
| RACE | 0.08 | 0.08 | 0.82 | 1 | 0.36 | 1.08 | 0.92 | 1.27 |
| Constant | 0.89 | 0.20 | 19.28 | 1 | 0.00 | 2.44 | | |

a. Variable(s) entered on step 1: GENDER, AGE, RACE.

A $\chi^2$ was performed on the three demographic factors: gender, age, and race for both populations – the general population and the users of the Post-9/11 G.I. Bill benefit for first year students. For gender, $\chi^2$= (1, N= 2742) = 0.39, $p$ = 0.53, so there is no statistically significant association between gender and use of the Post-9/11 G.I. Bill. For age, $\chi^2$= (7, N= 2742) = 5.58, $p$ = 0.58, so there is so there is no statistical significance between age and use of the Post-9/11 G.I. Bill. For race, $\chi^2$= (6, N= 2742) = 12.94, $p$ = 0.44, so there is no statistically significant association between age and use of the Post-9/11 G.I. Bill.

**Conclusion**

Recoding the data into true binary datasets created some differences in the logistic regression. For Institution One, initially for Fall 2009 and Fall 2010, age and ethnicity were found to be significant. For Institution Two, for Fall 2009, age and the use of the Post-9/11 G.I. Bill were initially found to be statistically significant, however after recoding into true binary, only the use of the Post-9/11 G.I. Bill remained statistically significant. For Fall 2010, gender, age, and use of the Post-9/11 G.I. Bill remained significant. For Institution Three for Fall 2009, gender remained statistically significant, and for Fall 2010, nothing again was found to be statistically significant. A Pearson Chi-Square analysis revealed no statistically significance between the gender, age, and race categories and use of the Post-9/11 G.I. Bill.

A comparison of the initial regression compared to the binary analysis is shown in Table 4.44. It is immediately followed by Table 4.45 which provides a visual representation of the retention rates across all three institutions per semester. Finally, Table 4.46 provides a comparison of student retention for first year students in the general population compared to student retention for first year students using the Post-9/11 G.I. Bill benefit.

Table 4.44

*Initial Regression Compared to the Binary Analysis*

| | | Initial Age | Binary Age | Initial Ethnicity | Binary Ethnicity | Initial Gender | Binary Gender | Initial Post-9/11 G.I. | Binary Post-9/11 G.I. |
|---|---|---|---|---|---|---|---|---|---|
| Inst.1 | Fall 2009 | X | X | X | X | | | | |
| | Fall 2010 | X | X | X | | | | | |
| Inst. 2 | Fall 2009 | X | | | | | | X | X |
| | Fall 2010 | X | X | | | X | X | X | X |
| Inst. 3 | Fall 2009 | | | | | X | X | | |
| | Fall 2010 | | | | | | | | |

Table 4.45

*Binary Analysis Retention Rate Comparison*

| | | 18-22 | Not 18-22 | Caucasian | Not Caucasian | Male | Female | Using Post-9/11 G.I. Bill | Not Using Post-9/11 G.I. Bill |
|---|---|---|---|---|---|---|---|---|---|
| Inst.1 | Fall 2009 | 74.0% | 73.6% | 68.2% | 67.9% | 73.4% | 72.7% | 71.2% | 71.5% |
| | Fall 2010 | 70.5% | 70.8% | 78.7% | 78.2% | 72.1% | 72.5% | 72.9% | 72.7% |
| Inst. 2 | Fall 2009 | 46.8% | 51.0% | 47.1% | 46.5% | 46.1% | 47.4% | 62.6% | 60.4% |
| | Fall 2010 | 46.8% | 40.4% | 45.4% | 47.6% | 43.7% | 48.6% | 45.5% | 45.3% |
| Inst. 3 | Fall 2009 | 75.1% | 80.2% | 81.5% | 76.4% | 85.2% | 73.9% | 85.2% | 82.1% |
| | Fall 2010 | 72.4% | 79.2% | 78.4% | 74.4% | 75.7% | 77.1% | 82.1% | 73.3% |

Table 4.46

*Comparison of First Year Student Retention*

| | Post-9/11 G.I. Bill Users | | | General Population of Students | | |
|---|---|---|---|---|---|---|
| | Number of Students | Retained | Retention Rate | Number of Students | Retained | Retention Rate |
| Fall 2009 | 1485 | 1014 | 68.28% | 17580 | 10408 | 59.20% |
| Fall 2010 | 669 | 487 | 72.80% | 16342 | 9790 | 59.90% |

# CHAPTER 5 CONCLUSION

The purpose of this study was to examine the demographic factors that correlate with retention of students who are recipients of the Post-9/11 G.I. Bill compared to the general population of students in the Hampton Roads region of Virginia. Three diverse institutions were examined to determine demographic predictors of retention. These included a four-year public university, a two year public community college, and a four year for-profit university. These institutions were all located in the Hampton Roads area of Southeastern Virginia.

The dependent variable that guided this study was retention. Students in their first year (regardless of prior college, equivalent training) were analyzed with regard to the following demographic factors: gender, ethnicity, and age. These were also compared to students who used or did not use the Post-9/11 G.I. Bill. A binary logistic regression analysis was run for the institutions as a whole as well as for each individual institution for both the Fall 2009 and Fall 2010 semesters. This was followed by an $\chi^2$ analysis to examine the demographic factors that were found to be statistically significant. This chapter provides discussion, implications for theory and practice, and recommendations for future research, and provides a conclusion to the dissertation.

## Research Questions

The following research questions guided this study.

1. What demographic factors, if any, are significant predictors of first to second year student retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region?

This question prompted secondary questions for each of the postsecondary institutions being studied.

2. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region?
3. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a two-year public community college in the Hampton Roads region?
4. What demographic factors, if any, are significant predictors of first to second year student retention of Post-9/11 G.I. Bill beneficiaries in a for-profit college in the Hampton Roads region?

A final research question allowed for a comparison of populations:

5. What are the demographic factors of retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries?

## Discussion of Research Findings

The research questions centered on demographic factors of retention for first year students at three institutions in Southeastern Virginia. The analysis examined the following demographic factors: age, ethnicity, gender, and use of the Post-9/11 G.I. Bill for students at each of the institutions.

Overall, for Fall 2009, there were 18,104,117 undergraduate students enrolled at Title IV institutions across the United States; of those, 2,766,099 (15.3%) were first time students. 1,670,801 (16.6%) were first time students enrolled at four-year public institutions, 160,434 (13.4%) enrolled at private-for-profit institutions, and 812,064

(11.3%) enrolled in two-year public institutions (Knapp, Kelly-Reid, & Ginder, 2011). For Fall 2010, there were 18,650,251 undergraduate students enrolled at Title IV institutions across the United States; of those, 2,723,602 (14.6%) were first time students. 1,838,138 (13.3%) first time students were enrolled at four-year public institutions, 369,384 enrolled at private-for-profit institutions, and 782,540 enrolled in two-year public institutions (Knapp, Kelly-Reid, & Ginder, 2012).

Table 5.1

*Comparison of First Year Students in the U.S., Virginia, and the Study Population*

| | Fall 2009 | Fall 2010 |
|---|---|---|
| United States | 2,766,099 | 2,723,602 |
| Retention Rate | 71.90% | 78.70% |
| Virginia | 60,774 | 63,591 |
| Retention Rate | 74.15% | 74.96% |
| Study Population | 19,065 | 17,559 |
| Retention Rate | 59.91% | 60.41% |
| Institution 1 | 9,059 | 9,130 |
| Retention Rate | 72.80% | 72.60% |
| Institution 2 | 9,546 | 8,220 |
| Retention Rate | 53.20% | 46.40% |
| Institution 3 | 460 | 249 |
| Retention Rate | 31.50% | 76.30% |

*Note:* Data gathered from Knapp et al. (2011, 2012), the State Council of Higher Education for Virginia (2014) and study data.

**Research Question One**

Research Question One asked, "What demographic factors, if any, are significant predictors of first year student retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region?"

For Fall 2009, a total of 19,065 students were analyzed. Of these, 59.91% were retained at their respective institutions. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, only one group had a higher retention rate than the 59.91% average: 18-22, 6,917 (61.64%). With regard to gender, females had the higher retention rate, 6,334 (60.13%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 59.91% average: Asian, 470 (66.38%), Native Hawaiian or Pacific Islander, 100 (62.11%), and Other, 1,011 (70.40%). Students with the Post-9/11 G.I. Bill benefit were better retained, 1,182 (68.08%) versus students without the benefit, 10,240 (59.09%).

For Fall 2010, a total of 17,559 students were analyzed. Of these, 60.41% were retained at their respective institutions. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, two had a higher retention rate than the 59.91% average: 18-22, 6,767 (63.61%) and 38-42, 276 (61.61%). With regard to gender, females had the higher retention rate, 5,847 (60.98%). Ethnicity was broken down into seven categories

(African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 59.91% average: African-American, 3,129 (61.17%), Asian, 485 (66.38%), Hispanic, 563 (66.31), Native Americans, 73 (70.19%), and Other, 782 (71.03%). Students with the Post-9/11 G.I. Bill benefit were better retained, 972 (66.99%) versus students without the benefit, 9,660 (59.82%).

A binary logistic regression to further analyze these percentages yielded the significance at the 0.05 level for Fall 2009: Age and G.I. Bill. For Fall 2010, all categories were found to have statistical significance at the 0.05 level: Gender, Age, G.I. Bill usage, and Ethnicity. The null hypothesis, $H_0$ = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in the Hampton Roads region, was proven to be false.

**Discussion of Research Question One.** For Fall 2009, the retention rate for the three institutions was 59.91%, which is lower than the 66.6% retention rate for the country (Knapp et al., 2012). It is also lower than the 74.15% average for Virginia. For Fall 2010, the retention rate for the three institutions was 60.41%, which is lower than the 71.8% U.S. average (U.S. Department of Education, 2014) and 74.96% for the Commonwealth of Virginia.

Overall, the retention percentage for users of the Post-9/11 G.I. Bill is higher than the general population of students in this study. It is interesting to note that the 18-22 year old population also retained at higher rates. It is possible that Post-9/11 G.I. Bill dependents are pushing this rate higher as opposed to the veterans and servicemembers who are usually outside of the traditional student age range. Females and non-Caucasians

were also retained at a higher rate. Further studies should examine these populations on a more in-depth level to determine whether data can show more detailed information regarding why students were successfully retained. For both Fall 2009 and 2010, age and G.I. Bill usage were found to have statistical significance, and gender and ethnicity was also found to be statistically significant. The congruency of age and G.I. Bill usage may have some correlation when examined to see other factors of retention through further quantitative and qualitative study.

**Research Question Two**

Research Question Two asked, "What demographic factors, if any, are significant predictors of first year student retention of Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region?"

For Fall 2009, a total of 9,059 students were analyzed. Of these, 6,594 (72.8%) were retained at this institution. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, three groups had a higher retention rate than the 72.8% average: Under 18 (77.6%), 18-22 (74.0%), Over 48 (72.3%). With regard to gender, females had the higher retention rate (73.4%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 72.8% average: African-American, 1,622 (80.9%), Asian, 267 (77.2%), Hispanic, 362 (76.9%), Native American, 36 (85.7%), Native Hawaiian or Pacific Islander, 46 (79.3%), and

Other, 490 (74.9%). Students with no Post-9/11 G.I. Bill benefit were better retained, 5,976 (73.1%) compared to 618 (70.2%).

For Fall 2010, a total of 9,130 students were analyzed. Of these, 6,626 (72.6%) were retained at this institution. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, three had a higher retention rate than the 72.6% average: Under 18, 70 (82.3%), 18-22, 4,299 (73.6%), and 23-27, 1,029 (74.1%). With regard to gender, males had the higher retention rate, 3,107 (72.7%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 72.6% average: African-American, 1,767 (79.9%), Asian, 293 (76.5%), Hispanic, 391 (77.4%), Native American, 41 (89.1%), Native Hawaiian or Pacific Islander, 35 (74.5%), and Other, 713 (73.1%). Students without the Post-9/11 G.I. Bill benefit were better retained, 6,083 (73.8%) versus those with the benefit, 543 (70.2%).

A binary logistic regression to further analyze these percentages yielded the significance at the 0.05 level for Fall 2009: Age and Ethnicity. For Fall 2010, the Age and Ethnicity categories were found to have statistical significance at the 0.05 level. The null hypothesis, $H_0 1$ = There are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in a public university in the Hampton Roads region, was proven to be false. Those who were closer to the traditional age of students and non-Caucasians were better retained.

**Discussion of Research Question Two.** For Fall 2009, the retention rate of 72.8% is lower than the U.S. average of 76.0% for four-year colleges and is lower than that same average for the Commonwealth of Virginia, which is at 80.4% (Knapp et al., 2011). For Fall 2010, the retention rate of 72.6% is lower than the U.S. average of 78.4% and the Commonwealth of Virginia average of 85.8% (Knapp et al., 2012).

For Fall 2009, students without the Post-9/11 G.I. Bill benefit were better retained than those with the benefit; for Fall 2010, it was the same. However, the percentages are not that different: 73.1% - 70.2% (no benefit - Post-9/11 G.I. Bill) and 73.8% - 70.2% (Post-9/11 G.I. Bill – no benefit). Both age and ethnicity were found to have statistical significance for both Fall 2009 and Fall 2010. The age ranges that had higher retention rates were for the more traditionally-aged students, and for Fall 2009, for the oldest students. Non-Caucasians had higher retention rates.

**Research Question Three**

Research Question Three asked, "What demographic factors, if any, are significant predictors of first year student retention of Post-9/11 G.I. Bill beneficiaries in a two-year public community college in the Hampton Roads region?"

For Fall 2009, a total of 9,546 students were analyzed. Of these, 5,078 (53.2%) were retained. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, four groups had a higher retention rate than the 53.2% average: Under 18, 378 (53.8%), 18-22, 2,717 (53.2%), 43-47, 147 (57.2%), and Over 48, 179 (56.8%). With regard to gender, males had the higher retention rate, 2,246 (53.9%). Ethnicity was

broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 53.2% average: African-Americans, 1,790 (54.9%), and Native Americans, 42 (60.0%). Students with the Post-9/11 G.I. Bill benefit were better retained, 445 (62.6%) versus students without the benefit, 4,812 (54.4%).

For Fall 2010, a total of 8,220 students were analyzed. Of these, 3,816 (46.4%) were retained. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, three had a higher retention rate than the 46.4% average: 18-22, 2,392 (51.0%), 32-37, 225 (48.7%), and 38-42, 132 (50.0%). With regard to gender, females had the higher retention rate, 2,247 (48.6%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 46.4% average: Asian, 179 (58.3%), Hispanic, 158 (48%), Native American, 29 (53.1%), and Native Hawaiian or Pacific Islanders, 56 (51.9%). Students with the Post-9/11 G.I. Bill benefit were better retained, 355 (60.3%) versus students without the benefit, 3,461 (45.3%).

A binary logistic regression to further analyze these percentages yielded the significance at the 0.05 level for Fall 2009: Age and G.I. Bill. For Fall 2010, three categories were found to have statistical significance at the 0.05 level: Gender, Age, and G.I. Bill. The null hypothesis, $H_0 2$ = There are no significant demographic predictors of

freshman retention for Post-9/11 G.I. Bill beneficiaries in a two-year public community college in the Hampton Roads region, was proven to be false.

**Discussion of Research Question Three.** For Fall 2009, the retention rate of 53.2% is lower than the U.S. average of 51.4% for two-year public colleges and is lower than that same average for the Commonwealth of Virginia, which is at 55.7% (Knapp et al., 2011). For Fall 2010, the retention rate of 46.4 is lower than the U.S average of 53.0 and the Commonwealth of Virginia average of 55.3% (Knapp et al., 2012).

Students using the Post-9/11 G.I. Bill benefit were better retained at this two year public community college at a much stronger percentage (62.6% to 54.4% for Fall 2009 and 60.3% to 45.3% for Fall 2010). This could be attributed to the Post-9/11 G.I. Bill benefit, however further studies need to examine this more. It is important to note that the 60.3% retention rate is higher than the U.S. and Virginia averages for two-year public colleges. This may be due to the high military population in this area or the services provided to users of the Post-9/11 G.I. Bill. Students were better retained in the younger and older age categories.

**Research Question Four**

Research Question Four asked, "What demographic factors, if any, are significant predictors of first year student retention of Post-9/11 G.I. Bill beneficiaries in a for-profit college in the Hampton Roads region?"

For Fall 2009, a total of 460 students were analyzed. Of these, 145 (31.5%) were retained. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, six groups had

a higher retention rate than the 31.5% average: 23-27, 50 (48.5%), 28-31, 21 (36.8%), 32-37, 21 (47.9%), 38-42, 14 (56.0%), 43-47, 14 (53.8%), and Over 48, 7 (41.1%). With regard to gender, males had the higher retention rate, 75 (42.6%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 31.5% average: African-American, 42 (34.4%), Hispanic, 9 (42.9%), and Other, 98 (73.13%). Students with the Post-9/11 G.I. Bill benefit were better retained, 128 (88.2%) than those without the benefit, 17 (5.4%).

For Fall 2010, a total of 249 students were analyzed. Of these, 190 (76.3%) were retained. Examining the four demographic factors yielded the following preliminary findings. With regard to age, students were broken down into eight categories (Under 18, 18-22, 23-27, 28-31, 32-37, 38-42, 43-47, and Over 48). Of these groups, six had a higher retention rate than the 76.3% average: Under 18 (80.0%), 23-27 (79.6%), 32-37 (85.0%), 38-42 (80.0%), 43-47 (87.5%), and Over 48 (78.6%). With regard to gender, males had the higher retention rate (75.5%). Ethnicity was broken down into seven categories (African-American, Asian, Hispanic, Native American, Native Hawaiian or Pacific Islander, Other, and Caucasian). The following groups had retention rates higher than the 76.3% average: Asian, 13 (100%), Hispanic, 14 (93.3%), Other, 9 (81.1), and Caucasian, 91 (78.4%). Students with the Post-9/11 G.I. Bill benefit were better retained, 74 (83.1%) versus students without the benefit, 116 (72.5).

A binary logistic regression to further analyze these percentages yielded the significance at the 0.05 level for Fall 2009: Gender. For Fall 2010, no categories were found to have statistical significance at the 0.05 level. The null hypothesis, $H_0 3$ = There

are no significant demographic predictors of freshman retention for Post-9/11 G.I. Bill beneficiaries in a two-year public community college in the Hampton Roads region, was proven to be false.

**Discussion of Research Question Four.** For Fall 2009, the retention rate of 31.5% is lower than the U.S. average of 50.8% for two-year public colleges and is lower than that same average for the Commonwealth of Virginia, which is at 45.8% (Knapp et al., 2011). For Fall 2010, the retention rate of 76.3 is higher than the U.S. average of 46.8% and the average for Virginia of 42.6% (Knapp et al., 2012).

The fact that students using the Post-9/11 G.I. Bill for Fall 2009 were retained at an 88.2% rate compared to non-users at 5.4% is extremely significant especially considering that the retention rate for Institution Three is dramatically lower than for other institutions. The retention rate for Fall 2010 did level out much more evenly at 83.1% versus 72.5%. It would be important to look further into why there is such a disparity during Fall 2009. Considering this institution is a for-profit with many different terms that start throughout the year, it may be more beneficial to look at the retention rate of this institution on a yearly basis rather than the one semester examined in this study. The logistic regression was also telling: only age was found to be statistically significant for Fall 2009; for Fall 2010, there were no factors found to have statistical significance.

**Research Question Five**

Research Question Five asked, "What are the demographic factors of retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries?" A logistic regression and a Pearson Chi-Square analysis was run to determine whether age, race, and/or gender had any statistical significance for students using the Post-9/11 G.I.

Bill. In all three cases, there was no statistical significance found. The null hypothesis, $H_0$4 = There are no significant demographic factors of freshman retention for the general population of students compared to Post-9/11 G.I. Bill beneficiaries, was proven to be true.

**Discussion of Research Question Five.** Comparing the general population of students to those using Post-9/11 G.I. Bill benefits was a necessary part of this study. While no statistical significance was found in the age, race, and gender categories, it is still necessary to further examine why students are not retained for both the general population and the Post-9/11 G.I. Bill users at different levels. Qualitative inquiry could provide more information on the experiences of students and delve more deeply into why they may have not persisted in their education endeavors. A more quantitative route could also examine other factors outside of the three chosen for this study.

## Implications

The purpose of this study was to examine the retention of users of the Post-9/11 G.I. Bill compared to the general population of students on three factors: age, ethnicity, and race. Retention rates are important, especially at the level of first year or first time students. It has been shown that students are more likely to drop out of higher education during their first year more than any other time (DeAngelo, 2013; Tinto, 1993). If states can implement policies that help to increase retention rates, students will be more likely to graduate. Moreover, student veterans are an at-risk population in the sense that they need attention to not only academic success but to personal well-being (Falkey, 2014). Veteran students often have transition experiences that differ from the traditional student as they are non-traditional students who are coming from rigid military expectations to a

looser college environment (Rumann & Hamrick, 2010). They can choose their academic schedules and are not at school during traditional work hours (Bauman, 2009) and find themselves in a liberal environment as opposed to the more moderate or conservative military mindset (Hamilton & Hargens, 1993). Moreover, veterans tend to not ask for assistance and can view a call for help as a cry for help; they do not see themselves as victims (Lighthall, 2012). Many assume that veterans come to our colleges and university with myriad issues such as Post-Traumatic Stress Disorder or Traumatic Brain Injuries, when in fact only 20% of veterans suffer from these disorders (Vacchi, 2012). It is important to understand the varied needs of veterans and how college campuses can address these needs.

The institutions studied in this dissertation have higher-than-average veteran student populations. Many institutions, including the ones in this study, are still not where they need to be in the service of veteran students (DiRamio & Jarvis, 2011; Gomez, 2014; O'Herrin, 2011; Vacchi, 2012). There is much more that HEIs can do in service of veterans. Some examples of existing services include one-stop shops, veteran knowledgeable staff in different areas of the campus. Today, six years after the passage of the Post-9/11 G.I. Bill, many institutions still do not have a comprehensive understanding across the board for the needs of veteran students (Callahan & Jarrat, 2014; Gomez, 2014).

Veterans, as students, still tend to view themselves as part of a military culture and are able to identify other veterans and distinguish them from the general population of students (Falkey, 2014). They prefer to ask questions of other veterans rather than campus administrators. HEIs should have dedicated resources for the veteran population;

these resources must be proactive instead of reactive. Most of the institutional responses to this second large influx of veteran students have been reactive (G. A. Kirk, 2014; Persky & Oliver, 2010). Moreover, recognition needs to be much broader than a general acknowledgment of veterans because without the proper infrastructure in which to support veterans, they will not have a successful academic and social experience in college (Herrmann, Raybeck, & Wilson, 2008).

Training faculty and staff on veteran student needs is also essential (Burnett & Segoria, 2009; Rumann & Hamrick, 2009). It should not be left to Veteran Certifying Officials to be the sole point of contact for veteran students. Regular training sessions should be held for teaching faculty and administrative personnel so that when the need arises, veterans are properly advised and referred to the appropriate office on campus. One of the more well-known programs is the Green Zone (GZ). GZ is modeled following the Safe Zone program, which provides "safe" contacts and spaces for the LGBT community. In this same sense, veteran-friendly environments are put in place for veterans so that faculty and staff who have been appropriately trained to deal with veterans' issues are available to veterans as needs arise (Nichols-Casebolt, 2012). Additionally, the American Council on Education provides a Toolkit for Veteran Friendly Institutions, which provides HEIs with best practices designed for veterans (American Council on Education, n.d.).

Providing orientation sessions for users of the G.I. Bill is also necessary (American Council on Education, n.d.; Kelley, Smith, & Fox, 2013). In an orientation that is specifically geared toward this population, the veteran students can not only see other veterans, but have access to the faculty and staff who have the knowledge and

experience working with their varied needs. This will also introduce the veterans to the services that are available to them. However, it is important to make these orientation sessions applicable and not seem a waste of time to veterans who may just want to get registered without the extra bells and whistles (Kelley et al., 2013).

## Recommendations for Further Research

It is important for institutions to realize that veterans are here to stay, at least for the foreseeable future. There are still military personnel serving overseas and nationally who are eligible for veterans' educational benefits. They will either use these benefits themselves or transfer them to their dependents.

Now in 2014, it is important to note that many changes have been put in place since the initial implementation of the Post-9/11 G.I. Bill. For one, in 2012, President Obama released Executive Order 13607, "Establishing Principles of Excellence for Educational Institution Serving Service Members, Veterans, Spouses, and Other Family Members". The purpose of this is to create more oversight, enforcement, and accountability for the Department of Veterans Affairs. These principles require HEIs to provide correct and meaningful information about the true cost of attaining a college education on their campus, as well as to prevent abusive and deceptive recruiting practices, while ensuring high-quality education and student support services (Raab, 2012). In addition, in 2013, President Obama introduced the "8 Keys to Veterans' Success", which allows colleges and universities to register their institutions as "military-friendly" with the Department of Education provided they commit to implementing programs that:

1. “Create a culture of trust and connectedness across the campus community to promote well-being and success for veterans.
2. Ensure consistent and sustained support from campus leadership.
3. Implement an early alert system to ensure all veterans receive academic, career, and financial advice before challenges become overwhelming.
4. Coordinate and centralize campus efforts for all veterans, together with the creation of a designated space (even if the space is limited in size).
5. Collaborate with local communities and organizations, including government agencies, to align and coordinate various services for veterans.
6. Utilize a uniform set of data tools to collect and track information on veterans, including demographics, retention and degree completion.
7. Provide comprehensive professional development for faculty and staff on issues and challenges unique to veterans.
8. Develop systems that ensure sustainability of effective practices for veterans. (U.S. Department of Education, 2013, p. 1)

With Executive Order 13607 and the “8 Keys to Veterans’ Success”, it is clear that HEIs can no longer sweep information under the table. With the amount of federal dollars being expended on veteran education, HEIs have been made aware that the government is expecting results and information on students.

Most importantly related to this study from the “8 Keys to Veterans’ Success” is number six, “Utilize a uniform set of data tools to collect and track information on veterans, including demographics, retention and degree completion”. Data were not easy

to attain and the data were not consistent. There need to be informational databases where HEIs and the VA can provide tracking methods to future researchers so that common indicators can be found. Originally, it was the intent of this study to look at several other factors that could influence retention, such as full-time versus part-time attendance, major, state of residence, etc. Because these types of data were not collected at all three institutions, it was necessary to limit this study to the four factors: age, ethnicity, gender, and use of the Post-9/11 G.I. Bill. Currently, the National Student Clearinghouse is the only source of veteran student data in the country; however the data provided are still limited (McCann, 2014). The Student Veterans of America organization released the first phase of the *Million Records Project* in March 2014. The attempt of this project is to provide data on student veterans to help HEIs and policymakers to make data-driven decisions to create more support for veterans pursuing higher education (Student Veterans of America, 2014). Additionally, the State Council of Higher Education for Virginia, in the past few months, has sent a request for HEIs in the Commonwealth of Virginia to submit greater detailed information on student veterans (K. Levingston, personal communication, December 3, 2014). An examination of the cohorts from 2009 and 2010 compared to current cohorts would also be beneficial to see whether retention rates have improved along with improvements with VA processing claims and institutionally-provided resources for veteran students.

Further studies could examine other factors that contribute to retention on both the quantitative and qualitative levels. Studies could examine what factors are affecting students in their late twenties and early thirties with regard to first-year to second-year retention. Non-Caucasians also had higher retention rates. Further studies could examine

why other factors led to the significance of age and ethnicity with regard to retention. Examining retention rates by ethnicity within the users of the Post-9/11 G.I. Bill may also provide an indication of "at risk" populations of these students.

Female veterans are an important, yet overlooked, population (Baechthold, 2009; Burton, 2014). An examination as to the factors of retention that directly correlate with women veterans can significantly add to the literature. Further quantitative and qualitative studies on veteran students are necessary to help educators understand the needs of veterans.

This study only examined students who were enrolled in Fall 2009 and Fall 2010 at three institutions in Southeastern Virginia. While these years are pivotal because they are in the first years of the deployment of the Post-9/11 G.I. Bill, it is important to have more data on first year students around the country and in different years. Longitudinal studies are also important to this population. The literature review revealed a sparseness of information on many of the different iterations of the G.I. Bill as well as on student success of veterans.

Further studies can examine students at different stages in their academic careers. While the first year of college does have a significant impact on student retention, it is also important to examine how students who are retained in the first year persist to graduation. These two cohorts of students are nearing their graduations. It would be beneficial to further this study to see whether those students did in fact graduate. This should also be examined further as the retention rate for the Post-9/11 G.I. Bill users was so different from non-users for Fall 2009. For Institution Three during Fall 2010, there

were no factors found to have statistical significance. This should also be examined further as the retention rate for the Post-9/11 G.I. Bill users was so different from non-users for Fall 2009.

Military and transfer credit was reported in two institutions, so it was not included in the analysis; however performing an analysis on the amount of military and transfer credit is brought in prior to starting at an institution could also have an effect on student retention. Veterans, generally, come into an institution with several military training courses that have been evaluated by the American Council on Education. Many also come in after having attended several institutions prior to attending the one in the study. It would be good to see whether students who have significant amounts of military and/or transfer credit are better retained than those just beginning their education.

As stated earlier, this study limited to Southeastern Virginia. It is the hope that the information presented in this dissertation can be generalized throughout the Commonwealth of Virginia and to the United States as a whole. However, there need to be more studies like this one that perform analyses on student success and retention. A study that examined, for example, a state-to-state, a multi-state, or a U.S.-wide comparison would also be beneficial to the veteran population who are seeking higher education.

## Concluding Remarks

Institutions of higher education are at a turning point with regard to the influx of veteran students. Many have scrambled since the inception of the Post-9/11 G.I. Bill to provide the services needed for veterans coming to campus in larger numbers than in the

last 40 years. Institutions must also understand that veterans come with myriad and different needs than other populations that attend college.

This study examined veteran student retention and compared it to the general population of students on three factors: age, ethnicity, and gender. However, there are many other aspects that can be studied because having a multidimensional approach is necessary to assist veterans and maximize their potential as students. The findings in this study, while limited to certain demographic attributes, are important because they highlight a need to further understand retention and persistence of students using the Post-9/11 G.I. Bill. Students using the Post-9/11 G.I. Bill are students of all ages, ethnicities, and genders. They come with varied and individual needs to institutions of higher education. This study is important because it exemplifies Post-9/11 G.I. Bill usage at its best. While we can still see that the veteran population needs special attention, the Hampton Roads region of SoutheasternVirginia is the best place to do this because of the military and veteran populations that reside in this area. This is a region in the United States where HEIs are more likely to have exposure to students using Post-9/11 G.I. Bill benefits. While this study does not explain why students are not retained but rather examines the fact that students are not being retained quantitatively, it brings to light the fact that more studies need to examine on a more in-depth level what institutions can do to better understand these differing needs of users of the Post-9/11 G.I. Bill.

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# APPENDIX A IRB APPROVAL

No.: 12-176

OLD DOMINION UNIVERSITY
HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD
**RESEARCH PROPOSAL REVIEW NOTIFICATION FORM**

TO: Dennis Gregory
*Responsible Project Investigator*

**DATE: August 23, 2012**
*IRB Decision Date*

Impact of the Post -9/11 GI Bill: an Examination of Retention of Freshmen Studying in the Hampton Roads Area
*Name of Project*

Please be informed that your research protocol has received approval by the Institutional Review Board. Your research protocol is:

__ Approved
___ Tabled/Disapproved
__X_ Approved, (Exempt) contingent on making the changes below*

George C. Maihafer
*IRB Chairperson's Signature*

**August 23rd, 2012**
*date*

Contact the IRB for clarification of the terms of your research, or if you wish to make ANY change to your research protocol.

The approval is as an exempt study and therefore you do not need to submit either Progress Report(s) or a Close-out report. You must report adverse events experienced by subjects to the IRB chair in a timely manner (see university policy).

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* Approval of your research is CONTINGENT upon the satisfactory completion of the following changes and attestation to those changes by the chairperson of the Institutional Review Board. Research may not begin until after this attestation.

***In the Application**

- Clarify the selection of the exemption category as 6.4. Clarify what data will be used by stating this in the comments section of 6.4.

**Attestation**

As directed by the Institutional Review Board, the Responsible Project Investigator made the above changes. Research may begin.

George C. Maihafer
*IRB Chairperson's Signature*

**September 6, 2012**
*date*

# VITA

## Kim Sibson

## PUBLICATIONS

- **Sibson, K.B.**, Gregory, D.E., & Kurisky, B.-P. (2011). Retention issues of mature students: A comparative higher education analysis of programs in the United Sates and Ireland. *Journal of Counselling and Development in Higher Education Southern Africa, 1*(1), 59-76.
- Pazos, P., Handley, H., Daniels, C.B., **Sibson, K.B.**, & Hester, P. (2011). Teaching interactively using web-conferencing: The student perspective. Proceedings of the 32nd Annual National Conference of the American Society of Engineering Management 2011. Lubbock, TX: American Society for Engineering Management.

## INVITED PRESENTATIONS

- Levingston, K., & **Sibson, K.B.** (2013). Ensuring sustained support for military connected students through the creation of an interdisciplinary military alliance. Meeting the Needs of SUNY Veterans Conference, Syracuse, NY, May 23-24, 2013.
- Kurisky, B.-P., & **Sibson, K.B.** (2012). The essentials for a successful GK presidency. Golden Key International Honour Society Regional Summit. Norfolk, VA February 25, 2012.
- Kurisky, B.-P., & **Sibson, K.B.** (2012). Successful fundraising initiatives. Golden Key International Honour Society Regional Summit. Norfolk, VA February 25, 2012.
- **Sibson, K.B.** (2011). Transitioning from the military to student. Old Dominion University Graduate Research Achievement Day, April 6, 2011.

## SELECTED PRESENTATIONS

- Gregory, D.E., **Sibson, K.B.** , Kurisky, B.P.D., & (2014). Increasing international understanding of tertiary education systems. The Seventh World Universities Forum, Lisbon, Portugal, January 9-10, 2014.
- **Sibson, K.B.,** Gregory, D. E., Kurisky, B.P., Doyle, C., Broderick, K.A., & Dickie, E.V. (2013). Retention issues of mature students: A comparative examination of programs in the United States and Ireland. XV Comparative Education World Congress, Buenos Aires, Argentina, June 24-28, 2013.
- **Sibson, K.B.**, Gregory, D.E., Kurisky, B.-P., Gideon, K.A., & Thomas, D.J. (2012). Quality assurance in higher education: A comparative examination of the United States, Hong Kong, and Australia. Proceedings of the 5th World Universities Forum 2012. Rhodes, Greece: Common Ground Publishing.