CNA

April 2021

Tracking Outcomes of Voluntary Military Education Programs: A Literature Review

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DRM-2014-U-008864-2Rev

Abstract

The Department of Defense (DoD) provides education benefits to Servicemembers and their spouses. Two such benefits are the Tuition Assistance (TA) program, designed to decrease the financial burden of higher education for military members, and the My Career Advancement Account (MyCAA) scholarship program, a workforce development program designed to assist eligible military spouses in pursuing training, licenses, credentials, certifications, and associate degrees in support of developing portable employment and careers. A dearth of information on the educational and financial outcomes of TA and MyCAA users prompted Congress to mandate, in the 2014 DoD Appropriations Bill, a study to document the aggregate graduation rates, financial indebtedness, and loan default rates of these military families. Here, we summarize information from the TA and MyCAA literature. However, because little information is currently available, we also explore the civilian higher education literature on tuition reimbursement, graduation rates, student debt, and loan default rates. This provides the relevant background information needed for the quantitative portion of this study, in which we will collect and analyze available data on educational outcomes for TA and MyCAA users.

This work was performed under Federal Government Contract No. N00014-16-D-5003.

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Approved by: **April 2021**

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Executive Summary

The Department of Defense (DoD) provides education benefits to Servicemembers and their spouses to decrease the financial burden of higher education for military Servicemembers and to support the development of portable employment and careers for military spouses. The Tuition Assistance (TA) program provides up to $250 per semester credit hour (or equivalent) with an annual maximum of $4,500 in tuition to active component and some reserve component Servicemembers. TA can be used for certificates, as well as for associate, bachelor's, and graduate degrees. The My Career Advancement Account (MyCAA) scholarship program is a workforce development program that provides a 3-year maximum of $4,000 of financial assistance to eligible military spouses who are pursuing a license, certification, or associate degree in a portable career field or occupation.

Although there is evidence that, in general, the TA program can be useful in recruiting higher quality personnel, the evidence on TA's retention benefits is mixed. And, although it is possible that the MyCAA scholarship program for military spouses affects Servicemember recruitment and retention, scant evidence on these effects exists. In addition, there is little current research on the educational and financial outcomes of TA and MyCAA users. This dearth of information prompted Congress to mandate, in the 2014 DoD Appropriations Bill, a study to track the aggregate graduation rates, financial indebtedness, and loan default rates of TA and MyCAA users.[1] The Principal Director of Military Community and Family Policy asked CNA to conduct this congressionally mandated study.

In this preliminary report, we summarize the TA and MyCAA literature—including research on these programs' use and outcomes. Because few studies have focused on these programs, we also explore the civilian higher education literature to better understand potential educational outcomes for TA and MyCAA users. In doing so, this report provides the relevant background information needed for the quantitative portion of this study, in which we will collect and analyze data on educational outcomes of TA and MyCAA users.

[1] Unfortunately, data needed to determine financial indebtedness and loan default rates are not available.

In general, college graduates experience numerous benefits—namely, increased earnings potential, higher employment rates, and an increased quality of life. Therefore, college usually is worth its cost, except possibly for those who:

- Fail to receive their degree (nonattainers)
- Fail to find a job commensurate with their ability (underemployment)
- Take on more debt than their future income warrants (excessive debt)

We expect that the aforementioned reasons why college may fail to be worth its cost for civilian students also will apply to TA and MyCAA users.

There is important and substantive variation across educational sectors in students' outcomes; students in the private for-profit sector generally have the poorest outcomes (e.g., lowest graduation rates), although these schools also tend to have open enrollment policies that may contribute to students who are less academically prepared at time of enrollment. Private for-profit institutions are more popular among TA users than civilian college students, and TA users spend more at private for-profits than at public or private not-for-profit institutions. Private for-profits represent slightly less than half of TA users (48 percent), but more than half of TA funds (53 percent). The popularity of private for-profits among TA users is a concern because they have substantially higher nonattainment rates and higher proportions of students and alumni with excessive debt. Specifically:

- Nonattainment rates at private for-profits are 85.2 percent. (For comparison, nonattainment rates at public and private not-for-profit institutions are 38.5 percent and 29.3 percent, respectively.)
- Mean debt of bachelor's degree recipients at private for-profits is $45,042. (For comparison, mean debt of bachelor's degree recipients at public and private not-for-profit institutions is $12,922 and $18,700, respectively.)

It remains to be seen whether these differential outcomes hold for TA and MyCAA users, who may differ from other students at these institutions in meaningful ways. And private for-profits may offer TA and MyCAA users something that is not offered at many public or private not-for-profit institutions: distance learning options and the ability to pursue courses on a flexible schedule (even while working full-time). The private for-profits have tailored their education services around being able to provide this flexibility for their students, which may make them particularly attractive to TA and MyCAA users.

For several reasons, it is possible that TA users will be less likely to graduate from college (while using TA) than typical civilian college students and, therefore, also less likely to experience its associated benefits. First, TA is disproportionately used at private for-profits. The students of private for-profit institutions are substantially

less likely to graduate with bachelor's degrees compared with those in other education sectors, although this could related to student characteristics. Second, TA and MyCAA users are nontraditional students: they enroll part-time, are older at enrollment than traditional students, and require distance learning options. A nontraditional student is less likely (than the average student) to graduate with a bachelor's degree. Third, in general, compared with society at large, Servicemembers are more likely to be racial/ethnic minorities. Racial/ethnic minorities are less likely (on average) to graduate with bachelor's degrees. Although these findings suggest that TA users may be less likely to graduate with bachelor's degrees than other, more traditional college students, no previous studies have determined whether this is actually the case. The empirical phase of this study will attempt to answer this question.

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Glossary

BLS	Bureau of Labor Statistics
DoD	Department of Defense
FY	Fiscal Year
GAO	Government Accountability Office
IPEDS	Integrated Postsecondary Education Data System
MyCAA	My Career Advancement Account
NPR	National Public Radio
PDV	Present Discounted Value
TA	Tuition Assistance program
VolEd	Voluntary Education

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Introduction

The Tuition Assistance (TA) program was established in the post-World War II era, enabling Servicemembers to pursue college at a subsidized rate while still in the military [1-3]. In the early 1990s, there was not a consistent TA benefit for Servicemembers throughout the Department of Defense (DoD) [4]. So, during the 1990s, there was a concerted effort to have each of the Services offer the same level of TA benefits [5]. In the late 1990s, TA was capped at $187.50 per semester hour with an annual ceiling of $3,500 [2, 5]. In 2003, TA benefits increased to their current level: up to $250 per semester hour[2] with a maximum of $4,500 in tuition per year.[3]

The TA program has persisted since its inception because of its value both to the Services and to the Servicemembers who use it. For the Services, TA can aid in recruiting efforts (e.g., see [6]). Its usefulness as a retention tool is still debated. Similarly, many aspects of how Servicemembers benefit from TA are still being explored. TA has been found, however, to facilitate the transition to civilian life and to reduce the need for student loans. Specifically, TA offers access to the benefits of higher education without Servicemembers having to acquire the typical levels of student debt to accomplish their educational goals.

The My Career Advancement Account (MyCAA) scholarship program enables its users to earn licenses, certifications, or associate degrees in portable career fields and occupations without needing to afford their costs. The current version of MyCAA dates to October 2010. This program allows the spouses of junior (paygrades E1-E5, W1-W2, and O1-O2) Servicemembers serving on active-duty Title 10 orders to pursue job training and skills that they can take with them as they move with their spouses from one duty station to another. The program provides a 3-year maximum of $4,000, capped at $2,000 within a fiscal year (although this is waiverable) [7].

Although both TA and MyCAA enable their users—who might otherwise not have pursued postsecondary education—to do so, there is little prior research

[2] Unless otherwise noted, "per semester hour" encompasses the credit-hour equivalency for quarter hours or other credit-hour types.

[3] In many cases, educational institutions forgo all costs that exceed the cap of $250 per semester credit hour.

documenting precisely how individual Servicemembers and their spouses benefit from TA and MyCAA. Similarly, there is no known literature that examines the educational and financial outcomes of TA and MyCAA users.[4] This makes it virtually impossible to calculate TA's and MyCAA's long-term benefits for Servicemembers and their families. Because of the lack of formal research, Congress has recently requested information on the outcomes (e.g., graduation rates and debt incurred) of TA and MyCAA users [9]. In particular, the 2014 Appropriations Bill mandated a study calculating graduation rates, student debt, and student loan default rates for TA and MyCAA users. Congress requested these measures by education sector (public, private not-for-profit, and private for-profit) because the measures could differ substantively depending on where Servicemembers and/or their spouses use TA and MyCAA.

DoD's Military Community and Family Policy Office, which managed both TA and MyCAA at the time, asked CNA to conduct a study that fulfills the 2014 Appropriations Bill requirements.[5] This literature review is an initial report in this larger effort and provides background for the quantitative analysis requested by Congress. Due to the lack of research on the TA and MyCAA programs, we must hypothesize about the outcomes of these programs for Servicemembers and spouses based on what has been found in the civilian higher education literature regarding outcomes for college attendees and graduates. We therefore rely on the existing literature, which mostly focuses on the outcomes of traditional students. TA and MyCAA users, however, are nontraditional students (who may enroll part-time, have full-time jobs, rely solely on distance learning, or be military-connected). Where possible, we use the experiences of nontraditional students to better inform our understanding of how TA and MyCAA users experience and benefit from their college educations.

The remainder of this report is organized as follows. We begin by providing background information on both the TA and MyCAA programs. We then review how these programs may have benefited the Services, the current level of TA expenditures by Service, and the recent policy changes affecting TA and MyCAA users. We go on to discuss the benefits and potential costs of a college education. Whether a college education is (financially) worthwhile will depend largely on whether a degree is ultimately obtained. Thus, we also review the existing literature on students'

[4] Indeed, a 2012 Government Accountability Office (GAO) study noted that DoD was not able to measure the effectiveness of MyCAA and other spouse employment programs and had only a few performance measures for these programs [8].

[5] In January 2016, management of the TA program (as well as other Voluntary Education (VolEd) programs) migrated to Force Education and Training. The Military Community and Family Policy Office still oversees MyCAA.

experiences and outcomes, to include graduation rates and the financial implications of college attendance (tuition, student loans, and, for some, defaulting on those loans). We separately address the experiences and outcomes of students in the for-profit education sector since this sector has risen in popularity among TA users and has been the subject of much public scrutiny. In the final section, we use the lessons learned regarding traditional students to draw conclusions for TA and MyCAA users.

TA and MyCAA

The TA and MyCAA programs provide funds for active component and some reserve component Servicemembers and their spouses to take college courses. The TA program offers access to the benefits of higher education without Servicemembers having to acquire the typical levels of student debt to complete their education goals. The MyCAA scholarship program is a workforce development program that provides financial assistance to eligible military spouses who are pursuing a license, certification, or associate degree in a portable career field and occupation. This section documents the eligibility requirements of both programs. We also review the programs' recruiting and retention effects, the Services' expenditures on each program, and the recent rise in students using TA to attend for-profit institutions.[6] We conclude the section by reviewing some recent policy changes that have the potential to affect the experiences of TA and MyCAA users.

TA benefits and eligibility

All Services provide the same TA benefits: up to $250 per semester credit hour up to a maximum of $4,500 in tuition per fiscal year (FY). Historically, TA users have pursued associate or bachelor's degrees, but TA also can be used for coursework to obtain a high school diploma, certificate,[7] or master's degree [11-14].

Services can set their own TA eligibility requirements, but generally all active component Servicemembers qualify for TA [15]. In the Navy and Marine Corps, reservists are eligible for TA only if they are activated under Title 10, whereas the Army and Air Force have separate reserve component programs through which their

[6] We have been unable to find research specifically examining MyCAA use by institution type.

[7] A certificate is awarded by educational institutions and indicates "completion of a course or series or courses with a specific focus" [10]. Certificates also "provide the basis and gateway for achieving a degree" [10].

National Guardsmen and reservists can qualify for TA if they meet eligibility requirements [12, 15].[8]

MyCAA benefits and eligibility

There are more limiting eligibility requirements for MyCAA than for TA. Military spouses are eligible for MyCAA if their spouses are in junior paygrades (E1-E5, W1-W2, and O1-O2) and are serving on active-duty Title 10 orders. Like TA benefits, MyCAA benefit amounts do not vary by Service [16]. MyCAA provides a 3-year maximum education benefit of $4,000, with an annual FY cap of $2,000 (although this can be waived). Eligible military spouses are able to pursue higher education up to and including an associate degree, including licenses, certificates,[9] and credentials, in specialized fields that are "necessary for gainful employment in high-demand, high-growth" occupations and in fields consistent with the relocation requirements of a military spouse [16].

A recent study examined the education and employment preferences and experiences of military spouses eligible for MyCAA to identify barriers to MyCAA use and to achieving educational and employment goals more broadly [18]. The survey showed that 18 percent of eligible spouses used MyCAA in the previous year. Of those who did not use MyCAA, over half reported that they were unaware of the program.

Demographic factors differed considerably among those who had used MyCAA in the previous year and those who had not, with recent users being younger, more likely to be female, less likely to be white, more likely to have some college or a vocational/technical certificate, and less likely to have a bachelor's degree.

Key reasons for not using the MyCAA program among those who were aware of it included concerns about eligibility, the availability of time for education, and cost. Other barriers included family responsibilities and the cost of child care.

[8] Guardsmen may additionally qualify for federal- and state-funded tuition reimbursement programs.

[9] Certifications are awarded by a third party or standard-setting organization [17]. A certification indicates "mastery/competency as measured against a defensible set of standards, usually by application or exam" [17]. A certification has no relationship with attaining a higher education degree [17].

Effect of tuition reimbursement on recruiting and retention

A few studies have highlighted the benefits of tuition reimbursement to the organizations that offer it—in terms of both recruiting and retention—but none of these studies have focused on TA and MyCAA use in the Services. Flaherty, for example, explains that firms often offer tuition reimbursement as a form of non-wage benefit when they are unable to offer higher wages [19]. As such, tuition reimbursement programs can be effective in attracting higher quality employees whose recruitment requires more lucrative compensation packages (including both wage and non-wage compensation) [19]. In an evaluation of data from the 1997 National Employer Survey, Cappelli finds suggestive evidence that higher quality employees *are* in fact responsive to the availability of tuition reimbursement programs [6]. Specifically, he finds that the average educational attainment of new hires is higher at firms offering some form of education benefit than at those not offering any [6]. Using educational attainment as a proxy for quality, he interprets this as evidence that higher quality people are motivated by the prospect of furthering their educations (or at least working in an environment where that benefit is provided) [6]. By similar logic, offering TA should allow the Services to attract higher quality recruits than they might otherwise be able to. This was further confirmed in a 2011 report: survey respondents cited opportunities for professional development as the most important job attribute [20]. Thus, the limited evidence that exists suggests that Services' TA programs *should*, in fact, have positive recruiting effects.

Just as there are only a few studies discussing the recruiting benefits of TA, the corresponding literature for TA's effects on retention is also small, but developing. The predicted effect of TA on retention is unclear. Servicemembers might be influenced to stay in the Service to take advantage of benefits, but they may use TA to obtain degrees that they can use later in the civilian sector. At present, half of the existing studies find that TA increases retention, and half find that TA decreases retention. Most of the studies focus exclusively on Navy sailors, though one study examines the retention effects of TA on soldiers and airmen. Each study solves a different methodological problem without fully addressing the methodological issues of the previous studies. So, the results to date as to whether TA has a significant effect on retention are inconclusive. We now discuss the existing studies.

Garcia et al. conducted one of the first studies examining how TA affects sailors' retention. This early study employed a cost-benefit analysis but lacked the methodological rigor of some of the later studies [21]. Garcia et al. later updated this work with some methodological improvements [22]. Specifically, the newer study attempts to control for systematic differences in those who use TA versus those who

never use TA (by also determining who was more likely to use TA) [22].[10] Both studies find that TA use increases retention [21-22]. That is, sailors who use TA are more likely to remain in the Navy.

Contrary to the Garcia et al. studies, Buddin and Kapur found that Navy (and Marine Corps) TA users are less likely to reenlist [2]. Buddin and Kapur noted that the Garcia et al. methodology may not have fully accounted for the differential probabilities of TA use and proposed a different way to account for them [2].[11] The probability of TA use is correlated with reenlistment decisions: most sailors who are not going to reenlist have less available time to use TA because they are going to leave the Navy [2]. Buddin and Kapur concluded that TA is used to facilitate a better transition to civilian life [2].

Contrary to Buddin and Kapur's study, yet consistent with the Garcia et al. studies, Mehay and Pema found that TA users are more likely to remain in the Navy. Mehay and Pema pointed out that the aforementioned studies used only a single cohort [23]. Mehay and Pema argued that this alone could influence the results; they included multiple cohorts to correct for this issue [23]. Their study also controlled for the selection issue raised by Buddin and Kapur—namely, that sailors who remain in the Navy longer are more able to use TA [23]. Mehay and Pema's solution was to focus only on TA users [23]. Their argument for doing so rests on the following: (1) incomplete (or failed) courses being determined solely by deployments, (2) that sailors' own deployments are unknown in advance, and (3) that sailors cannot influence their deployability [23]. Though a deployment *can* cause severe disruptions to a sailor's studies, we would argue that deployment schedules should be known by the sailors in advance. Thus, the study's findings may be suspect since they are based on this potentially erroneous assumption. In addition, their conclusion has an alternative interpretation that the authors posit: successful TA users are more likely to remain in the Navy (as compared with unsuccessful TA users).

Just as there have been contradictory findings for the retention of Navy TA users, there have been mixed findings for the retention of Army and Air Force TA users. On one hand, Simon et al. find that soldiers and airmen using TA were *more* likely to separate after six years than their non-TA-using counterparts [24]. On the other hand, Stitcha et al. report overall positive effects of TA use on retention. Specifically, after controlling for possible selection bias—i.e., the fact that TA users may differ systematically from their non-TA using counterparts—they find that soldiers who have used TA are 7 percentage points more likely to reenlist at the end of their first

[10] This was done by determining whether sailors had taken course counseling.

[11] Their primary method for doing so employed distance to the nearest four-year institution at the time of enlistment, presumably using the sailor's home of record.

terms and are 5 percentage points more likely to complete both the first and second years of service [25]. Similarly, in an evaluation of eArmyU, the Army's e-learning, continuing education program, Orvis et al. found that program participation is associated with increased retention [26]. The fact that existing studies have contradictory findings warrants further empirical investigation and suggests that no clear conclusions can yet be drawn.

Similarly, although there has been scant work on the recruitment and retention effects of the MyCAA scholarship program, helping military spouses in this way could affect Servicemember recruitment and retention, particularly by improving military family outcomes [27-28].

TA and MyCAA expenditures across the Services

Evaluating TA and MyCAA expenditures helps to determine how TA and MyCAA use varies. Expenditures are a function of both the number of users and the amount of spending per user. Thus, higher expenditures imply some combination of more users, more semester credit hours per user, and/or more expensive semester credit hours per user (i.e., more expensive institutions).

The Army and the Air Force have historically been the biggest TA spenders. Before 2002, the Air Force led all Services in TA spending; beginning in 2002, the Army has taken the lead [29].[12] These Services' high TA spending is likely driven by different factors. The Army has the largest enlisted force and, therefore, the largest number of Servicemembers eligible for TA [30]. The Air Force, however, historically has spent more per TA user [4]. For example, the Air Force has had the greatest number of TA users enrolled in graduate studies [4]. As of FY 2012, the Army and Air Force were each spending approximately $200 million on TA, while the Navy spent less than $100 million, and the Marine Corps spent about $50 million [29].

There was a sharp increase in TA expenditures across all Services from 2002 to 2003, though most notably in the Army and Air Force [29]. Chronologically, this corresponded with an increase in the amount reimbursed per credit hour and extension of TA eligibility to members of the Army Reserve, Army National Guard, and Air Force Reserve in 2002 [32-34]. In addition, according to a 2012 GAO report,

[12] Except for 2006 through 2008.

DOD spent $54.8 million on MyCAA in 2011, and about 125,000 spouses received MyCAA scholarship program funds between October 2008 and May 2012 [8].[13]

The emergence of the private for-profit sector among TA users

In the past two decades, one of the major changes to the higher education landscape has been the rise of the private for-profit higher education sector. The rapid growth of the private for-profit sector has allowed Servicemembers to use their TA funds to enroll at these newer institutions. Table 1 shows how the top 10 institutions—in terms of TA enrollments—changed between FY 1992 and FY 2015. In FY 1992, there were no private for-profit institutions among the top 10 institutions receiving VolEd funds [22]; 20 years later, 4 of the top 10 institutions receiving TA were private for-profit institutions [31-32]. We offer two explanations.

The emergence of private for-profits in the top 10 institutions receiving VolEd funds may have been due in part to the for-profits' extensive suite of online course offerings. In addition, it may be related to the change in the percentage of tuition covered by TA. Servicemembers used to pay 25 percent of their tuition, and the remaining 75 percent was covered by the TA program. This changed, however, so that Servicemembers now pay none of their tuition costs; 100 percent is covered by the TA program (up to the maxima of $250 per semester hour and a total of $4,500). This change may have enticed some Servicemembers to enroll in courses using their TA who otherwise would not have done so. If these additional enrollees were less dedicated or less motivated students, who perhaps were only qualified for admission into public two-year or private for-profit, four-year institutions, then this could cause enrollments by TA users at for-profit schools to rise. Although more TA users are using their TA funds at for-profits, the implications of this, in terms of expenditures and TA user/student outcomes, remain unknown. This will be investigated in greater length in the next phase of our study.

[13] Expenditures were significantly higher ($186.8 million) in 2010, which led to several program changes.

Table 1. Top 10 most frequently VolEd- or TA-attended institutions, FY 1992 and FY 2015[a]

	FY 1992 (Navy only)		FY 2015	
Rank	**Top 10 VolEd institutions**	**Sector**	**Top 10 TA institutions**	**Sector**
1	University of Maryland - University College	Public	American Military University and American Public University	Private for-profit
2	Saint Leo College (now Saint Leo University)	Private not-for-profit	University of Maryland - University College	Public
3	Southern Illinois University at Carbondale	Public	Ashford University	Private for-profit
4	Tidewater Community College	Public	Central Texas College	Public
5	Florida Community College	Public	Embry-Riddle Aeronautical University	Private not-for-profit
6	Central Texas College	Public	Columbia Southern University	Private for-profit
7	Embry-Riddle Aeronautical University	Private not-for-profit	University of Phoenix	Private for-profit
8	Chaminade University	Private not-for-profit	Liberty University	Private not-for-profit
9	Hawaii Pacific University	Private not-for-profit	Excelsior College	Private not-for-profit
10	San Diego City College	Public	Park University	Private not-for-profit

Source: FY 1992, from [22], is based on all VolEd enrollments, not just TA, from the Navy (not all Services). FY 2015 is from [33] and includes all TA enrollments across all Services.

a. Sectors are public, private not-for-profit, or private for-profit.

We now compare the expenditures (or TA funds) with shares of students and courses across education sectors. Doing so provides a sense of that sector's efficiency or value. Sectors where the share of students and/or courses is equal to their share of TA funds represent a baseline. On one hand, sectors with a larger share of students and/or courses than their TA funds are more efficient: on average, per student or per course, they are cheaper. On the other hand, sectors with a smaller share of students and/or courses than TA funds are less efficient: on average, per student or per course, they are more expensive. Table 2 presents the share of students, courses, and TA funds by education sector for the 50 most frequently attended institutions by TA users in FY 2015. In FY 2015, private for-profit institutions accounted for most of the 50 institutions most commonly enrolled in by TA users, representing 48 percent of students (and 50 percent of the courseload), and more than half (53 percent) of TA

funds (CNA tabulations of [31-33]). Public institutions appear to be the best value: they account for 28 percent of the students and 25 percent of the courseload, yet only 21 percent of the TA money spent (CNA tabulations of [33]). Conversely, private not-for-profit institutions represent 24 percent of students, 25 percent of courseload, and 26 percent of TA funds spent (CNA tabulations of [33]). Both private not-for-profits and for-profits have a larger share of TA funds than either students or courses.

Table 2. Share of students, courses, and TA funds in the 50 most frequently attended institutions by TA users, by sector, FY 2015[a]

Share of …	Public	Private not-for-profit	Private for-profit
Students	28%	24%	48%
Courses	25%	25%	50%
TA funds	21%	26%	53%

Source: CNA tabulations of [33].

[a]. The 50 most frequently attended institutions by TA users represent 228,064 Service-members taking just under 600,000 courses and using $422 million of TA funds (CNA tabulations of [33]).

Table 2 does not tell a complete story. It does not include the funds that TA users contribute out of their own pockets or how much of TA users' future GI Bill benefits are being used now. This is possible through a provision in the GI Bill known as "Top-Up" [11, 34], which allows Servicemembers to use TA and GI Bill benefits simultaneously [11, 34]. It allows Servicemembers to use their GI Bill benefits early to pay for tuition and fees that exceed TA maximums—while still serving in the military—so that they do not have to take out loans for the remainder of the tuition [11, 34]. Doing so can reduce tuition-driven debt. Thus, there is a decline in debt probability associated with the rise in Servicemembers' use of Top-Up. However, Top-Up is not free. It imposes a cost of reduced, or no, GI Bill education benefits on completion of service since Servicemembers can use their GI Bill benefits while on active duty and can use TA to reduce the need for debt. This may enable them to take courses that they would have been otherwise unable to take while on active duty, but it will decrease the GI Bill benefit available to them after leaving the Service.

Given that private for-profits have garnered an increasing amount of TA funds, it is important to evaluate how student outcomes compare at private for-profit and more traditional institutions. Marotell and Bergman find that the rise of private for-profits corresponded with an increase in veterans using the GI Bill at private for-profit institutions [35]. They concluded that GI Bill users' increased attendance at private for-profits resulted in worse outcomes for them (e.g., higher debt and lower probability of obtaining a degree) [35]. Whether and how private for-profit

institutions affect TA and MyCAA users is an open question. It will be informed later in this literature review, and the future empirical complement to this paper will aim to specifically examine TA and MyCAA user outcomes by education sector.

Recent policy changes affecting users of TA and MyCAA

Perhaps in response to concerns that veterans' outcomes have worsened because of increased enrollment at private for-profit institutions [35], there has been recent legislation and DoD instructions targeted at improving the outcomes of TA users.

The first policy change was a result of the rise in the private for-profit sector and congressional concerns over it.[14] On April 27, 2012, President Obama signed Executive Order 13607, Establishing Principles of Excellence for Educational Institutions Serving Service Members, Veterans, Spouses, and Other Family Members. It requires educational institutions receiving funding from federal military and veterans educational benefits programs (including TA and MyCAA) to adhere to certain principles, including providing information to students on the full cost of programs and ending fraudulent and unduly aggressive recruiting techniques.

The second policy change was likely designed to improve grades and thereby increase the probability of Servicemembers obtaining degrees. As of September 5, 2014, a Servicemember using TA and receiving a grade below C in an undergraduate course or below B in graduate-level course must pay back the TA funds (the previously required grades were D and C, respectively). The structure of this policy is similar to many merit-based scholarships (as documented by Duffourc), which have similar requirements of earning at least a C [36]. The policy is functionally similar to an increase in tuition or a decrease in benefits for those earning less than the minimum grades [37]. This essentially penalizes students for poor performance. This is consistent with employer-provided tuition reimbursement, which is typically conditional on (good) performance [38]. There has been insufficient time to assess the effects of this policy change.[15]

To summarize, aside from eligibility requirements and what TA and MyCAA provide to their users, relatively little is known about how the Services and individual Servicemembers benefit from these programs. For example, the TA program's

[14] We discuss the rise of the private for-profit sector and the corresponding congressional concerns in a later section, "Private For-Profit Institutions and Their Students."

[15] The MyCAA scholarship program does not recoup costs associated with failed courses.

impacts on retention are largely unknown, as are the effects of the rise of private for-profits on TA users. What *is* known is that expenditures on TA across all Services have increased in the past two decades. The goal of TA, from the Servicemember's perspective, is to get a college education. There are potential costs and benefits associated with getting a college degree. Whether more costs or benefits are realized depends partly on whether a degree was obtained and partly on how much debt was incurred in pursuit of that education. We explore these issues in the next section.

Benefits and Potential Costs of College Attendance

In this section, we review the potential benefits and costs of college attendance. We document past research on both the quantitative and the qualitative benefits associated with earning a bachelor's degree. Some of these benefits only are realized once the degree is earned. Thus, those who fail to obtain a degree may be left with greater costs than benefits. Although numerous benefits are associated with higher education, a college degree involves considerable cost. *All* college attendees (regardless of whether they graduate) incur the monetary costs of tuition, books and supplies, and potentially room and board; in addition, there is an opportunity cost associated with college attendance due to the wages and labor market experience that are forfeited while attending college (unless students are able to work full-time). In this section, we explore additional, potential costs of college attendance and consider the possible disadvantages from incurring these costs to pursue higher education.

Some TA users will be able to obtain a degree via their TA benefits. Others, however, will not. In addition, users of MyCAA can earn a variety of credentials but are unable to obtain above an associate degree via MyCAA. As a result, it is important to understand the differential benefits of attending college—whether or not one ultimately obtains a degree.

Benefits

Higher education confers a broad range of benefits for graduates. Servicemembers who use TA (and spouses who use MyCAA) experience those benefits associated with higher education both during and after their military service. TA and MyCAA users experience some of those benefits by simply attending college, while they only experience other benefits after they *graduate* from college. As Avery and Turner state, "The college experience provides graduates with skills and social networks, and a college degree may serve as a signal of ability to employers" [39, p.167]. These three components—acquired skills, acquired networks, and signals of ability—are among the primary benefits that a college education offers.

The benefits to TA and MyCAA users who attend college but do not ultimately obtain a degree can be divided into two categories. First, there are those that affect knowledge, skills, behavior, and attitudes, as identified by Buryk et al. [29]. These benefits are realized more immediately and include such things as credit toward an associate or bachelor's degree, an occupational license or a certificate, engagement in meaningful off-duty activity, and development of critical thinking skills [29]. Second, there are benefits that are realized in the longer term and can affect such things as changes in earnings or occupation [29]. TA users, for example, likely will experience faster promotions in their military careers and a more successful transition to civilian life after their military careers [29]. Both forms of these benefit types—the more immediate and the longer term—can be realized by TA users even in the absence of a degree.

College graduates receive all of these benefits, as well as the additional benefits that are unique to receiving a diploma. For college graduates, the benefits most frequently cited are increased quality of life, earnings, and employment opportunities [39-42].[16] We discuss findings regarding each of these in turn.

Better quality of life

Recent research shows that higher education offers an improved quality of life. Baum et al. document numerous quality-of-life benefits for college graduates, including improved psychological well-being; healthier lifestyles, for example, through more exercise and decreased smoking; increased social and civic engagement; and, for mothers, more time involved with their children [43]. In addition, a Gallup and Purdue University national poll reported that 39 percent of college graduates said that they were "engaged at work," compared with 29 percent of the population at large [42].

There do not appear to be differences in quality of life based on the tier of the institution that students attend. That is, those who attended top U.S. universities and colleges are no more likely to be "engaged at work" or "thriving" in all aspects of their lives (sense of purpose, financial security, physical health, close relationships, or community pride) than those who attended other traditional institutions [42].

[16] Gains to quality of life and employment might arguably also apply to college attendees (who attend some college but do not complete a degree). Gains in earnings, however, are unique to graduates.

Higher earnings and income

Because of the increased earnings potential that a college degree confers, it is largely agreed that a degree is a good investment. The Bureau of Labor Statistics (BLS) has documented that salaries associated with bachelor's degrees and beyond exceed those associated with lower, or no, degrees; those with a bachelor's degree earn more than those with an associate degree, those with some college but no degree, those with a high school diploma, and those with no high school diploma [44]. The BLS, however, failed to account for self-selection: that is, people who would earn higher salaries, absent a college degree, are the same people who are more likely to pursue and obtain a college degree in the first place. In such cases, it is not necessarily the college degree that results in higher salaries. In addition, Baum et al. find that college graduates earn more than those who never went to college (without specifically addressing self-selection) [43, 45]. Avery and Turner, however, studying college graduates from the first part of the 2000s, accounted for this self-selection issue and still found that the monetary benefits from a college degree exceeded its costs [39]. Moreover, data from the later 2000s and early 2010s (e.g., see [46]) further support the finding that the monetary benefits from a college degree exceed its costs (although it does not specifically account for self-selection).

Although most agree that a college degree is a good investment, there is not consensus on how much of a benefit, in terms of salary, college graduates receive. Avery and Turner provide the most rigorous and robust approach to answering this question (see Table 3) [39]. Table 3 presents their estimated earnings benefits of having a college degree over only a high school diploma. This difference is referred to as the college graduate "premium;" in 2010, it was $700,000 for men and $500,000 for women. Men who graduated from college had average lifetime earnings (net of tuition) of $1.5 million, whereas men who had only high school diplomas had average lifetime earnings of about $800,000. The corresponding numbers for women are $1.1 million and $600,000, respectively. College graduates, on average, have lifetime earnings that are nearly double those with only high school educations [39, 43, 45-46].

Table 3. Lifetime earnings (net of tuition) as of FY 2010, by gender and education[a]

Gender	High school diploma only	College degree	Premium
Men	$800,000	$1,500,000	$700,000
Women	$600,000	$1,100,000	$500,000

Source: [39].

[a.] This table presents the present discounted value (PDV) of lifetime earnings net of tuition as of FY 2010. PDV is the lifetime earnings discounted by an interest rate (in this case, 3 percent) [39].

The college graduate premium has the potential to rise above these levels. This is primarily because millennials (those born between 1980 and 2000) value education and higher levels of education more so than previous generations [41, 47]. Millennials represent not only the current cohort of new recruits and Servicemembers in the junior ranks (i.e., millennials are the current TA users) but also the past decade of college graduates. Millennials' greater demand for higher levels of education than previous generations has two implications: (1) more millennials are likely to have college diplomas, and (2) millennials are more likely to have graduate or professional degrees, which confer even larger earnings premiums [43, 45-46, 48]. As we discuss later, millenials' greater investments in higher education are not necessarily paying off, since recent college graduates have higher underemployment (they are in jobs that do not require college degrees). Although earnings differences between those with and without college degrees are already large, it is possible that this difference could increase over time as millennials' salaries continue to grow as they age into higher paying positions that more fully require and rely on the advanced higher education that they sought and acquired.

Higher employment

In addition to improved quality of life and greater earnings potential, college graduates also are more likely than nongraduates of college to be employed [43, 45-46]. On average, those with college degrees are four times more likely to be employed than their non-college-educated counterparts [44, 47]. According to the BLS, the unemployment rate of all college graduates in 2015 was 2.8 percent, compared with a national average of 4.3 percent [44].[17] The impact of a college diploma on employment likely operates through a number of channels. Minimally, college exposes students to more people, other students and/or alumni, providing them with a larger network that can assist in the job search process [39]. In addition, college graduates will likely hold jobs providing networks of more value than the student's previous network. As a result, college not only improves the *quantity* of a student's network, but also its *quality*. Finally, a college degree signals a higher level of aptitude and a host of other skills (e.g., self-discipline; the ability to set, work toward, and achieve long-term goals; the ability to function independently) [49-50]. This signaling ability is valued by employers, and can make college graduates valuable, even in jobs that do not specifically require the skills of a college graduate [51-54]. It is, therefore, not surprising that those with college diplomas have higher employment than those without.

[17] The unemployment rate for those with a bachelor's degree as their highest degree was 2.8 percent. It was 2.4 percent, 1.5 percent, and 1.7 percent for those with master's, professional, and doctoral degrees, respectively.

Potential costs of college attendance

Despite the benefits of a college degree, there are still instances when going to college is not worth the cost. For example, Kamenetz finds that, when students pick the "wrong" degree or the "wrong" college, the degree may fail to be worth its cost [40]. Whether a college degree will be monetarily worthwhile depends on the subsequent gains through better employment and higher earnings as well as the level of debt acquired to finance that college degree. Although the average earnings premium from a college degree is over half a million dollars, not all careers offer the same premium (or even require a degree). Furthermore, failing to obtain a diploma after taking on student debt is a principal reason why an attempted, but uncompleted, college degree may fail to be financially worthwhile.

An attempted college degree can fail to be financially worthwhile if it fails to generate sufficient income to justify the debt used to finance it. Thus, the reasons why pursuing a college degree may not be worthwhile can be split into those factors that affect income and those that affect debt. Income is primarily influenced by underemployment and nonattainments; those who complete their degrees but are underemployed will suffer an income reduction, as will those who fail to complete their college degrees. In terms of debt, what is most important is whether the debt was excessive—that is, debt that makes a college education no longer financially worthwhile. We now discuss the potential costs from going to college in more detail, focusing specifically on underemployment, nonattainments, and excessive debt.

Underemployment

Underemployment pertains to those who are employed and have higher levels of education than their jobs require. Underemployed college graduates do not receive the full earnings benefit of their college degrees. Underemployment occurs when someone with, for example, a bachelor's degree is filling a job that only requires a high school diploma [51-54]. Their earnings will more closely resemble those of high school graduates. Compounding this, the underemployed, on average, likely will still have all of the debt associated with their degrees.

Although college graduates have lower unemployment rates, the *under*employment rate for *recent* college graduates was nearly 45 percent, as of December 2015, implying that these people are in jobs that do not specifically require college degrees [54]. Moreover, this 45-percent underemployment rate implies that 45 percent of college graduates (in December 2015) were not receiving the earnings premium associated with their degrees. These college graduates have acquired the debt associated with their degrees but no additional earnings to pay off that debt. When compared with those who did not attempt college (and took on no debt), on average,

underemployed college graduates are likely in worse financial straits. The risk of underemployment, therefore, potentially creates scenarios in which the costs from acquiring a college degree outweigh the benefits. Although little evidence exists for TA and MyCAA users, a recent study found that almost one-third (29 percent) of military spouses were working part-time because they could not find full-time work [18].

Nonattainments

Attending college without completing a degree also can have negative consequences because nonattainers pay for the attended courses but do not receive the signaling benefits of a college degree. Of those who were college freshmen in FY 2006, only 59 percent had earned a four-year college degree by FY 2012 [40]. Only 61 percent of full-time students seeking a bachelor's degree obtain one within eight years [55]. In addition, only 24 percent of part-time students seeking a bachelor's degree obtain one within eight years [55]. TA users are more likely to be part-time students; as a result, the 76-percent nonattainment rate (100 minus 24) is more applicable for TA users (as opposed to the 39-percent nonattainment rate for full-time students). In the civilian sector, these college nonattainers often have college debt levels similar to those who graduate [39].[18] To compound the issue, nonattainers begin repaying their student loans earlier than college graduates because loan repayment is typically required once enrollment is terminated. This could be problematic, especially since nonattainers are less likely to be employed and tend to earn less than those with associate degrees [39-40, 44]. In fact, those with two years of college and an associate degree earn more, on average, than those with three and a half years of college but no degree [39-40, 44]. For many nonattainers, therefore, the benefits of going to college will not outweigh the costs [39-40, 56-57].

Excessive debt

Although obtaining a college degree, on average, is worth its cost, some people take on more debt than their future incomes will warrant. Student debt, unlike other forms of debt, is permanent: it is exempt from bankruptcy proceedings [39]. The average college graduate, given that loans were taken out, has $33,000 in student loans [52].[19] This debt is intended to be paid off through higher earnings normally

[18] College graduates at public and private universities have, on average, $15,811 in debt, while students at public and private universities have, on average, $14,156 in debt [39]. We provide more information on debt levels in the next section and again in Table 4.

[19] Specifically, this mean excludes those college students who never take out a loan to finance their college degrees.

associated with a college degree; however, not all graduates are able to earn enough to financially justify the debt acquired to obtain their degrees. In a February 2014 letter to the U.S. Secretary of Education, the Association of Private Sector Colleges and Universities pointed out that 26 percent of public graduates and 39 percent of private (not-for-profit) graduates were not "gainfully employed" or in a position to pay off their debt [40, 51]. As we later discuss, student debt from for-profit institutions has received increased attention, but this statistic suggests that debt is a significant problem across all education sectors.

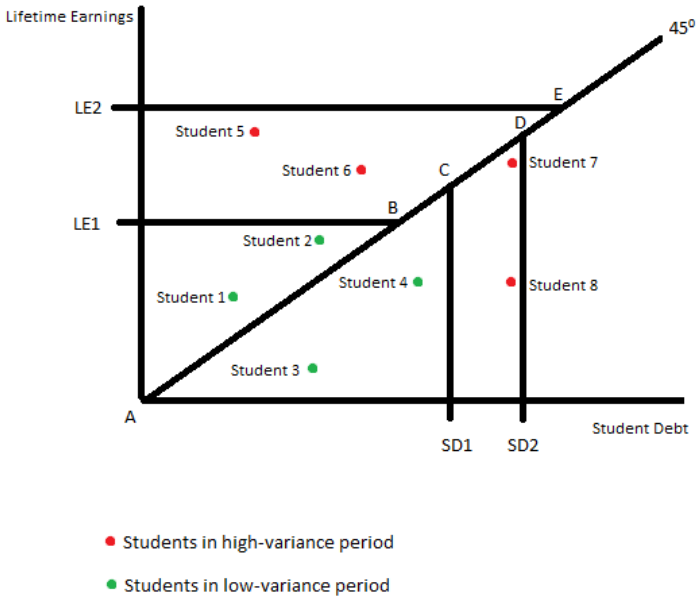
The decisions made as a result of having permanent, bankruptcy-exempt debt can be worse than the debt alone—they affect a multitude of other dimensions of well-being. Higher student debt makes people more likely to choose lower paying careers, perhaps out of a need to repay their student loans, allowing less time to search for better paying careers [39]. In 2009, at the height of the Great Recession, 85 percent of college seniors planned to move back home after graduation because of difficulty in finding employment that paid enough for them to afford student loan and rent payments simultaneously [39]. In addition to affecting career choices and earnings, student debt also affects marital decisions; an increase in student debt of $10,000 decreases the long-term probability of marriage by 7 percentage points [39]. Not surprisingly, college debt has a large negative relationship with qualitative outcomes as well: only 2 percent in the modal borrowing range ($20,000 to $30,000) report "thriving in all aspects of life" as compared with 11 percent across all college graduates [58]. Some students may develop mitigation strategies, such as part-time work during college attendance, to reduce the need to borrow. However, these mitigation strategies may fail to help solve the problem of debt. There is evidence that those who engage in part-time work (perhaps due to already large debt) suffer in terms of academic performance and, subsequently, graduation rates [39].

Since the 1960s, the variance in college graduates' earnings has increased, as has the variance in college debt. Since the variance of both earnings and debt has increased, college has become more financially worthwhile for some (due to relatively higher earnings) while no longer financially worthwhile for others (due to relatively higher debt). That is, although the earnings potential of college graduates has increased, so has the probability that a college degree will not be worth the (now higher) cost. For those who become underemployed, do not complete their degrees, or take on too much debt relative to their future incomes, college can prove to be a poor investment.

In Figure 1, we highlight why the increased variance in both college graduates' earnings and college debt levels has made college *more* financially worthwhile for some but no longer financially worthwhile for others. We assume that a student derives increased utility (or well-being) if, when attending college, she increases her lifetime earnings by more than the debt she incurs to attend college (meaning that she is on the part of Figure 1 to the left of the 45-degree line). The figure presents

two alternate situations: one high-variance (red dots) and one low-variance (green dots). Note that the green dots are closer to the point A than are the red dots—meaning that the green dots represent a scenario of lower variance.

Figure 1. Illustrated implications of increased variance in college graduates' earnings and debt levels



Now, assume that a student in time period 1 receives an increase in lifetime earnings between A (or zero) and LE1 if he chooses to go to college, and his level of student debt increases from A (or zero) to SD1. Students 1 and 2 are better off for attending college because the amount of increased lifetime earnings exceeds the amount of debt they incur (that is, they are above the 45-degree line). Students 3 and 4, however, are worse off because the amount of debt they incur when attending college exceeds their increased lifetime earnings. This is the low-variance situation.

Now, we assume increased variance in both earnings and debt levels. That is, we assume that students attending college in time period 2 receive an increased lifetime earnings between A and LE2 and incur student debt between A and SD2. In other words, the levels of variability in increased lifetime earnings and student debt are higher in time period 2 than they were in time period 1. In this scenario, students 5 and 6 are better off for attending college because the amount of increased lifetime

earnings exceeds the amount of debt they incur. In fact, student 5 and 6 are better off than both students 1 and 2, as demonstrated by comparing the vertical distance between these points on the graph and the 45-degree line. Therefore, having a higher degree of variability in both lifetime earnings and student debt could potentially work to the advantage of some students. Student 5, for example, not only receives an earnings increase greater than what was possible in the first time period, she also ends up with an earnings-to-debt ratio noticeably larger than was previously possible.

In contrast, students 7 and 8 are worse off for attending college because the amount of debt they incur exceeds their increased lifetime earnings. Furthermore, even though it appears that students 4 and 8 receive the same amount of increased lifetime earnings for attending college, student 8 is worse off than student 4 because student 8 incurs more student debt than was even possible in time period 1. Therefore, having a higher degree of variability in increased lifetime earnings and student debt could potentially make students worse off if they fall on the high end of the debt distribution and on the low end of the increased income distribution.

Students' Experiences and Outcomes

A college education can confer substantial benefits, but, in the absence of a degree (i.e., graduating), those benefits may fail to outweigh the costs. In this section, we explore how graduation probabilities vary by education sector, along with students' other experiences and outcomes. We do this in an effort to understand the likely educational and financial outcomes for TA and MyCAA users. Unfortunately, there is no known literature examining these outcomes for Servicemembers and their spouses specifically. Thus, as a second best, we rely on recent literature regarding the experiences of *non*-military students to inform what we might expect regarding outcomes of TA and MyCAA users.

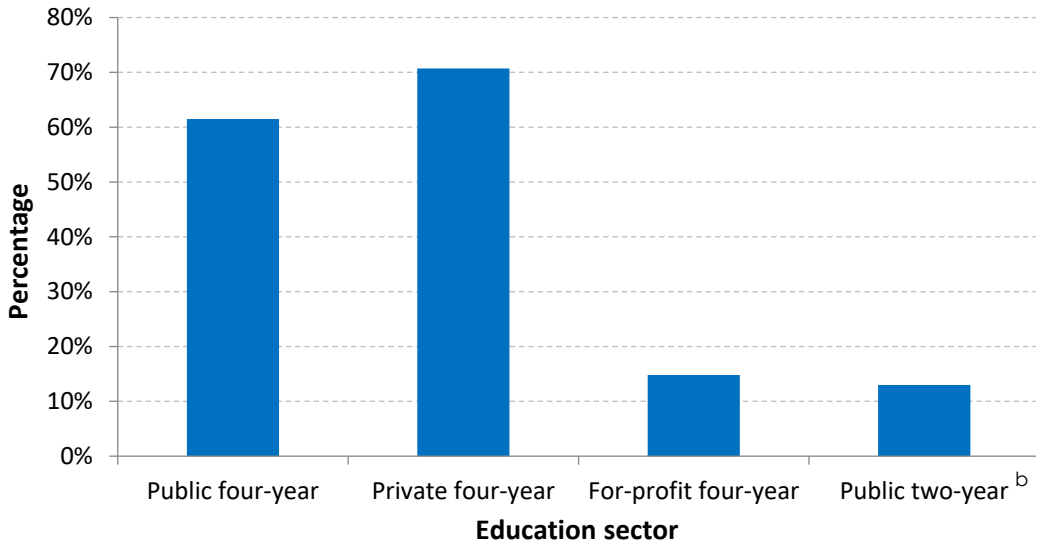
The existing literature is largely focused on outcomes for traditional students, defined as those who attend college full-time, in-person, while living on campus, and tend to enroll for the first time before age 20. TA users, however, are a type of nontraditional student. They are enrolled part-time, are frequently distance learners, and are serving full-time on active duty while going to college. To make the literature's findings relevant to this population, we discuss, where possible, the outcomes of nontraditional students and how they compare with traditional students. We focus on graduation rates, tuition, student debt levels, and default rates—giving particular attention to how each varies by education sector.

Graduation rates

Most people go to college with one main intention: to graduate. Actual graduation rates, however, vary by education sector, as shown in Figure 2. Private (four-year) institutions have the highest graduation rates, at 70.7 percent, followed by public (four-year) institutions, at 61.5 percent. In stark contrast to the graduation rates (i.e., the probability of obtaining a bachelor's degree) at traditional institutions are those at for-profit institutions. These graduation rates are much lower—14.8 percent—which is only 1.8 percentage points higher than graduation rates for those who transfer from public, two-year institutions [39]. Note that these graduation rates are simply that—average rates—and do not account for any differences in the characteristics of students attending these different institutions. If, for example, the

students who attend private for-profit, four-year or public two-year institutions are from different socioeconomic backgrounds, are more likely to be enrolled part-time, are more likely to take courses online, or are less academically prepared for college, this could partially explain the graduation rate differences highlighted in Figure 2.

Figure 2. Bachelor's degree graduation rates, by education sector, FY 2009[a]



Source: [39]. The rates do not account for demographic differences in students.

a. These values refer to the mean graduation rate of those who begin at two-year institutions and then transfer to four-year institutions.

b. FY 2009 is the most recent year for which graduation rates have been calculated by existing work. The underlying source of these data, the Integrated Postsecondary Education Data System (IPEDS), currently has data through FY 2012 (although no academic studies have yet been published with the newer data).

Students in the for-profit sector are nearly five times less likely to graduate than their not-for-profit-sector counterparts. For example, one notable private for-profit institution has a six-year graduation rate of 9 percent [56].[20] Rates of withdrawal (failure to complete within a term and subsequently dropping out) in the private for-profit sector exceed 54 percent [56]. These higher withdrawal rates can contribute to private for-profits' lower graduation rates (because students would need to reenroll).

[20] Not all of these students have the intention to graduate with a bachelor's degree. These students (while pursuing their academic goals) lower the observed graduation rate, but not the true graduation rate (i.e., of those who intended to obtain a bachelor's degree).

Although private for-profits and two-year institutions have much lower graduation rates than public and private not-for-profit institutions, the implications for TA and MyCAA users remain unclear. We can, however, infer information on TA and MyCAA users' graduation rates given the experiences of other, similar students. First, TA users are more likely to enroll part-time. Part-time students are 2.5 times less likely than full-time students to receive their bachelor's degrees after eight years [55].[21] Second, military Servicemembers are much more likely than the general population to be racial/ethnic minorities [59]. Steele et al. find that minority students, regardless of whether full- or part-time, are 1.4 times less likely to receive their bachelor's degrees after eight years than the population of all students [55].[22] Third, due to their time in service and TA requirements, TA users are more likely to be older when they first attend college. In addition, older students (those over age 25 at first enrollment) are 2.3 percent less likely to graduate than are all students [55].[23] Finally, students at open enrollment (e.g., for-profit and public two-year) institutions are less likely to graduate (compared with students at selective institutions) [60]. Thus, given the lower graduation rates observed for part-time students, minorities, older students, and those at open enrollment institutions, we expect that TA and MyCAA users (who are more likely to attend open enrollment institutions) will have lower graduation rates than those presented in Figure 2. In the empirical phase of our study, we will specifically examine this hypothesis.

Tuition and the cost of college

Graduating with a bachelor's (or other) degree requires paying several years of tuition. Tuition in all education sectors has been increasing faster than inflation since the 1960s [61]. Not surprisingly, rising tuition often decreases potential students' likelihood of enrollment. For example, in the 1990s and early 2000s, there were both tuition increases and declines in enrollment at public institutions [37, 62]. In addition, when public tuition increases, students may become more likely to enroll in

[21] The percentages of students who receive their bachelor's degrees within eight years are 60.6 percent of full-time students, compared with only 24.3 percent of part-time students [55].

[22] The percentages of minority students who receive their bachelor's degrees within eight years follow: 39.9 percent of full-time black students, 14.5 percent of part-time black students, 46.5 percent of full-time Hispanic students, and 16.7 percent of part-time Hispanic students [55]. This is compared with 60.6 percent of all full-time students who received their bachelor's degree within eight years [55].

[23] Compared with 27.0 percent of full-time older students and 10.6 percent of part-time older students who receive their bachelor's degrees within eight years [55], 60.6 percent of all full-time students receive their bachelor's degree within eight years [55].

private or for-profit institutions. That is, four-year institutions in different education sectors can be substitutes: as tuition rises in one sector, students may become more likely to enroll at an institution in a different sector [37, 62].[24] Thus, although some potential students decide not to attend college in response to tuition increases, others decide to attend institutions in different education sectors. Given the previously discussed variation in graduation rates across sectors, such substitution of one education sector for another will affect students' graduation probabilities.

With tuition rising, it is important to determine *which* potential civilian-sector students are no longer enrolling in college. Students who demographically resemble TA users are less likely to enroll in college when cost rises. Community college students, for example, are more sensitive to tuition changes than are students at four-year institutions [62]. In terms of race/ethnicity, whites are the least responsive to price changes, followed by blacks, Hispanics, and Asians [62]. There has been less responsiveness to price hikes recently because the benefits of college attendance also have been increasing [62]. TA users likely have little responsiveness to price changes since many institutions waive tuition charges in excess of the $250 per credit hour reimbursement.

Given that different populations of potential students respond to tuition changes differently, it is important to understand how tuition varies across education sectors. Table 4 presents the mean annual tuition across education sectors for FY 2009. Among four-year institutions, public institutions are the least expensive ($6,312 per year, on average), followed by private for-profit institutions ($14,423), and the most expensive advertised tuition is at private not-for-profit institutions ($24,636). The cheapest overall path to a bachelor's degree is likely through public two-year institutions, which require an average tuition of only $2,136 for the first two years.

There is a caveat, however, to the tuitions presented in Table 4: often, what students pay will differ from an institution's advertised tuition. For example, 89 percent of first-time, full-year college freshmen at private, four-year institutions received some kind of financial aid or tuition discount in FY 2014 [63]. Of these students, the average discount they received is estimated to have covered half of their total attendance cost [63]. Thus, a student facing an advertised tuition of $50,000 per year may have, in fact, only paid $25,000. Similarly, many institutions waive military TA costs that exceed the $250 per semester hour threshold. Tuition discounting highlights the opaqueness of the cost of attending college: the true (out-of-pocket) cost of tuition is often unknown. This further implies that the tuition for some types of institutions in Table 4 (particularly private not-for-profit ones) is likely overstated.

[24] We later discuss why even though, on average, public institutions are less expensive than private institutions, students may qualify for subsidized tuition at private institutions.

Table 4. Enrollments, debt, tuition, and graduation rates, by education sector, FY 2009[a]

	Education sector			
	Public four-year	**Private not-for-profit four-year**	**Private for-profit four-year**	**Public two-year**
Median enrollments	7,415	1,149	172	3,713
Mean graduate debt	$12,922	$18,700	$45,042	$15,960[b]
Mean annual tuition	$6,312	$24,636	$14,423	$2,136

Source: Mean graduate debt is obtained from [39]. Median enrollments are obtained from [57]. Mean annual tuition is obtained from [64].

a. FY 2009 is the most recent year for which graduation rates and graduate debt have been calculated by existing work. The underlying source of these data, IPEDS, currently has data through FY 2012 (although no academic studies have yet been published with the newer data).

b. This is the mean debt of those who begin at two-year institutions and then transfer to and graduate from four-year institutions.

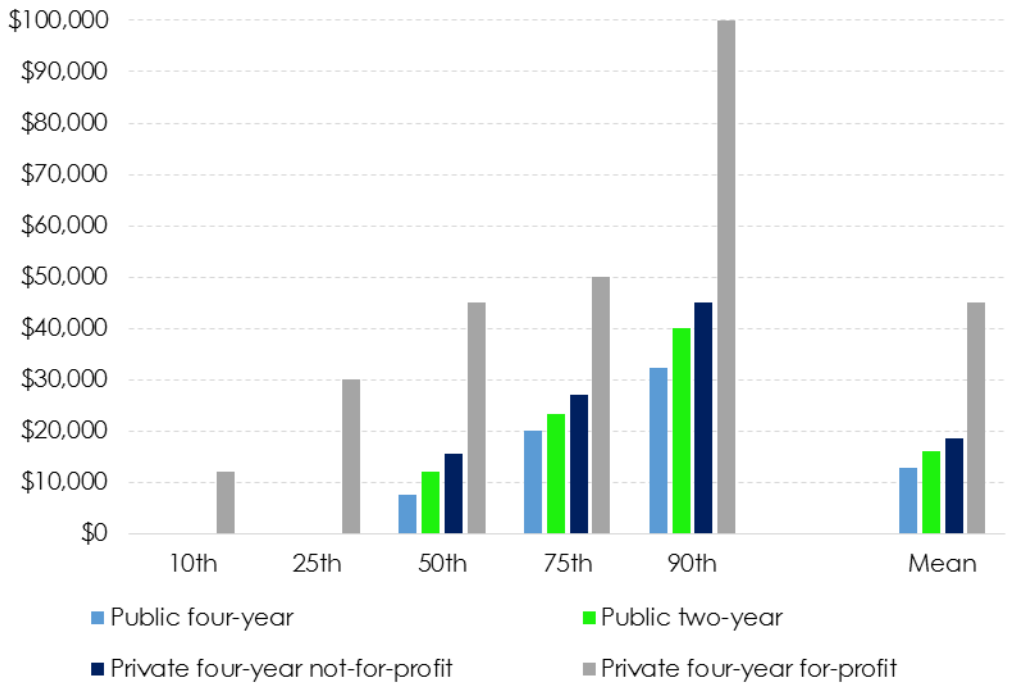
Student debt

College tuition is increasingly financed through student debt [39, 62, 65]. It is no surprise that, as college costs have risen, debt among college graduates also has grown [64]. Total national student debt is now $1.2 trillion, and average individual student debt is $33,000 [52]. Student loans have become a new reality of higher education.

Although borrowing has become increasingly common in higher education, not all education sectors are equivalent in terms of debt accrual. Table 4 presents average debt levels by education sector. Average debt levels for graduates range from $12,922 for public, four-year institutions to $45,042 for students at private for-profit, four-year institutions. However, average debt levels can be misleading. A more complete picture of debt levels can be obtained by exploring the *distribution* of debt levels, as shown in Figure 3. Those who graduate from public, four-year institutions do so with the least debt; 50 percent graduate with $7,500 or less in debt, and the average graduate has $18,700 in debt. The higher debt at private institutions is likely attributable to the higher tuition at these institutions [39].[25]

[25] The fact that half of students at public and private not-for-profit four-year institutions exit with considerably less debt than the average student at private for-profit institutions indicates that there are some students who exit with considerably more debt than most. This is especially prevalent at public four-year institutions.

Figure 3. Debt distribution for bachelor's recipients (selected percentiles and mean), by education sector[a]



Source: [39].

a. These data are for students who first entered college in the 2003-2004 academic year; these are their debt measures six years after entering college. The 10th and 25th percentiles of the debt distribution are $0 for all institution types except private for-profits.

b. These values represent the debt levels for those students who began at two-year institutions and then transferred to and graduated from four-year institutions.

The most striking feature of Figure 3 is the noticeably higher debt levels of private for-profit graduates. Students at private for-profit institutions have more financial debt on average (and across the distribution) than those who graduate from traditional institutions (holding their employment and earnings prospects constant) [39].[26] This is in large part because "students at for-profit institutions are the most likely to borrow," with 88 percent of the students of private for-profits taking out a

[26] In some cases, private for-profit students are worse off in terms of debt and default risk than those who never pursued a college degree.

loan to cover their tuition [39, p.171]. As Figure 3 shows, students who attend private for-profit institutions have a disproportionate amount of student debt: on average and across the distribution, students at private for-profits have at least twice the debt of other students. In addition to receiving over 50 percent of TA funds (as shown previously in Figure 3), private for-profit institutions, in total, have received 36.5 percent of Post-9/11 GI Bill funds, despite only enrolling 8 to 12 percent of the entire market [57]. Although, on average, college students from every sector graduate with debt, there are some who manage to graduate without any debt, and even fewer manage to do so at private for-profit institutions [39]. Those graduating from private for-profits in the 10th percentile (i.e., the 10 percent with the least amount of debt) graduate with an average of $12,000 in debt; the 25th percentile is $30,000 in debt. For all other paths to a bachelor's degree (four-year public, four-year private not-for-profit, or two-year public), these percentiles (10th and 25th) have zero debt. That is, at least 25 percent of college graduates who do not begin at a private for-profit institution graduate with no debt [39]. One study concludes that students in the private for-profit sector are "systemically borrowing too much" [39, p.187].

Although student debt has been increasing, Avery and Turner suggest that "the claim that student borrowing is 'too high' across the board can—with the possible exception of private for-profit colleges—clearly be rejected" [39, p.189]. This is largely due to the increased value of being a college graduate through the increased probability of employment *and* increased earnings, allowing graduates to pay off their debts more quickly.

Loan defaults

It has become increasingly common for college students to take on debt to finance their educations. When students finish (or drop out of) college, they must repay that debt because it is exempt from bankruptcy protections. Some, however, will be unable to pay off their student loan debt and will, correspondingly, default. Default rates vary considerably by education sector and are shown in Table 5. Two default rate measures are shown: any defaults within two years and any defaults within three years. We present both because, before FY 2012, Title IV eligibility (an institution's ability to accept federal student loan monies) was determined using a two-year default period [57]. In FY 2012, the time period considered for defaults was increased to three years. The threshold for Title IV eligibility is a default rate below 25 percent. That is, institutions that have a default rate of 25 percent or higher (as of FY 2012) for three consecutive years lose their Title IV eligibility and can no longer accept federal student loan monies. As Table 5 reveals, private not-for-profit institutions have the lowest default rates, at 4.0 percent within two years (and 7.6 percent within three years). Public institutions have slightly higher default rates, at 6.0 percent within two years (and 10.8 percent within three years).

Table 5. Two-year and three-year student loan default rates, by education sector (FY 2008)[a]

Any defaults within ...	Public	Private not-for-profit	Private for-profit
Two years	6.0%	4.0%	11.6%
Three years[b]	10.8%	7.6%	24.9%

Source: [57].

a. For Title IV eligibility (i.e., the ability to receive federal student loans), an institution may not have a default rate that is 25 percent or more for three consecutive years or 40 percent in a single year.

b. Before FY 2012, default rates were tracked within a two-year window for each graduating cohort. Beginning in FY 2012, a three-year default window became the standard for Title IV eligibility.

Default rates at private for-profit institutions are considerably higher. Given these students' debt burdens, it is not surprising that private for-profit students also are more likely to default. As Table 5 shows, students in the private for-profit sector are nearly twice as likely to default within two years as those in the public sector, and nearly three times as likely to default within two years as those in the private not-for-profit sector. In addition, the three-year default rate at private for-profits is more than double the two-year default rate.

For the entire private for-profit sector, the average default rate across all institutions is only one-tenth of a percentage point below the cut-off for Title IV eligibility. This is more than double the three-year default risk of public-sector students and more than triple the three-year default risk of private not-for-profit students. Student loan defaults at private for-profit institutions represent nearly half of all defaults, despite representing only 11 percent of enrollments [57]. In addition, students in the private for-profit sector have been found to have additional debt, lower employment rates, and less income—all factors that likely contribute to their higher default rates [66]. Students in the private for-profit sector are left in a precarious financial situation: they have substantial debt and default rates that are just below the federally mandated cutoff.

Although this section has focused on traditional students due to limitations in the available literature, it still informs the likely outcomes and experiences of TA and MyCAA users. We anticipate that graduation rates for TA users at public and private not-for-profit four-year institutions will be higher than those of TA users at private for-profit four-year or public two-year institutions. We expect that student debt will be lowest for TA users at public institutions because of those institutions' lower tuition costs. Accordingly, we expect student debt to be highest for TA users at private for-profit institutions, which have higher tuitions, although the degree to which institutions choose to reduce costs that exceed TA limits also could be a

factor. Where debt levels are higher, so too are default rates, particularly at private for-profits. Private for-profit institutions now represent the majority of TA use.[27]

Private for-profit students who are *not* TA or MyCAA users have worse experiences and outcomes than students in other education sectors. Although it is unclear whether these worse experiences and outcomes also will be experienced by TA users, this may be the case. In the next section, we take a closer look at private for-profit institutions and the potential implications of their increased popularity among TA and MyCAA users.

[27] Unfortunately, because of data availability issues, we will be unable to examine TA or MyCAA users' levels of indebtedness or default rates as part of this study.

Private For-Profit Institutions and Their Students

Nontraditional students (i.e., those not attending full-time at residential campuses) represent a growing share of college students, especially at private for-profit institutions. It has been estimated that 75 percent of all college students are now nontraditional [55]. Nontraditional students can be part-time students, have full-time jobs, commute, be parents, be veterans, or be active-duty Servicemembers (such as most TA users). Each of these scenarios adds a dimension of difficulty in pursuing a college education. Many private for-profit institutions have tailored themselves to accommodate this growing college population and its diverse needs [67-68]. In particular, private for-profit students have reported the following advantages: caring instructors, small classes, and efficient programs [69-70]. In addition, in a survey by Public Agenda, nearly all surveyed undergraduates received guidance and support, and 83 percent received help with financial aid applications [69-70]. For these reasons, among others, nontraditional students, such as veterans and TA-users, have sought out private for-profits for their college educations.

Military students find two aspects of private for-profits especially appealing: distance learning and flexible scheduling. First, private for-profit institutions offer the greatest opportunities for distance learning. In 2009, private for-profits accounted for 35.2 percent of distance-learning degree programs [71] but only 17 percent of the higher education market at large [32]. As of 2012, 2.6 million students, across all education sectors, were enrolled in fully online degree programs. Of those students, 900,000 were enrolled at private for-profit institutions [72].[28] Second, the structure of private for-profit degree programs makes it easier to work full-time and be a full-time student. For example, unique course schedules allow students to attend classes only once a week and maintain full-time enrollment. Students at private for-profits also give their institutions "high marks" for scheduling flexibility [66, 69]. Of particular relevance to TA and MyCAA users is the fact that private for-profits enable students to attend the same institution in multiple states through distance learning

[28] Public two-year institutions had the second highest enrollments in fully online degree programs, with 675,000 students enrolled [72].

and to take the courses they need when they need them through flexible scheduling [67-68].

Despite some veterans' and nontraditional students' preference for private for-profit institutions, negative perceptions about them persist. However, it is unclear whether these perceptions are due to the private for-profit institutions' poor quality or to the types of students that attend them. The remainder of this section discusses these two points in further detail in an effort to provide a balanced picture of private for-profit institutions.

Negative perceptions

Private for-profit higher education institutions represent approximately one-sixth of all enrollments but nearly half of all TA enrollments [31-32]. Moreover, private for-profit institutions have grown rapidly in the military education market and are now among the most popular institutions (see, for example, Table 1 or [35]). This has raised questions about the quality of Servicemembers' educations. Private for-profit institutions have had a bad reputation across a broad spectrum of entities, including the following:

- The (traditional) academic higher education community[29]
- The U.S. Senate, which criticized private for-profit institutions as largely negative and as the unintended beneficiaries of newly generous GI Bill benefits [9]
- Prospective employers, who still hesitate to hire private for-profit graduates and prefer to hire people from "reputable" schools [69]
- The popular media, which often classifies private for-profits as "diploma mills" that are not concerned with their students' outcomes [56-57, 75-77]
- The alumni of private for-profit institutions who question whether their degrees (and debt) were worthwhile [66, 69]

These pervasive negative perceptions have no doubt led to the considerable recent attention devoted to private for-profit institutions.

[29] For example, the top three hits from a search of the term "for-profit" at *The Chronicle for Higher Education* are (1) "Who Goes to For-Profit Colleges?" (2) "Undercover Probe Finds Lax Academic Standards at Some For-Profit Colleges," and (3) "For-Profit Colleges' Dubious Statistics" [73]. And while the title for (1) sounds innocuous enough, it describes how low-income and low-quality students are specifically targeted by private for-profit institutions [74].

Private for-profits are coming under increased scrutiny, regulation, and legal action because of the concerns over their students' outcomes. State attorneys general, the Federal Trade Commission, and the U.S. Senate all have recently launched campaigns against the private for-profit higher education industry [9, 78-79]. These efforts emerged from reports that the recruiting practices of private for-profits are "aggressive and predatory," including recruiting techniques self-dubbed the "pain funnel," in which potential students are disparaged until they decide to enroll [76, 78-79]. Additional reports have indicated that recruiters intentionally hide the true cost of attendance [76]. For example, Public Agenda (a nonpartisan, non-profit research company) recently found that 61 percent of private for-profit students are unaware of the average level of debt with which students graduate [70, 78].

This increased legal attention has led to one major private for-profit institution closing almost all of its schools nationwide amid allegations of fraudulent recruiting practices, targeting (vulnerable) Servicemembers, and altering grades [80-81]. There has been special concern for veterans and Servicemembers attending private for-profit institutions because "veterans are being aggressively recruited by enrollment counselors, a.k.a. recruiters, employed by for-profit colleges who want a slice of the G.I. Bill pie, but are not all upfront about [their school's failure to meet] accreditation requirements, degree programs [not recognized by employers], career placement, and costs" [76]. Therefore, students at private for-profit institutions, including veterans and TA users, have an information disadvantage [69, 76, 78]. Private for-profit institutions know much more about themselves (e.g., average debt and graduation rates) than do prospective students. Some private for-profit institutions have used this informational disadvantage to the detriment of their Servicemember and civilian students—sometimes leading students to enroll without complete knowledge of the school's average debt or graduation rates [69, 76, 78]. The legal attention surrounding private for-profit institutions and the allegations about targeting Servicemembers have warranted examination of their student outcomes.

Avery and Turner characterize the empirical literature's findings regarding these student outcomes as follows:

> Those who begin their studies at…for-profit colleges have particularly low college completion rates and are unlikely to realize substantial earnings gains associated with degree completion. For students at for-profit institutions, the consequences of weak outcomes are compounded by high levels of borrowing; not surprisingly, these students are unusually likely to default on loans. [39, p.188]

Students at private for-profits fare worse than students at other institutions. Given these findings, it is not surprising that private for-profit students also have poorer qualitative outcomes and are more likely to doubt the merits of their education. For example, students at private for-profits are less likely to believe that their degrees were worth the cost and have lower opinions of the educations they received while in

school [40, 57]. Public Agenda found similar results in its nationwide survey of prospective students, current students, alumni, and employers (1,950 people in total) regarding their perceptions of private for-profit and other higher education institutions [70]. The survey found that students at private for-profits are less likely than students at traditional institutions to think the monetary investment (borrowing) was worth it—nearly two-thirds reported that the cost either "really wasn't worth it" or "remains to be seen" [70]. Deming and coauthors had similar findings based on the 2004/2009 Beginning Postsecondary Students Longitudinal Study, which has been commonly used to compare the outcomes of private for-profit students with those at traditional institutions [57]. Although a majority of students at private for-profit institutions report that they are "satisfied," the proportion indicating satisfaction is significantly smaller than among students graduating from traditional institutions [70]. Of particular note is that community college students (who are considered similar to students at private for-profit institutions) were equally satisfied, but less concerned about cost [69]. All of these aforementioned reports suggest that students at private for-profit institutions have worse quantitative and qualitative outcomes than students at other institutions.

Despite recent legal action and being perceived negatively by numerous entities, the research is still unclear about whether private for-profit institutions are the *cause* of their students' inferior outcomes or if these students would have had similarly poor outcomes at traditional institutions.

Causal attribution to private for-profits?

In the previous subsection, we established that nontraditional students (including TA users and other military students) have poorer outcomes than traditional students. For example, part-time students (a type of nontraditional student) are nearly one-third less likely than their traditional counterparts to graduate with a bachelor's degree after eight years [55]. In addition, nontraditional students make up a greater percentage of the student population of private for-profit than private not-for-profit institutions. These facts make it difficult to distinguish whether poorer outcomes experienced by students at private for-profits are the result of institutional quality or student quality.

Since students who attend private for-profits are inherently different from those in other education sectors, the outcomes associated with private for-profits cannot be causally attributed to the schools themselves. That is, we cannot conclude from the existing research that private for-profit institutions are responsible for the negative outcomes associated with their students and graduates. Students who enroll at private for-profit institutions are, at the time of enrollment, typically less academically prepared for college and have fewer financial resources than their counterparts at other institutions [66, 70, 78, 82]. This is, in part, because private for-

profits generally have open enrollment. Students at nonselective institutions are less likely to graduate than are students at institutions with varying degrees of selectivity [60]. Hence, poorer outcomes and greater debt could be attributable to these students' characteristics and *not* to the private for-profit institutions themselves. These students could have had the same outcomes if they had enrolled in traditional institutions. The lack of comparable students across four-year institutions in the educational sectors (let alone sufficient, appropriate, and accessible data) makes it difficult to causally attribute the negative outcomes of private for-profits' students to the institutions themselves. Despite this, TA and MyCAA users offer a unique opportunity to do so, which the empirical complement to this literature review hopes to exploit.

Although the students at private for-profit institutions are typically not comparable to the students at public and private not-for-profit four-year institutions, these students are comparable to students at community colleges. Despite the similarities between private for-profit and community college students, students at private for-profits are 18 percentage points less likely than their community college counterparts to take remedial coursework [57]. This suggests two possibilities: (1) private for-profit students do not need remedial coursework or (2) private for-profit institutions are not providing remedial coursework that is needed. These possibilities imply a contradiction regarding whether private for-profit students are truly less academically prepared at the time of enrollment. On one hand, if students do not need remedial coursework, they must not be less academically prepared than other students, as some private for-profits claim. On the other hand, if private for-profit institutions are failing to provide their admittedly less academically prepared students with necessary remedial coursework, they are, in part, responsible for their students' poorer outcomes. In both cases, private for-profits can be considered at least partially responsible for the poorer outcomes of their students as compared with the students at public and private not-for-profit four-year institutions.

It may be the case, however, that private for-profit institutions are serving two distinct populations—those who are less academically prepared for college (and are, thus, attracted to these institutions' open enrollment policies) and those who find the online and flexible coursework that these institutions offer to be attractive. As such, it is possible that outcomes for military-connected students at private for-profit institutions will differ from those found in the existing literature.

Conclusion

In this report, we have reviewed literature that can help inform how individual Servicemembers (and their spouses) benefit from TA (and MyCAA). Unfortunately, there is no prior work addressing this specific question. As such, we consult the most relevant literature that *does* exist—literature examining how college students, in general, benefit from their college educations and degrees. We suspect that these general benefits will apply to TA and MyCAA users in some, but not all, situations. This is because TA and MyCAA users are nontraditional students: they are likely to attend part-time and be distance learners. Therefore, to the extent available, we also consult the existing literature on the outcomes of nontraditional students. Admittedly, this literature is limited since most studies focus on outcomes for traditional students. Our incorporation of literature (and lessons learned) from nontraditional students, when possible, helps to provide a better sense of how TA and MyCAA users are likely to benefit from participation in these programs.

In our attempt to determine how Servicemembers (and their spouses) will benefit from the TA (and MyCAA) programs, we have used the existing literature to inform the following questions:

- Is college *worth* it? Are there situations in which college fails to be *worth* it?
- What benefits can TA users expect to get out of a college education or degree?
- Half of TA funds are spent at private for-profits. What are the implications of this for TA users?
- Do the poorer outcomes associated with private for-profit students apply to TA users?

For many traditional college students, attending college *is* worth it. That is, the (monetary) benefits of college exceed its costs. College offers a broad range of benefits. Some of these benefits are conferred through attendance. TA-users, for example, can expect a more successful transition to civilian life. Other benefits (e.g., increased earnings and improved employment prospects) can only be reaped with a degree. Despite these benefits, there are still instances when going to college will fail to be worth it; this is determined primarily by future income and the amount of debt accrued to finance that education. Underemployment (i.e., college graduates taking jobs that do not fully use their degrees) and nonattainments (i.e., students failing to

obtain degrees) are the primary reasons why future income may be insufficient to make college worthwhile. Conversely, student debt, which is permanent and exempt from bankruptcy, makes college not worthwhile when the amount of student debt accrued is sufficiently large (relative to future income). As a result, it cannot be universally concluded from the existing literature that attending college is worthwhile. Specifically, for those who take on too much debt, fail to receive a degree, or take a job below their ability levels, college will fail to be financially worthwhile. For most, college is financially worthwhile because of increased earnings potential.

The typical quantitative benefits of a college degree will not directly apply to TA users while they are still serving. That is, Servicemembers already have jobs, and will correspondingly not benefit from a decreased likelihood of unemployment. In addition, military pay is predetermined, so Servicemembers will not experience the earnings growth from college degrees at the same rate as their civilian counterparts. The one exception is that, to the extent that a college degree increases competitiveness for promotion, a college degree could lead to greater military pay [21]. Once separated from the military, however, Servicemembers who have used TA to obtain a college degree are more likely to benefit from the increased earnings and lower unemployment likelihood associated with their degrees.

A college education also may fail to be worthwhile if that education is pursued at a private for-profit institution. Students at private for-profits fare worse than students in other education sectors. For example, students in the private for-profit sector are nearly five times less likely than other students to graduate, and they have substantially more debt than others. Correspondingly, private for-profit institutions' students are substantially more likely to default on that debt. In addition, other military students (i.e., veterans) have had worse outcomes at private for-profits (e.g., lower graduation rates). It is unclear if this applies to TA and MyCAA users, although it seems likely we can expect them to have similarly dismal outcomes.

Despite the poor outcomes of students at private for-profits, TA users are increasingly enrolling in them. For example, private for-profits receive more than half of TA funds, and they represent just less than half of all TA users and all courses taken by TA users. The popularity of private for-profits among TA users may have been driven by recent policy changes (e.g., requiring credit for military training at academic institutions) and the fact that private for-profits have catered to military and other nontraditional students. For example, private for-profits offer more distance learning options than traditional institutions, greater flexibility in course availability, and the ability to pursue a full-time courseload (even when working full-time)—all critically important for military students. Students at private for-profits, however, are much less likely to receive remedial coursework than otherwise similar students. This lack of remedial education implies that the private for-profit

institutions are at least partially responsible for the poorer outcomes of their students.

This literature review alone is not sufficient to determine whether (and to what extent) Servicemembers and military spouses are benefiting from TA and MyCAA, owing to a lack of prior research related specifically to TA and MyCAA and to recent changes to both programs. In addition, the question of whether Servicemembers and military spouses are benefiting from TA and MyCAA is largely an empirical one. Thus, the next component of this study will answer this question by determining TA and MyCAA users' outcomes. In addition, we will address how these outcomes vary by the education sector in which TA and MyCAA users enroll (public, private not-for-profit, or private for-profit).

References

[1] Department of Veterans Affairs. "Part 5: Chapter 10 - Tuition Assistance Top-up." Veterans Benefits Administration Home. Accessed Mar. 7, 2016. http://www.benefits.va.gov/warms/docs/admin22/m22_4/part05/ch10.htm.

[2] Buddin, Richard, and Kanika Kapur. 2002. *Tuition Assistance Usage and First-Term Military Retention.* Accessed Mar. 18, 2016. http://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1295.pdf.

[3] Online Military Education. "What Does the Future Look Like for Military Tuition Assistance?". Online Military Education. Accessed Mar. 7, 2016. http://www.onlinemilitaryeducation.org/faq/what-does-the-future-look-like-for-military-tuition-assistance/.

[4] Thirtle, Michael R. 2001. *Educational Benefits and Officer-Commissioning Opportunities Available to U.S. Military Servicemembers.* RAND. MR-981-OSD. Accessed Mar. 18, 2016. http://www.rand.org/content/dam/rand/pubs/monograph_reports/2009/MR981.pdf.

[5] Asch, Beth J., James Hosek, Jeremy Arkes, Christine Fair, Jennifer Sharp, and Mark Totten. 2002. *Military Recruiting and Retention After the Fiscal Year 2000 Pay Legislation.* RAND Corporation. Accessed Mar. 8, 2016. http://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1532.pdf.

[6] Cappelli, Peter. 2004. "Why Do Employers Pay for College?". *Journal of Econometrics* 121 (1-2): 213-241.

[7] DeBinder, Cat. 2010. "MyCAA to Re-launch This Month with New Guidelines." *America's Navy*. Oct. 15, 2010. Accessed Oct. 13, 2014. http://www.navy.mil/submit/display.asp?story_id=56632.

[8] Government Accountability Office. 2012. *Military Spouse Employment Programs: DOD Can Improve Guidance and Performance Monitoring.* GAO-13-60. Accessed Jun. 1, 2016. http://gao.gov/assets/660/650867.pdf.

[9] United States Senate. 2010. *Benefitting Whom? For-Profit Education Companies and the Growth of Military Education Benefits.* United States Senate - Health, Education, Labor and Pensions Committee.

[10] School of Public Health, University of Michigan. 2014. "Certificate vs Certification." School of Public Health, University of Michigan. Accessed Oct. 13, 2014. http://www.sph.umich.edu/distance/certificate_vs_certification.html.

[11] Alper, Omer, Bill Komiss, and Laura Kelley. 2010. *Estimating the Effects of the Post-9/11 GI Bill for the Marine Corps.* CNA. D0023264.A2.

[12] FAFSA.com. 2012. "Armed Forces Tuition Assistance (TA) Programs." FAFSA.com. Accessed Jul. 27, 2014. http://www.fafsa.com/student-financial-aid/tuition-assistance-programs.

[13] GoArmyEd. 2013. "Tuition Assistance (TA) Policies." GoArmyEd. Accessed Jul. 24, 2014. https://www.goarmyed.com/public/public_tuition_assistance_policies.aspx.

[14] Shane, Leo, III. 2013. "Congress Passes Bill To Force Reinstatement of Tuition Assistance." *Stars and Stripes*. Mar. 21, 2013.

[15] Military Advantage. 2014. "Military Tuition Assistance." Military and Veteran Benefits, News, Veteran Jobs. Accessed Sep. 17, 2014. http://www.military.com/education/money-for-school/tuition-assistance-ta-program-overview.html.

[16] Military One Source. 2012. "MyCAA Fact Sheet." Military OneSource. Feb. 2, 2012. Accessed Sep. 8, 2014. http://www.militaryonesource.mil/12038/Project%20Documents/MilitaryHOMEFRONT/MyCAA/FactSheet.pdf.

[17] Moulton, Brent R. 1990. "An Illustration of a Pitfall in Estimating the Effects of Aggregate Variables on Micro Units." *The Review of Economics and Statistics* 72 (2): 334-338.

[18] Friedman, Esther M., Laura L. Miller, and Sarah E. Evans. 2015. *Advancing the Careers of Military Spouses: An Assessment of Education and Employment Goals and Barriers Facing Military Spouses Eligible for MyCAA*. RAND Corporation. RR784. Accessed Jun. 1, 2016. http://www.rand.org/pubs/research_reports/RR784.html.

[19] Flaherty, Colleen N. 2007. *The Effect of Tuition Reimbursement on Turnover: A Case Study Analysis.* National Bureau of Economic Research. NBER Working Paper 12975. Accessed Apr. 7, 2016. http://www.nber.org/papers/w12975.

[20] edLink, ROI Institute, and Capella University. 2011. *The Value of Tuition Assistance.* Accessed Apr. 7, 2016. http://roiinstitute.net/wp-content/uploads/2014/12/The-Value-of-Tuition-Assistance.pdf.

[21] Garcia, Federico E., Ernest H. Joy, and David L. Reese. 1998. *Effectiveness of the Voluntary Education Program.* CNA. CRM 98-40.

[22] Garcia, Federico E., Jeremy Arkes, and Robert Trost. 2002. "Does Employer-Financed General Training Pay? Evidence From the U.S. Navy." *Economics of Education Review* 21 (1): 19-27.

[23] Mehay, Stephen, and Elda Pema. 2009. *The Impact of the Navy's Tuition Assistance Program on the Retention and Promotion of First-Term Sailors.* NPS-GSBPP-09-026. Accessed Mar. 18, 2016. http://www.dtic.mil/dtic/tr/fulltext/u2/a512728.pdf.

[24] Simon, Curtis J., Sebastian Negrusa, and John T. Warner. 2010. "Educational Benefits and Military Service: An Analysis of Enlistment, Reenlistment, and Veteran's Benefit Usage 1991-2005." *Economic Inquiry* 48 (4): 1008-1031.

[25] Stitcha, Paul J., Timothy A. Dall, Kristina Handy, Javier Espinosa, Paul F. Hogan, and Mark C. Young. 2003. *Impact of Army Continuing Education System (ACES) on Soldier Retention and Performance: Data Analyses.* United States Army Research Institute. Study Report 2003-02.

[26] Orvis, Bruce R., Laurie L. McDonald, Babara Raymond, and Felicia Wu. 2005. *Increasing Participation in Army Continuing Education.* RAND Arroyo Center. MG-293-A. Accessed Jun. 1, 2016. http://www.rand.org/pubs/monographs/MG293.html.

[27] Barnett, Rosalind Chait, Karen C. Gareis, and Robert T. Brennan. 2008. "Wives' Shift Work Schedules and Husbands' and Wives' Well-Being in Dual-Earner Couples With Children: A Within-Couple Analysis." *Journal of Family Issues* 29 (3): 396-422.

[28] Strazdins, L., M. Shipley, M. Clements, L.V. O'Brien, and D.H. Broom. 2010. "Job Quality and Inequality: Parents' Jobs and Children's Emotional and Behavioural Difficulties." *Social Science & Medicine* 70 (12): 2052-2060.

[29] Buryk, Peter, Thomas E. Trail, Gabriella C. Gonzalez, Laura L. Miller, and Esther M. Friedman. 2015. *Federal Educational Assistance Programs Available to Service Members: Program Features and Recommendations for Improved Delivery.* RAND Corporation. Accessed Mar. 18, 2016. http://www.rand.org/content/dam/rand/pubs/research_reports/RR600/RR664/RAND_RR664.pdf.

[30] Quester, Aline O., Robert W. Shuford, Nolan J. C. L. Noble, and David Gregory. 2014. "Table D-11. Active Component Enlisted Members, FYs 1973-2013 (in Thousands)." Population Representation in the Military Services, 2013. Accessed Mar. 18, 2016. https://www.cna.org/pop-rep/2013/appendixd/d_11.html.

[31] Altman, George. 2014. "Top TA and GI Bill Schools." *Navy Times.* Aug. 4, 2014.

[32] Altman, George. 2014. "Most Popular Colleges for TA and GI Bill." *Military Times.* Jul. 28, 2014.

[33] Department of Defense. "FY15 TA DECIDE data, 3/31/16 run." Voluntary Education Partnership Memorandum of Understanding. Accessed May 25, 2016. https://www.dodmou.com/TADECIDE/.

[34] Alper, Omer, and Laura Kelley. 2009. *Estimating the Effects of the Post 9/11 GI Bill: Background and Literature Survey.* CNA. CIM D0021692.A1/Final.

[35] Marotell, Paco, and Peter Bergman. 2013. *Understanding the Cost and Quality of Military-Related Education Benefit Programs.* RAND Corporation. RR-297-OSD. Accessed Mar. 8, 2016.

http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR297/RAND_RR297.pdf.

[36] Duffourc, Danielle. 2006. "State-Funded College Scholarships: General Definitions and Characteristics." *Review of Policy Research* 23 (1): 235-248.

[37] Berger, Mark C., and Thomas Kostal. 2002. "Financial Resources, Regulation, and Enrollment in U.S. Public Higher Education." *Economics of Education Review* 21 (2): 101-110.

[38] Bruce, Stephen. 2010. "Tuition Assistance: Do Your Benefits Measure Up?". *HR Daily Advisor*. Oct. 11, 2010. Accessed Mar. 15, 2016. http://hrdailyadvisor.blr.com/2010/10/11/tuition-assistance-do-your-benefits-measure-up/.

[39] Avery, Christopher, and Sarah Turner. 2012. "Student Loans: Do College Students Borrow Too Much—Or Not Enough?". *Journal of Economic Perspectives* 26 (1): 165-192. doi: 10.1257/jep.26.1.165.

[40] Kamenetz, Anya. 2014. "When College Isn't Worth It." *NPR*. May 28, 2014. Accessed Aug. 29, 2014. http://www.npr.org/blogs/ed/2014/05/28/316344968/when-college-isnt-worth-it?utm_campaign=storyshare&utm_source=twitter.com&utm_medium=social.

[41] Ludden, Jennifer. 2014. "Going to College May Cost You, But So Will Skipping It." *NPR*. Feb. 11, 2014. Accessed Aug. 28, 2014. http://www.npr.org/2014/02/11/275297408/going-to-college-may-cost-you-but-so-will-skipping-it.

[42] Gallup. 2014. *Great Jobs, Great Lives: The 2014 Gallup-Purdue Index Report.* Gallup and Purdue University. Accessed Oct. 2014,. https://www.luminafoundation.org/files/resources/galluppurdueindex-report-2014.pdf.

[43] Baum, Sandy, Jennifer Ma, and Kathleen Payea. 2013. *Education Pays 2013: The Benefits of Higher Education for Individuals and Society.* College Board. Accessed Mar. 8, 2016. http://trends.collegeboard.org/sites/default/files/education-pays-2013-full-report.pdf.

[44] Bureau of Labor Statistics. 2016. *Earnings and Unemployment Rates by Educational Attainment.* Bureau of Labor Statistics. Accessed Apr. 14, 2016. http://www.bls.gov/emp/ep_chart_001.htm.

[45] Baum, Sandy, Jennifer Ma, and Kathleen Payea. 2012. *Trends in Public Higher Education: Enrollment, Prices, Student Aid, Revenues, and Expenditures.* College Board: Advocacy & Policy Center. Accessed Sep. 8, 2014. http://trends.collegeboard.org/sites/default/files/trends-2012-public-higher-education-expenditures-brief.pdf.

[46] Snyder, Thomas D., and Sally A. Dillow. 2012. *Digest of Education Statistics 2011.* National Center for Education Statistics (NCES). NCES 2012-001. Accessed Mar. 8, 2016. http://nces.ed.gov/pubs2012/2012001.pdf.

[47] Pew Research Center. 2014. *The Rising Cost of Not Going to College.* Pew Research Center. Accessed Oct. 8, 2014. http://www.pewsocialtrends.org/files/2014/02/SDT-higher-ed-FINAL-02-11-2014.pdf.

[48] O'Connor, John. 2014. "New Florida Report Tracks State College and University Graduate Earnings." *StateImpact.* Jun. 20, 2014. Accessed Aug. 28, 2014. http://stateimpact.npr.org/florida/2014/06/20/new-florida-report-tracks-state-college-and-university-graduate-earnings/.

[49] *The Prize in Economics 1992 - Presentation Speech.* 1992. Nobelprize.org: Nobel Media AB 2014. Accessed Oct. 9, 2014. http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1992/presentation-speech.html.

[50] *The Prize in Economics 2000 - Presentation Speech.* 2000. Nobelprize.org: Nobel Media AB 2014. Accessed Oct. 9, 2014. http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2000/presentation-speech.html.

[51] Gunderson, Steve. 2014. *APSCU Letter to Secretary Duncan on Proposed Gainful Employment Regulation.* Association of Private Sector Colleges and Universities. Accessed Oct. 8, 2014. http://www.apscu.org/news-and-media/sector-news/upload/APSCU-Letter-to-Sec-Duncan-31314.pdf.

[52] *What's Keeping Some Graduates From Getting Hired?* 2014. NPR. Washington, D.C.: NPR. Accessed Aug. 28, 2014. http://www.npr.org/2014/06/04/318782236/whats-keeping-some-graduates-from-getting-hired.

[53] *Study Says Many College Students Underemployed After Graduation.* 2013. NPR. Washington, D.C.: NPR. Accessed Aug. 28, 2014. http://www.npr.org/2013/02/02/170922686/study-says-many-college-students-underemployed-after-graduation.

[54] New York Federal Reserve. 2016. "The Labor Market for Recent College Graduates." Federal Reserve Bank of New York. Apr. 6, 2016. Accessed Apr. 14, 2016. http://www.newyorkfed.org/research/college-labor-market/college-labor-market_underemployment_rates.html.

[55] Complete College America. 2011. *Time Is the Enemy.* Washington, D.C. Accessed Jun. 1, 2016. http:/www.luminafoundation.org/files/resources/time-is-the-enemy.pdf.

[56] Donoghue, Frank. 2011. "For-Profit Colleges' Dubious Statistics." *The Chronicle of Higher Education.* Mar. 28, 2011. Accessed Aug. 28, 2014. http://chronicle.com/blogs/innovations/for-profit-colleges-dubious-statistics/28999.

[57] Deming, David J., Claudia Goldin, and Lawrence F. Katz. 2012. "The For-Profit Postsecondary School Sector: Nimble Critters or Agile Predators?". *Journal of Economic Perspectives* 26 (1): 139-164. doi: 10.1257/jep.26.1.139.

[58] Kamenetz, Anya. 2014. "Poll: Prestigious Colleges Won't Make You Happier in Life or Work." *NPR*. May 6, 2014. Accessed Aug. 28, 2014. http://www.npr.org/blogs/thetwo-way/2014/05/06/308382912/poll-prestigious-colleges-wont-make-you-happier-in-life-or-work.

[59] Quester, Aline O., Robert W. Shuford, Nolan J.C.L. Noble, and David Gregory. 2014. "Table B-17. Active Component Enlisted Members, FY13: by Service, Gender, and Race/Ethnicity with Civilian Comparison Group." Population Representation in the Military Services, 2013. Accessed Apr. 8, 2016. https://www.cna.org/pop-rep/2013/appendixb/b_17.html.

[60] Pern, Laura W., and Anthony Jones. 2013. *The State of College Access and Completion: Improving College Success for Students From Underrepresented Groups*. New York: Routledge.

[61] National Center for Education Statistics. 2014. "Postsecondary Education Outcome Measues: ED, DOD, and VA." National Center for Education Statistics. Accessed Aug. 8, 2014. http://nces.ed.gov/statprog/outcomemeasures/.

[62] Heller, Donald E. 1999. "The Effects of Tuition and State Financial Aid on Public College Enrollment." *The Review of Higher Education* 23 (1): 65-89.

[63] National Association of College and University Business Officers. 2014. *Private Colleges and Universities Continue to Increase Tuition Discount Rate Resulting in Limited Net Tuition Revenue Growth.* National Association of College and University Business Officers. Accessed Oct. 9, 2014. http://www.nacubo.org/Documents/about/pressreleases/2013TDSPressRelease.pdf.

[64] National Center for Education Statistics. 2012. "Average Undergraduate Tuition and Fees and Room and Board Rates Charges for Full-Time Students in Degree-Granting Institutions, by Level and Control of Institution: 1969-70 through 2011-12." Digest of Education Statistics: 2012. U.S. Department of Education; Institute of Education Sciences; National Center for Education Statistics. Accessed Oct. 9, 2014. http://nces.ed.gov/programs/digest/d12/tables/dt12_381.asp?referrer=report.

[65] Shin, Jung-cheol, and Sande Milton. 2006. "Rethinking Tuition Effects on Enrollments in Public Four-Year Colleges and Universities." *The Review of Higher Education* 29 (2): 213-237.

[66] Fain, Paul. 2011. "For-Profits Lag Behind Other Colleges in Student Outcomes." *Inside Higher Ed*. Dec. 7, 2011. Accessed Aug. 29, 2014. https://www.insidehighered.com/news/2011/12/07/profits-lag-behind-other-colleges-student-outcomes.

[67] Steele, Jennifer L. 2012. *Military Veterans' Experiences in For-Profit Higher Education*. United States House of Representatives, Committee on Veterans' Affairs, Subcommitte on Economic Opportunity. May 16, 2012. Accessed Mar. 18, 2016. http://www.rand.org/content/dam/rand/pubs/testimonies/2012/RAND_CT376.pdf.

[68] Steele, Jennifer L., Nicholas Salcedo, and James Coley. 2011. *Service Members in School: Military Veterans' Experiences Using the Post-9/11 GI Bill and Pursuing Postsecondary Education.* MG-1083-ACE. Accessed Mar. 8, 2016. http://www.rand.org/content/dam/rand/pubs/monographs/2011/RAND_MG1083.pdf.

[69] Mangan, Katherine. 2014. "Alumni of For-Profit Colleges Have Mixed Views of Their Experience." *The Chronicle of Higher Education.* Feb. 10, 2014. Accessed Aug. 29, 2014. http://chronicle.com/article/Alumni-of-For-Profit-Colleges/144669/.

[70] Public Agenda. 2014. *Profiting Higher Education? What Students, Alumni and Employers Think About For-Profit Colleges.* Public Agenda. Accessed Oct. 8, 2014. http://www.publicagenda.org/files/ProfitingHigherEducation_PublicAgenda_2014.pdf.

[71] Radford, Alexandria W. 2011. *Learning at a Distance: Undergraduate Enrollment inn Distance Education Courses and Degree Programs.* NCES. 2012-154. Accessed Oct. 13, 2014. http://nces.ed.gov/pubs2012/2012154.pdf.

[72] Straumsheim, Carl. 2014. "Identifying the Online Student." *Inside Higher Ed.* Accessed Oct. 13, 2014. https://www.insidehighered.com/news/2014/06/03/us-releases-data-distance-education-enrollments.

[73] The Chronicle of Higher Education. 2014. "Search Results for: 'for profit'." The Chronicle of Higher Education. Aug. 28, 2014. Accessed Aug. 28, 2014. http://chronicle.com/search/?search_siteId=5&contextId=&action=rem&searchQueryString=for+profit.

[74] Donoghue, Frank. 2011. "Who Goes to For-Profit Colleges?". *The Chronicle of Higher Education.* Jun. 27, 2011. Accessed Aug. 28, 2014. http://chronicle.com/blogs/innovations/who-goes-to-for-profit-colleges/29725.

[75] Field, Kelly. 2011. "Undercover Probe Finds Lax Academic Standards at Some For-Profit Colleges." *The Chronicle of Higher Education.* Nov. 22, 2011. Accessed Aug. 28, 2014. http://chronicle.com/article/Undercover-Probe-Finds-Lax/129881/.

[76] White, Christopher. 2014. "Here's How For-Profit Schools Mislead Veterans." *Task and Purpose.* Aug. 27, 2014. Accessed Aug. 29, 2014. http://taskandpurpose.com/heres-profit-schools-mislead-veterans/.

[77] Wood, Peter. 2011. "For-Profit Colleges on the Brink, Part 2." *The Chronicle of Higher Education.* Jan. 7, 2011. Accessed Aug. 28, 2014. http://chronicle.com/blogs/innovations/for-profit-colleges-on-the-brink-part-2/28284.

[78] Bidwell, Allie. 2014. "For-Profit Colleges May Be Better at Meeting Some Student Needs, Report Says." *US News.* Feb. 11, 2014. Accessed Aug. 29, 2014. http://www.usnews.com/news/articles/2014/02/10/for-profit-colleges-may-be-better-at-meeting-some-student-needs-report-says.

[79] Eaton, Collin. 2011. "Kentucky Attorney General Sues a Third For-Profit College." *The Chronicle of Higher Education.* Sep. 27, 2011. Accessed Aug. 28, 2014.

http://chronicle.com/blogs/ticker/kentucky-attorney-general-sues-a-third-for-profit-college/36734.

[80] Shane, Leo, III. 2014. "College's Recruiting Practices Draw Congressional Fire." *Military Times*. Jul. 23, 2014.

[81] Tritten, Travis J. 2014. "Senate Moves To Rein in Career Colleges Popular Among Troops." *Stars and Stripes*. Jul. 22, 2014.

[82] Horn, Laura J., and C. Dennis Carroll. 1996. *Nontraditional Undergraduates: Trends in Enrollment From 1986 to 1992 and Persistence and Attainment Among 1989-90 Beginning Postsecondary Students*. National Center for Education Statistics. Accessed Mar. 8, 2016. http://nces.ed.gov/pubs/97578.pdf.

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DRM-2014-U-008864-2Rev

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