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Military-Connected Student Academic Success at 4-Year Institutions: A Multi-Institution Study

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Abstract

We examined how the experiences—academic, financial, social, and personal—and relationship factors of military-connected students attending a 4-year institution are associated with their academic success. This multi-institution study highlights the demographic characteristics, experiences, and campus relationships that are associated with military-connected students' GPA.

Disciplines

Curriculum and Social Inquiry | Higher Education | Military and Veterans Studies | Social and Philosophical Foundations of Education

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A tidal wave of military-connected students has struck the shores of campuses across the country with institutions experiencing incredible enrollment growth in that student population (Cate, 2014; Rumann, Rivera, Hernandez, Cox, & Watson, 2011; United States Department of Veterans Affairs, 2011). Molina and Morse (2015) defined military-connected undergraduate students as any student who is active duty personnel, a reservist, veteran or member of the National Guard. In 2012, military educational benefits exceeded $10 billion and served 4% of undergraduate students nationally (Radwin, Wine, Siegel, & Bryan, 2013); 96% of institutions enrolled military service members, veterans or their dependents (Queen & Lewis, 2014). Despite this drastic uptick in students and the expenditures of significant financial resources, there has been scant research assessing the academic outcomes of military-connected students, particularly using quantitative inquiry.

Military-connected students' experiences differ from those of their non-military peers and serving them effectively requires institutions to be cognizant of these differences (Cook & Kim, 2009). Existing studies have illuminated how military-connected students may feel isolated in as well as excluded from their campus communities (Livingston, Havice, Cawthon, & Flemming, 2011; Rumann & Hamrick, 2010), under-valued in the classroom (Author), and frustrated by financial delays (United States Government Accountability Office (USGAO), 2013; Author). Although this research is important, it is also necessary to understand how these experiences may be associated with their academic success. This study examines how military-connected student experiences are associated with one such outcome: college grade point average (GPA).

Purpose of the Study

The purpose of this multi-institution study was to identify the demographic characteristics, experiences, and campus relationships that are associated with military-connected students' GPA. This study was based on the research question: What academic, financial, social, personal and relationship factors were associated with cumulative GPA for military-connected students attending four-year institutions? The experiences of military-connected students have been documented largely through qualitative inquiry (Whiteman, Barry, Mroczek, & MacDermid Wadsworth, 2013) but there have been few published quantitative studies investigating the connection between the experiences of military-connected students and academic success.

Nationally, it is unclear to what extent military-connected students are academically successful (USGAO, 2013) though Cate (2014) determined military-connected students (specifically veterans) complete a degree at approximately the same rate as their non-military-connected peers, roughly 50%. Colleges and universities have developed programs, offices, and policies to serve this emerging population (Queen & Lewis, 2014); however, much of these efforts are based on perceived needs rather than empirical data (Bauman, 2013; DiRamio & Jarvis, 2011).

The findings from this study may provide higher education institutions with strategies to leverage campus resources to best meet the academic needs of military-connected students. The findings also have implications that may be useful to faculty members in the classroom and student and academic affairs staff managing support resources for military-connected students. In addition to institutions acting as effective stewards of tax dollars allocated to serve the country's military personnel, it is imperative that policy-makers understand factors related to academic success. Application of these findings could influence how funds are allocated as well

as how the military prepares veterans and service members to be academically successful within the college environment.

Review of Literature

College campuses have seen an influx in the number of military-connected students with the passing of the Post-9/11Veterans Educational Assistance Act in 2008, commonly referred to as the Post-9/11 G.I. Bill (Bauman, 2013; Cate, 2014; De Sawal, 2013; Rumann et al., 2011). The number of student veteran beneficiaries has increased from approximately 350,000 in 2000 to over 1 million in 2013. Those who served in combat in recent military actions can receive expanded military educational benefits compared to previous generations of veterans (Cook & Kim, 2009). Despite the increase in students and allocated financial resources, there has been little empirical research assessing how institutions can effectively support the academic success of military-connected students (Jones, 2013).

Multiple qualitative studies have examined the experiences of military-connected students (e.g., Bauman, 2009; DiRamio, Ackerman & Mitchell, 2008; Livingston et al., 2011; Rumann & Hamrick, 2010). With sample sizes ranging from 3 to 25 participants at one to three institutions, these studies have illuminated that military-connected students: (a) experience role incongruence between their military identity and the educational community (Bauman, 2009); (b) have both validating and invalidating experiences during college (Bauman, 2013; Rumann & Hamrick, 2010; Schiavone & Gentry, 2014); (c) struggle with insufficient or dated academic preparation (DiRamio et al., 2008); and (d) face adjustment challenges due to acculturation to discipline and respect for hierarchy (cornerstones of military socialization) that influence the use of campus resources (Livingston et al., 2011).

Several qualitative studies have examined the transition experiences of military-connected students entering an institution or re-enrolling following combat. Bauman (2009, 2013) identified a role incongruence returning soldiers felt once re-immersed in a campus environment and how that experience negatively impacted some of their social and academic interactions. DiRamio et al. (2008) revealed that military-connected students returning home from combat struggled with stressors related to changed personal and professional roles, lack of academic preparation, and sufficient financial resources to cover the costs of attending the institution. Rumann and Hamrick (2010) noted that military-connected students had heightened feelings of maturity and academic goal commitment. This study also highlighted the impact of interactions with peers, including those that validated military-connected students in their study (fellow military peers) and those that invalidated military-connected students (civilian students or faculty sharing stereotypes of military experiences with limited knowledge). Schiavone and Gentry (2014) found that the participants perceived they had not only gained maturity and greater sense of the world through their military experiences but also that this maturity left them feeling disconnected from peers whom they perceived as less mature. Participants in Schiavone and Gentry's study also shared symptoms of post-traumatic stress disorder (PTSD), including insomnia, which they also attributed to a change in environment from a rigid military structure to a more fluid institutional structure. These studies focused on military-connected students' transition and collegiate experiences but did not focus specifically on their academic success.

Durdella and Kim (2012) explored pre-entry and college characteristics of student veterans with GPA and sense of belonging outcomes in a comparison of veteran and non-veteran students in a system of highly selective institutions. They concluded that veteran students had lower GPAs and sense of belonging than nonmilitary peers but had higher levels of academic

participation and interaction, collaborative work and academic time management. Durdella and

Kim (2012) found that veterans in their study were more likely to work and less likely to be

involved in extracurricular activities which both contributed to lower GPAs; however, they

offered that the role of family and responsibilities common to non-traditional students could

explain this finding. The current study expands Durdella and Kim's (2012) work by examining a

larger sample of military-connected students at four-year private and public less selective

institutions.

This multi-institution quantitative study seeks to build upon the current research by

examining the association between several of these factors and the academic outcome of GPA.

A significant number of qualitative studies have examined military-connected students'

experiences in college. Other researchers have focused on specific academic, financial, and

personal experiences but gaps in the literature still exist. For instance, little is known about the

influence of peers and faculty interaction on academic outcomes (Vacchi & Berger, 2014). As

more military-connected students arrive on college campuses and more programs are dedicated

to supporting this population, this research can provide insights into how programming, policies,

and resources can best be used to support the academic success of military-connected students.

Theoretical Framework

This study, which was a part of a larger research project examining military-connected

students' transition, was informed by the Student Veteran Academic and Social Transition

Model developed by Livingston et al. (2011) (see Figure 1). Livingston et al. identified four

factors that influence a student's college transition: cornerstones, auxiliary aid, environment,

and navigating re-enrollment. Cornerstones are characteristics that define military-connected

students which include demographic characteristics (gender, age, ethnicity) as well as military

experiences (deployment, service-related injury) in this study. Auxiliary aid included academic

and social support (relationships with peers, faculty, and staff); environment included campus

culture (academic integration, financial and academic experiences). Livingston et al.'s model

examined how these three factors influenced the fourth: navigating re-enrollment. In this study,

GPA was the proxy for navigating re-enrollment as satisfactory GPA is a requirement for re-

enrolling and low GPA may require leaving the institution. Livingston's model informed the

inclusion of variables in the study in terms of which factors to include in the environment

category of this study.

[Insert Figure 1 Here]

Cornerstones

Military-connected students illustrate a microcosm of American society, representing a

diversity of ethnicity, sex and gender, religion, economic background and people with ability

(Head, 2014; Molina & Morse, 2015). Iverson and Anderson (2013) described how

demographic characteristics can affect the experiences of military-connected students in higher

education. Military experience is an additional level of identity military-connected students must

navigate during their transition to college (DiRamio & Jarvis, 2011). Many identity factors

included in this study have been explored in literature related to military-connected students'

transition experiences, including sex and gender (Baechtold & De Sawal, 2009; Demers, 2013;

DiRamio & Jarvis, 2011; DiRamio, Jarvis, Iverson, Seher & Anderson, 2015), first-generation

student status (Durdella & Kim, 2012), and family (having a spouse, partner and/or dependent

children) (Whiteman et al., 2013). Although the role of ethnicity for military-connected students

has not been highly researched, almost 40% of military-connected students identify as non-White

(NCES, 2016) and the National Center for Veterans Analysis and Statistics estimated that the

percentage of veterans identifying as racial and ethnic minorities will rise from 21% to 34% by 2040 (United State Department of Veterans Affairs, 2013).

Beyond social identity characteristics, extant literature has explored the role of deployment (DiRamio et al., 2008; Rumann & Hamrick, 2010) and service-related injury or disability (Kraus & Rattray, 2013; Schiavone & Gentry, 2014). Deployment experiences, or service spent in a combat zone, can impact a student's transition experience in a variety of ways. Bauman (2009) revealed that the "role incongruence" returning soldiers felt once re-immersed in a campus environment negatively impacted their social and academic interactions. The current generation of veterans has experienced a higher rate of disability and injury than past generations of soldiers returning from combat (Kraus & Rattray, 2013). Given military-connected students' demographic diversity and varied military experiences and possible relationships of these backgrounds to academic success, we included these variables within our model.

Auxiliary Aid

Personal experiences in the current study were examined through military-connected students' perceptions of the environment and their experience with sense of belonging in the institutional environment. Rendón's (1994) theory of validation highlighted how institutional agents who act to support a student can validate their experiences, leading to a more positive perception of the environment and higher probability of success. Many military-connected students entering an institution directly following service often view campuses as anti-military and unwelcoming (DiRamio al., 2008).

Although relationships may be social or professional, one's personal connection to members of a community play an important role in student success and persistence success (Pascarella & Terenzini, 2005). According to Pascarella and Terenzini, research has consistently

revealed that contact with faculty members outside of the classroom promotes academic success and persistence. During their initial transition to college, military-connected students returning from combat may experience feelings of isolation, especially if adapting to civilian life at the same time (Bauman, 2009); this lack of connection on campus may negatively affect a student's transition and persistence (Whiteman et al., 2013).

Rumann (2010) concluded that military-connected students perceived their peers were ambivalent toward their military status. Students in this population often reported feeling a disconnection between themselves and their non-military peers who may not have the same level of maturity or realistic operationalization of the operations in the Middle East (DiRamio & Jarvis, 2011; Rumann et al., 2011). Campus connections with fellow military-connected students can provide a conduit to the concepts of team and connectedness woven throughout military training (DiRamio et al., 2008; DiRamio & Jarvis, 2011; Rumann & Hamrick, 2010). Student Veterans of America chapters have grown at college and universities across the country in recent years, providing a formalized organizational structure for veterans to gather (Rumann et al., 2011). An increase in emotional support from peers is related to a smoother academic adjustment and positive mental health (Whiteman et al., 2013) and the current study explored how military-connected students experience with social transition to their institution were associated with GPA.

Environment

This study included private and public four-year, not-for-profit institutions. Approximately one-third of military-connected students are enrolled in one of these types of institutions (NCES, 2016). In this study, private institutions were small, liberal arts institutions; they had fewer students and lower student to faculty ratio than their public institution peers.

These differences can impact the amount and level of support and resources for military-connected students and academic outcomes such as a GPA (Hirt, 2006; Pascarella & Terenzini, 2005; Queen & Lewis, 2014). The environment can also impact the financial and academic experiences of military-connected students.

Financial Experiences. Although many military-connected students have access to military educational benefits, they may experience barriers around the processes required to access the funding as these processes can be highly bureaucratic and often confusing (DiRamio et al., 2008, USGAO, 2013). Institutions must examine the financial considerations and experiences of military-connected students as they may have direct and indirect influences on the students' ability to engage socially or academically in the institution which, consequently, may affect their academic success and persistence (Pascarella & Terenzini, 2005; Renn & Reason, 2013).   The USGAO revealed that problems with the Veteran's Administration (VA) delivery of benefits can create delays and financial challenges that may have a negative impact on a student's academic success. For these reasons, the current study explored the relationship between military-connected students' experiences with securing military educational benefits and managing the financial transition on GPA.

Academic Experiences. Results of research on the academic experiences of military-connected students is mixed. Ackerman, DiRamio, & Mitchell (2009) and DiRamio et al. (2008) found that veterans felt underprepared for the academic rigors of college, whereas De Sawal (2013) asserted that student veterans and service members had stronger study habits and spent an equivalent amount of time studying as their non-military peers. Durdella and Kim (2012) found that student veterans engaged in higher levels of advanced academic behaviors (studying frequently, emailing professors, contributing to class discussions, etc.) but still had lower grade

point averages than non-military peers, even when controlling for entering characteristics. However, Cate (2014) noted that despite their additional academic challenges, military-connected students graduate at similar rates to the overall college student population.

De Sawal (2013) suggested that differences in military organization and academic culture may impact academic success. The classroom environment where faculty members encourage critical thinking and reflection and provide less direction or guidance may create a cultural dissonance for student veterans and service members whose military training required strict adherence to the chain of command and obeying the commanding officer (De Sawal, 2013; Rumann, 2010). The concern should not be that military-connected students are unable to think critically, rather they are emerging from a culture where following orders without question could be a function of survival, and that socialization process will shape their approach to academic work but may not be appreciated by faculty (Rumann, 2010).

The American Council on Education provides evaluations of military occupational training and military education courses and provides recommendations for the transfer of credits (McBain, Kim, Cook & Snead, 2012). Military-connected students transferring military credit may encounter difficulty depending on how institutions interpret and apply credit (Boerner, 2013). McBain et al. (2012) found that 83% of institutions award credit for military training and 63% award credit for occupational experience but the way this credit is applied (elective versus core credits) may lead to barriers for military-connected students. DiRamio et al. (2008) found that the process for the application of credit is confusing and unclear for student veterans. Findings from a study of military-connected students at a large, public Midwestern institution mirrored these results (Author, 2013; Authors, in press). Military-connected students who are not able to receive adequate credit for experiences and courses completed in the military may

perceive their coursework as redundant and may be less motivated to continue (Boerner, 2013).

In the current study, students reported on their academic experiences including academic

preparedness, engagement with faculty and perceptions of classroom workload and the awarding

of credit.

Navigating Re-Enrollment

College GPA was used as an indicator of academic success; a higher GPA indicated a

higher level of academic success. Because college GPA has been highly correlated with

retention and graduation (Bowen Chingos & McPherson, 2009; Gansemer-Topf, Compton,

Wohlgemuth, Forbes, & Ralston, 2015; & Ishitani, 2008); it is a commonly agreed upon metric

to assess academic success (Pascarella & Terenzini, 2005). Throughout the literature, GPA has

been shown to be influenced by demographic and environmental factors (Renn & Reason, 2013)

but little is known about the influences of these factors on GPA for military-connected students.

Given past literature correlating successful students' transition with academic performance (see,

for example, Pascarella & Terenzini, 2005; Renn & Reason, 2013) and the lack of research

related to military-connected students, examining GPA added to the understanding of the

military-connected student experience.

Methods

This quantitative study examined factors associated with the grade point average for

military-connected students. The study was approved by the [institution] Institutional Review

Board (IRB) as well as the IRB entity at each institution.

Sample

The four-year institutions included two public research universities whose military

connected population ranged from 1.3% to 1.8% of the undergraduate population, two masters-level institutions, one public and one private, whose military-connected undergraduate population ranged from 1.7% to 3.2%, and two private baccalaureate colleges with military-connected populations ranging from 1.6% to 5.5% of the undergraduate population. A summary of participant demographics is in Table 1. Institutions were predominately White institutions (PWIs) geographically spread across a state that has seen tremendous growth in military-connected students with the population quadrupling in the last decade (United States Department of Veterans Affairs, 2011). The survey was distributed during the 2014 spring semester to 1,197 military-connected students attending public and private four-year institutions; 310 or 26% responded.

[Insert Table 1 Here]

Data Collection and Instrumentation

Data for this study were collected using the Survey of Veteran and Military Students (SVMS) and disseminated during the first week of February in 2014 using *Qualtrics*, an electronic survey tool. The SVMS was developed and piloted by Author (2013) in a study of the transition experiences, concerns and barriers for military, veteran and military dependent students at one institution. Focus groups and expert review were utilized to assess the validity of the instrument. The SVMS was also reviewed by an expert in military-connected student experiences and tested with the local student veteran organization who participated in a focus group to provide feedback on the instrument and review question efficacy prior to the survey's launch.

SVMS reliability. Cronbach's alpha score is provided in Table 2 as a measure of internal consistency and reliability for each construct. Nunnally (1978) asserted that reliability scores of

0.70 are acceptable in the early stages of survey research, 0.80 is a cut-off for widely used

surveys and 0.90 or 0.95 should be the cut-off for highly applied testing situations. The 0.70

score was used as the cutoff in this study because the survey instrument was still in the early

stages of development and not yet widely used. It is important to note that Cronbach's alpha is a

measure of the internal consistency among survey questions designed to measure the same

construct (Trobia, 2008). The demographic and relationship experiences constructs of the survey

were not measured for internal consistency because they contain items of a demographic nature.

The financial experience construct contained 5 items, the academic integration construct

contained 3 items, the academic credit transfer/awarding construct contained 3 items, and the

personal experiences construct contained 5 items.

> *Variables.* Cumulative GPA (measured as a continuous variable) was the dependent

variable. Cumulative GPA was based on at least one full semester of coursework and was self-

reported; the mean GPA was 3.04 (SD = .86) and the average GPA by demographic

characteristics is included in Table 1. Prior to analysis, a t-test was utilized to compare the GPAs

of first-year military-connected students with military-connected students beyond their first year;

the test yielded no significant difference between the two populations and all military-connected

students were analyzed together. Five categories encompassed the independent variables in the

study: (a) demographic characteristics; (b) financial experiences; (c) academic experiences; (d)

personal experiences; and (e) relationship experiences, a detailed list of which is included in

Table 2.

<div align="center">[Insert Table 2 Here]</div>

Data Analysis

Prior to analysis, data were reviewed for missing data and to test assumptions of each statistical method. In this analysis, missing data were managed using multiple imputations to maintain the statistical power of the data. Imputing data is a common practice in social science research to utilize complete data methods of analysis and in survey research, analysis of data without imputation requires the use of listwise deletion of cases, which could lead to decreased statistical power, pairwise deletion where parameter estimates may be biased in multiple directions and magnitudes (Cox, McIntosh, Reason, & Terenzini, 2014).

Prior to data analysis, we ran power analysis to ensure our sample size was adequate (Cohen, 1988; Soper, 2016). For purposes of our study, we began with a medium effect size, (f2=.15), alpha $p.< .05$; desired power level of .90 and number of possible predictors (n=23). Results indicated that we needed a sample size of at least 202 to achieve a power level of .9. After running the final regression analysis with nine variables, we found the effect size was .24. We subsequently analyzed power using this effect size which again confirmed our sample size was large enough to achieve a power level of .9.

To test for multicollinearity, items within each construct were tested for correlation, those that had a correlation of .70 or higher were removed (Kohler & Kreuter, 2009). Variables PWELCOME (The institution was welcoming for military and veteran students) and PCARED (The institution cared about military and veteran students) were removed from the personal transition construct due to high inter-item correlation ($r = .78$).

Initially, eleven participants were removed prior to analysis who identified as first-semester students without a cumulative GPA. Because influential cases have the capacity to influence the regression results, Cook's D was utilized to estimate the effect of one observation on all regression coefficients simultaneously (Fox, 1991). Thirty cases met the 4/n cutoff for

Cook's D and were removed prior to analysis. The linearity assumption was met, so independent

variables were not transformed (Kohler & Kreuter, 2009). Homoscedasticity assumptions were

met and right skewed variables did not need to be transformed with a logarithmic transformation

(Kohler & Kreuter, 2009).

Descriptive and inferential statistics were used to determine the relationship between

demographic, experiential and relationship factors with GPA. Hierarchical linear regression was

used to analyze academic success with GPA as the continuous dependent variable in the research

questions (Acock, 2012; Johnson & Wichern, 2007). Using Stata, we entered variables based on

the theoretical model.   We then eliminated variables that did not contribute to the model

variance and ran a final regression analysis using this parsimonious model (Johnson & Wichern,

2007). Regression results are based on the parsimonious model.

Limitations

The current study was not without limitations. The survey was distributed by individual

veterans' services coordinators at participating campuses; thus, the method of identifying those

students varied by campus. The majority of institutions identify military-connected students as

those who receive benefits (Queen & Lewis, 2014) but not all military-connected students

receive benefits and those who receive benefits may be dependents of military personnel (NCES,

2016). Therefore, this study may have overlooked the experiences of military-connected

students who are not receiving benefits. The small sample included military-connected students

from different institutions but because it was drawn from institutions in one geographic area the

generalizability of the results to the broader military-connected student population may be

limited. Due to sample size we developed a category of White and non-White but were not able

to differentiate within non-White subpopulations. Additionally, measures of GPA were based on

self-reported data and not institutional reports of GPA. Although past studies have questioned

the validity of using self-reported data for GPA, Kuncel, Credé, and Thomas (2005) fouhigh

consistencies between self-reported and actual GPAs for college students reporting college GPA.

Findings

The results from the hierarchical linear regression produced an overall model that was

significant $F(15, 247) = 6.05$, $p. < .001$. The model accounted for a significant proportion of

variance (25%) in cumulative GPA for military-connected students attending four-year

institutions. Five variables were significantly associated with cumulative GPA. First,

identifying as a student of color was negatively associated with GPA ($\beta = -.20$, $p. < .05$). Second,

attending a private institution was positively associated with GPA ($\beta = .22$, $p. < .01$). Third,

experience determining military educational benefit eligibility was negatively associated with

GPA meaning that the more frustration with determining military educational benefit eligibility,

the higher the GPA ($\beta = -.10$, $p. < .01$). Fourth, experience meeting professors' academic

expectations was positively associated with GPA ($\beta = .16$, $p. < .01$). Finally, feeling

academically prepared to enter the institution was positively associated with GPA ($\beta = .15$, $p.$

$< .01$). A summary of all regression findings is included in Table 3.

[Insert Table 3 Here]

Except for identifying as a student of color, demographic variables had no discernable

relationship to cumulative GPA. All other variables including sex, family status, first-generation

status, disability or injury, deployment experience or number of semesters completed were

insignificantly associated with GPA.

Discussion

Our findings, which differ from past studies (e.g., Bauman, 2009, 2013; DiRamio, et al., 2008; Livingston, et al. 2011; Rumann & Hamrick, 2010; Schiavone & Gentry, 2014) reiterate the need to further investigate various definitions of and methodological approaches to academic success and factors that may be associated with this success. Existing studies on military-connected student transitions highlight the importance of relationships with fellow military-connected students (e.g., DiRamio & Jarvis, 2011; Rumann & Hamrick, 2010; Whiteman et al., 2013) so relationships were taken into consideration when exploring the academic success of this population; however, none of these factors added power to the regression model.   For military-connected students, relationships may be important in helping them feel comfortable and transition into an institution, but may have little impact on academic outcomes.

Researchers have continually found community and peer support, academic credit concerns, and frustrations with accessing and receiving military educational benefits to be barriers to military-connected student transition. However, that these same factors largely failed to be associated with academic success in this study indicate that this population of students is highly resilient to challenges (Duckworth, Peterson, Matthews, & Kelly, 2007). This resiliency may be inherent in individuals likely to join the armed forces or a trait developed through military socialization may supersede other factors in explaining academic success.

Participants' low levels of frustration determining eligibility for benefits were associated with lower GPAs. A potential explanation for this finding is the innately bureaucratic and complex processes involved in determining for which military educational benefits one is eligible (USGAO, 2013). The possibility exists that military-connected students who experience no frustration with this process may not be fully engaged in the academic process, thus translating to lower GPAs. Alternately, some military-connected students may have had family

members or other military personnel handle their benefits, thus minimizing frustration, but also

suggesting a lack of engagement and lower GPA. This result is surprising and should be

explored in future research.

Feeling academically prepared to enter the institution was associated with academic

success and experiences meeting professors' academic expectations was significantly and

negatively associated with cumulative GPA. These factors are all tangent to the concept of

academic self-efficacy or the personal judgment of an individual's capacity to complete a course

of action to reach a desired outcome (Bandura, 1997). Zajacova, Lynch, and Espenshade (2005)

concluded that academic self-efficacy is an important factor in ameliorating non-academic

stressors, indicating gains in academic self-efficacy may yield to gains in other non-academic

areas explored in this study. Results of this study merit further examination of the concepts of

resiliencey and academic self-efficacy in military-connected student research.

Attending a private institution was a significant predictor of cumulative GPA. This

finding may be a gateway to exploring how private institutions are uniquely supporting student

success. The private institutions in this study were smaller institutions than the public

institutions. Smaller environments and lower faculty to student ratios contribute to retention

(Pascarella & Terenzini, 2005) and may offer more opportunities for resource utilization and

faculty or administrative support. Military-connected students are likely to be older than other

students (NCES, 2016) and private institutions in this study may also have more supports in

place for serving non-traditionally aged students (Queen & Lewis, 2014). Past studies have

focused on students and how their experiences and characteristics impact their success largely

ignoring the institutional context and environment. Focusing on institutional type and

environments (Astin, 1984; Strange & Banning, 2015) can further our understanding of the

factors related to student success.

Identifying as non-White was associated with lower GPA. This finding is not surprising.

Research has consistently documented how PWI campus environments can be racist and hostile

toward students of color (see, for example, Locks, Hurtado, Bowman, & Oseguera, 2008; Quaye

& Harper, 2014). Consequently; this climate can negatively impact students' academic success

(Harper & Hurtado, 2007; Renn & Reason, 2013). Nearly one half of active duty individuals and

reservists identify as people of color (Molina & Morse, 2015) and the National Center for

Veterans Analysis and Statistics anticipates that in the next two decades, the percentage of

veterans of color will increase from 21% to 34% (United States Department of Veterans Affairs,

2011). These increases are likely to influence the number of military-connected students of color

enrolling in college and results from the study suggest that additional attention be paid to the

experiences of students who hold racial and ethnic identities that differ from the predominately

White populations at these institutions. This study examined demographic characteristics such

as gender and ethnicity but did not consider the intersectionality of these identities (Vacchi &

Berger, 2014). Military-connected students experiences and backgrounds are not monolithic

(NCES, 2016; Vaccaro, 2015), therefore, a closer examination of the subpopulations of military-

connected students is needed (Molina & Marsh, 2015 Vacchi & Berger, 2014).

This study demonstrates the importance of clarifying terminology and utilizing a variety

of methodological approaches to understanding this population. This study focused on GPA but

did not include other academic outcomes such as retention and graduation. Longitudinal studies

can provide a more comprehensive picture of the relationship between demographic, financial

and personal experiences and academic success; similarly, little is known about the outcome of

military-connected students after graduation (Vacchi & Berger, 2014).

Implications for Student Affairs Practice and Policy

The exploration of GPA offers recommendations for four-year institution administrators.

The results identified an association between feeling academically prepared and meeting

professor's expectations and GPA. Although categorized as academic factors, student affairs

professionals can play a pivotal role in enhancing development and student learning in these

areas. Developing programs such as tutoring or learning communities or having academic

advisors familiar with military-connected student experiences can promote academic success for

this population. Staff familiar with the needs of military-connected students can better assist

them in successfully transitioning to the institution (Queen & Lewis, 2014). These programs

would provide key opportunities to collaborate with academic affairs – an important practice for

ensuring student success (Schuh & Gansemer-Topf, 2010).

At a broader level, higher education leaders should plan to work with military leaders and

policy makers to inform veterans leaving the service and enrolling in higher education and what

to expect in college prior to enrolling. This partnership could include ways to convey to veterans

a preview of academic expectations and strategies for meeting those expectations. Orientation

programs for military-connected students can provide additional information on academic

expectations.

Institutions should strive to become "veteran-friendly" – a campus where obstacles for

military-connected students are identified and removed (Vacchi, 2012). "Veteran-friendly"

campuses must also acknowledge the varied experiences of military-connected students, paying

specific attention to supporting military-connected students of color and the impact that hostile

racist campus climates may have on their academic experience. Experience determining

eligibility for military educational benefits was associated with GPA for four-year institution

students. These findings promote the need for four-year institutions to ensure that

communication about the utilization of military educational benefits is as clear as possible and

delivered early so that military-connected students have a clear concept of the process required to

determine benefit eligibility and to utilize benefits. Additionally, staff who work with military-

connected students on financial issues should be well-trained regarding the use of military

educational benefits so they are prepared to help students make informed decisions.

Conclusion

The findings from this study illuminate several opportunities for future research including

a longitudinal study of military-connected students' academic experiences and a deeper

exploration of the role that non-cognitive characteristics play in the academic success of

military-connected students. This population of students have unique experiences and face

unique challenges that may be significant but unrecognized by the institution. Military-

connected students are valuable members of the institutional community and expanding

understanding of this population's needs will allow institutions to successfully serve them. The

findings from this study have implications for local and national efforts to promote the academic

success of military-connected students.

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Table 1.

Independent Variable List

	α	Variable	Code	Key
Dependent Variables				
		Current cumulative GPA	GPACURR	Continuous, 0.0 to 4.0
		Intent to Return	RETURN	1= Yes; 0 = No
Independent Variables				
Demographic characteristics	N/A	Sex[a]	SEX	1 = female; 0 = male
		Race[b]	RACE	1 = Student of Color; 0 = White
		First-generation	FGEN	1= yes; 0 = no
		Combat deployment experience	DEPLOY	1= yes; 0 = no
		Service-related injury/disability	INJURY	1= yes; 0 = no
		Spouse/Dependent Children	FAMILY	1= yes; 0 = no
Financial experiences	0.80	Understood the process for securing MEB	FUNDERSTOOD	1 = SD; 2 = D; 3 = A; 4 = SA[c]
		Process for securing MEB was hassle-free	FHASSLEF	1 = SD; 2 = D; 3 = A; 4 = SA
		MEB were sufficient to cover needs	FCOVER	1 = SD; 2 = D; 3 = A; 4 = SA
		The process for securing MEB was what I expected	FEXPECT	1 = SD; 2 = D; 3 = A; 4 = SA

		Determining MEB eligibility was hassle-free	FDETERMINE	1 = SD; 2 = D; 3 = A; 4 = SA
Academic Experiences: Academic Integration	0.71	Felt academically prepared to enter the institution	AIPREP	1 = SD; 2 = D; 3 = A; 4 = SA
		Felt academically overwhelmed	AIOVERW*	1 = SD; 2 = D; 3 = A; 4 = SA
		Experience meeting professor's expectations	AIEXPECT*	1 = No frustration; 2 = Some frustration; 3 = High frustration
Academic Experiences: Credit Transfer/ Awarding	0.78	Understood process for military credit transfer	ACUNDERSTOOD	1 = yes; 0 = no
		Level of satisfaction with credit application	ACSATISFIED	1= Very dissatisfied; 2 = Dissatisfied; 3 = Satisfied; 4 = Very satisfied
		Experience obtaining credit for military service	ACOBTAIN*	1 = No frustration; 2 = Some frustration; 3 = High frustration
Personal experiences	0.91	Instructors valued the life and work experiences gained from military service	PVALUE	1 = SD; 2 = D; 3 = A; 4 = SA
		Felt like an important member of the community	PFELT	1 = SD; 2 = D; 3 = A; 4 = SA

	Institution was welcoming for military and veteran students	PWELCOME	1 = SD; 2 = D; 3 = A; 4 = SA
	Institution was well-prepared to assist military and veteran students	PPREP	1 = SD; 2 = D; 3 = A; 4 = SA
	Institution cared about military and veteran students	PCARED	1 = SD; 2 = D; 3 = A; 4 = SA
Relationship experiences	N/A	Relationship with fellow military and veteran students	RMILSTU	1 = yes; 0 = no
		Relationship with Veteran staff	RVSTAFF	1 = yes; 0 = no
		Relationship with Faculty	RFAC	1 = yes; 0 = no
		Relationship with Academic adviser	RADV	1 = yes; 0 = no

Notes: *reverse coded item

[a]An option was provided for participants to report that they do not identify as exclusively male or female; no participants selected this option.

[b]Race and ethnicity were collected using categories outlined by the U.S. census; however, student of color comprises all participants reporting non-white race/ethnicity for the purposes of analysis.

[c]SD=strongly disagree; D=disagree; A=agree; SA = strongly agree

Table 2.

Regression Coefficients and Descriptive Statistics for Study Factors and Cumulative GPA for Military-Connected Students at Community Colleges (N=212)

Variable	β	*SE B*	*M*	*SD*
SEX	-0.02	0.11	0.20	0.40
RACE	-0.30*	0.12	0.15	0.36
FGEN	0.10	0.09	0.52	0.50
DEPLOY	-0.05	0.09	0.51	0.50
INJURY	-0.09	0.09	0.41	0.49
FAMILY	0.13	0.09	0.52	0.50
SEMCOMP	0.01	0.02	3.00	2.43
FUNDERSTOOD	0.00	0.07	3.00	0.93
FCOVER	-0.08	0.05	2.75	0.91
FEXPECT	0.05	0.06	3.03	0.93
AIPREP	0.10	0.08	3.25	0.71
AIOVERW^	-0.02	0.06	2.23	0.89
AIEXPECT^	-0.23**	0.08	1.67	0.65
ACUNDERSTOOD	0.16	0.14	0.48	0.51
ACOBTAIN^	0.18	0.13	1.89	0.86
ACSATISFIED	0.09	0.09	2.37	0.98
PVALUE	-0.10	0.06	2.94	0.83
PPREP	0.04	0.07	3.16	0.74
RFAC	-0.13	0.16	0.87	0.34
RADV	0.18	0.11	0.73	0.45

Model Summary

$F (20, 172.2) = 2.27**$ $R^2 = 0.31$ $R^2_{adj.} = 0.24$

Note. ^indicates reverse-coded variable, *p < 0.05, ** p < 0.01

Table 3

Logistic Coefficients for Study Factors and Intent to Return Using Multiple Imputation and Mean Imputation for Missing Data (N=205)

Variable	Multiple Imputation			Mean Imputation		
	β	Odds Ratio	Std. Err.	β	Odds Ratio	Std. Err.
SEX	0.38	1.46	0.07	0.26	1.30	0.99
RACE	0.82	2.26	0.08	1.12	3.05	3.43
FGEN	-1.31	0.27	0.05	-1.21	0.30	0.19
DEPLOY	0.35	1.42	0.02	0.39	1.48	0.88
INJURY	-0.91	0.40	0.05	-1.06	0.35	0.24
FAMILY	-0.37	0.69	0.05	-0.43	0.65	0.40
SEMCOMP	-0.15	0.89	0.10	-0.13	0.88	0.08
FUNDERSTOOD	0.67	1.95	0.04	0.54	1.71	0.78
FHASSLEF	-0.25	0.78	0.00	-0.15	0.86	0.42
FCOVER	-0.03	0.97	0.04	-0.09	0.92	0.36
FEXPECT	-0.36	0.70	0.04	-0.61	0.55	0.26
FDETERMINE	0.08	1.08	0.04	0.14	1.15	0.59
AIPREP	-2.21**	0.11**	0.04	-2.22**	0.11**	0.07
AIOVERW^	0.13	1.14	0.04	0.16	1.17	0.50
AIEXPECT^	-0.36	0.70	0.05	-0.29	0.75	0.40
ACUNDERSTOOD	-0.80	0.45	0.07	-0.64	0.53	0.39
ACOBTAIN^	-0.09	0.91	0.05	0.13	1.13	0.69
PVALUE	-0.20	0.82	0.04	0.06	1.06	0.49
PFELT	-0.36	0.70	0.04	-0.49	0.62	0.32
PPREP	0.65	1.91	0.04	0.74	2.09	1.11
RMILSTU	0.43	1.54	0.06	0.47	1.61	1.14
RVSTAFF	0.31	1.36	0.06	0.60	1.82	1.27

| RFAC | -0.54 | 0.58 | 0.07 | -1.13 | 0.32 | 0.39 |
| RADV | 0.99 | 2.69 | 0.06 | 0.62 | 1.86 | 1.26 |

Note. ^ indicates reverse-coded item, ** p < 0.01