



# *GEORGETOWN UNIVERSITY*

School of Continuing Studies

Capstone MPTM-900

Tableau Student Data Challenge - Veteran Education Benefits

Ramsay Bohm | Kidan Berhanu

**Contents**

- Abstract..... 3
- Problem Statement ..... 4
- Project Idea..... 5
- Required data/data sources ..... 6
- Analysis plan..... 7
- Our Dashboard- Version 1.0 ..... 8
  - Dashboard Visualization ..... 9
- Analytics and data integrity .....10
  - Data Storage and Hosting .....10
  - Data Updating and Integrity .....11
- Marketing and Outreach Plan.....12
  - Marketing Analysis Plan .....12
- Risk (including cyber) analysis .....13
- Research .....14
  - Research- Design Methods .....15
- Technical Components .....16
  - Building the Dashboard .....17
- Business case.....18
- Solution Differentiators.....20
- GI Bill® Comparison Tool .....21**
- Financial Analysis .....23
- Cost Analysis .....24
- Ethical Analysis.....25
  - Value Proposition .....25
  - Ethical Risks.....25
  - Privacy Concerns .....26
  - Advertising Strategy .....26
- Conclusion .....27
- References .....29

### **Abstract**

This proposal clearly lays out a plan for creation and implementation of a Tableau dashboard that will allow veterans to easily and efficiently identify higher education institutions that will be a good fit and match for their individual interests and experience. Additionally, we analyze the business case, financial impacts and risks, research considerations, technical components, and ethical considerations of this proposal.

The value proposition of this project is not in monetary or business process improvements, but rather it is a purely ethical justification. We aim to directly improve the lives of veterans, their families, their communities, and others by providing a tool that will allow them to make informed decisions about how and where to use their GI Bill benefits.

## **Problem Statement**

Enacted in 1944, the Servicemen's Readjustment Act, also known as the GI Bill of Rights provides educational and training benefits for Veterans. In 2008 Congress created the Post-9/11 GI Bill that provides a comprehensive education benefit for Veterans. Veterans who have served on active duty for a minimum of 90 or more since September 2001 are eligible. GI Bill benefits include up to the full amount of tuition and fees for a state-operated college or university or through the Yellow Ribbon program Veterans get additional assistance for students attending private or out of state institutions. In addition, Veterans also qualify for housing and books/supplies allowances.

There are many benefits that veterans may be eligible for, including disability compensation, employment services, health care, home loans, housing assistance, life insurance, and education and training. However, many Veterans are not taking full advantage of these benefits, for a variety of reasons.

The problem we have identified is taken directly from the Tableau Open Data Student Challenge: U.S. Veterans can find it difficult to locate the schools and educational programs that are covered by the GI Bill and fit their needs and interests. In fact, according to the Cincinnati VA Medical Center, as many as 60% of Veterans not taking advantage of health benefits that they are eligible for. Some of the reasons for the underutilization of benefits includes misinformation about benefits, complex claim processes, or simply lack of adequate information. Our project is to create a tool to help Veterans identify, analyze and measure the advantages and availability of those programs.

Using this challenge as inspiration, we were able to reach out to Veterans Services offices at both Georgetown University and the University of Wisconsin-Madison to confirm that there is

indeed a problem with how Veterans are able to find colleges or universities that would be a good match for their interests, location, and other factors.

Currently, the only tool available to Veterans who are interested in pursuing a degree using their GI Bill is a website called the “GI Bill Comparison Tool” that is hosted by the Veterans Affairs office. This website does let you search for colleges and universities and then gives you some data about them, however, it is severely lacking in usefulness and value.

Specifically, The VA’s website has a poor search function. You may specify if you’re looking for online or in-person courses, a few filters regarding your Veterans status, and then enter a specific school, and the site will generate results with a list of schools matching your query. However, even if I were a veteran interested in attending UW-Madison and entered Madison, I then get 270 results to sift through.

Furthermore, once you do narrow your search down to a specific institution, the data provided on those institutions is almost entirely financial in nature. This is the least relevant data that a veteran would actually be interested in, as the GI Bill is covering both tuition and other costs (via a stipend). Beyond that, the rest of the data is admissions data that a veteran may or may not know how to interpret. Do you think the average veteran knows what a retention rate is for a 4-year University or how to compare that across multiple institutions? We do not.

### **Project Idea**

To address the problem mentioned above, our project will be to create a Tableau dashboard that would assist Veterans to easily find education and training programs available to them at the above mentioned two educational institutions, if not more. We will leverage the dedicated Veterans’ affairs staff at the two schools as well as publicly available data such as the U.S. News ranking website and the IPEDS site from the NCES for our project.

The Tableau dashboard will allow Veterans to easily answer the following questions:

- Does the school or program have dedicated staff for Veterans' affairs?
- How much of the tuition and fees will the GI Bill pay?
- Does the school offer online learning?
- Financial aid and scholarship available for Veterans
- On/off campus support resources
- Health and wellness resources for Veterans
- Student Veterans groups
- Does the school offer credit for time served?
- Is the school accredited?
- Degrees (undergraduate, graduate, etc.) and certificates
- Majors (Computer Science, Business, Technology Management, Nursing, etc.)

### **Required data/data sources**

As part of the Student Data Challenge, Tableau has provided a link to the dataset provided by the Department of Veterans Affairs. This dataset contains a list of higher education institutions and relevant data regarding accreditation, Yellow Ribbon participation, et al.

However, this data is not in itself enough to create a tool with the usefulness we envision.

Therefore, we will be augmenting this data with additional datasets including:

- University and college rankings from US News
- Data provided from the Service2School program

- Location data gathered from Google Maps
- Additional data provided from participating institutions

Regarding the additional data from participating institutions, we will use initial data from our pilot institutions (UW-Madison, Georgetown University) to assess and identify what types of data elements are feasible. Following that step, we will then be able to construct a more formalized, structured survey that we can use to elicit data from further institutions en masse.

It should be noted that full data from these sources will likely not be acquired during Phase I of this project. Ongoing work to continue to collect this data will be necessary in order to fully realize the potential of this tool.

### **Analysis plan**

The essence of this project is not to analyze data, but rather to provide a novel means of putting this data in the hands of those that need it, veterans, in a way that they will be able to effectively interpret it. Nonetheless, there are several components of this project that will benefit from analysis.

After collecting the appropriate data from various sources, we will build a prototype and test the dashboard to ensure it is working as designed. We will prove it with fellow students and based on their feedback we will finetune the panel to make it easy for users. Ultimately at this phase (phase I), the goal is to have a dashboard that would enable Veterans to easily and quickly find vital information such as eligibility, cost, and educational and training programs provided by the two educational institutes.

### **Our Dashboard- Version 1.0**

The first version of our dashboard was completed in April and submitted to Tableau for the Student Open Data Challenge. This first version included multiple ways to search and filter for higher education institutions including by name, by degree type, by state, and based on Yellow Ribbon status.

We designed the dashboard in an infographic-like style, as we thought that too much data might be overwhelming for our audience. Keeping that in mind, we also decided to add a direct link to [Service2School.com](http://Service2School.com), a non-profit organization founded by several veterans and an admissions counselor that provides free higher education counseling to veterans. This way, if they found our Tableau dashboard at all confusing, we had the hope of steering them to someone who could help answer their questions and point them towards a suitable school that would meet their needs.

Additionally, we incorporated several of the fields we did not have full datasets for, including School Rank for Vets and Veterans Coordinator for each school. We wanted to give people an idea of the full value of our tool if we were able to acquire these data elements at a later date. There are even more data elements that we wanted to include but did not have data for at this time, such as the proximity of a Veterans Affairs Hospital to each institution. We imagine that such information would be quite valuable to a veteran using our tool, however that data will involve a manual and tedious process of going through each school using Google Maps and locating VA schools nearby. We are optimistic that we will have the chance to do just that at a later phase in the project.

### Dashboard Visualization

Below you can see a static image of what our Version 1.0 dashboard looks like. Part of the design process was to keep a light theme and to avoid using primary colors. It should be noted that Tableau dashboards are in general not very accessible for those with visual or learning disabilities. This is simply because of the nature of the interactive dashboards. We do think a more accessible version of this could be produced, albeit a slightly less functional one. Nonetheless, we still took into consideration what accessible elements we could and will continue to maintain that goal in future versions of the interface.

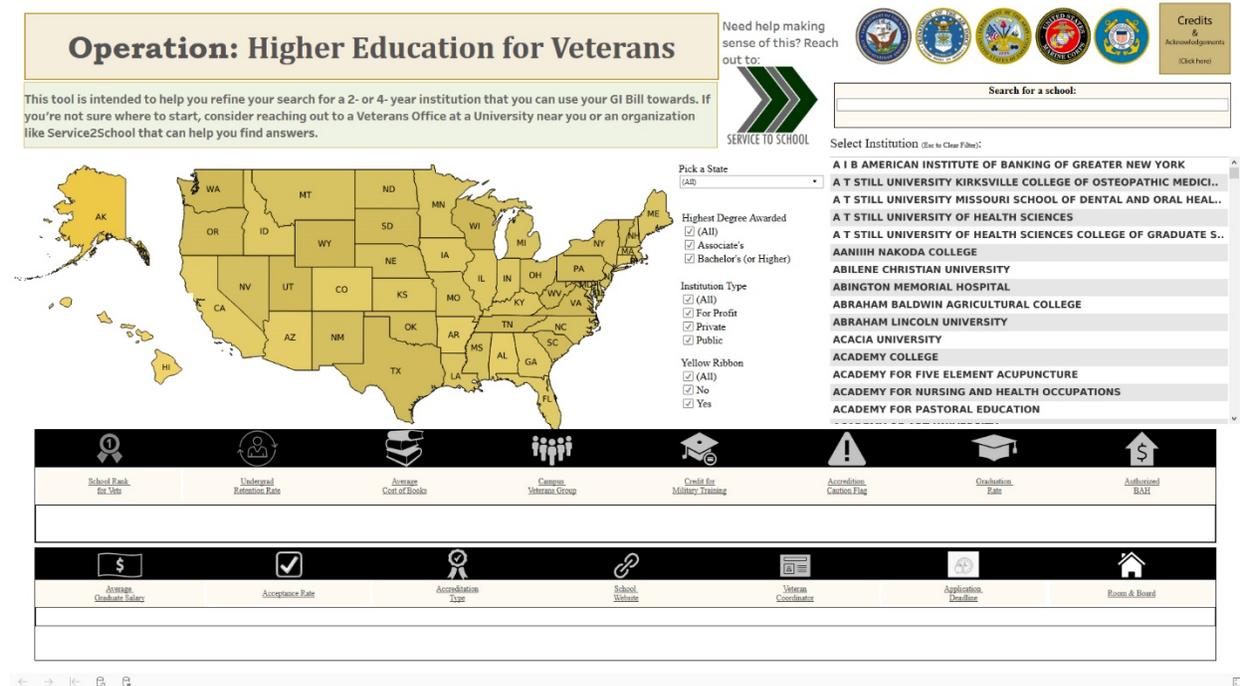


Figure 1: Tableau Dashboard “Operation: Higher Education for Veterans”

### **Analytics and data integrity**

It is important to verify that our tool is effective and to determine ways it can be improved. Therefore, we will collect website analytics and elicit feedback from users that will help towards those goals. Some of the metrics we intend to collect from users includes:

- User satisfaction
- User demographics
- User location

Additionally, we will want to develop a method of verifying the integrity of the data used for the tool on an annual or semi-annual basis. It is critical that the data used for this tool be accurate and up to date, or the tool loses effectiveness. This method may be automated for some data elements and manual for others.

### **Data Storage and Hosting**

One of the technical aspects of maintaining our dashboard is in how we store and update the multiple data sources used in the project. As of this time, we do not have the funding to host our own instance of Tableau Server. Therefore, in order to keep our dashboard visible to the widest audience, we will need to host it on Tableau Public, which is where it resides currently. However, one of the limitations of Tableau Public is that dashboards on Tableau Public are not able to connect to live data sources. Instead, the data must be cleaned and stored within the project itself.

Although it would be better if we could connect to live data sources for this project, much of the data will need to be acquired through a manual process and will not be easily updated.

Therefore, we thought it was imperative that we have a strategy for making the data updating process and easy and efficient as possible. Thankfully, Tableau also has a tool that will help us do just this.

### **Data Updating and Integrity**

The bulk of the data used for this tool originates from the Department of Veterans Affairs. This data is collected at regular intervals by the VA and is then updated on their website: [https://www.benefits.va.gov/GIBILL/docs/job\\_aids/ComparisonToolData.xlsx](https://www.benefits.va.gov/GIBILL/docs/job_aids/ComparisonToolData.xlsx)

Rather than manually format this dataset along with our other data sources, we were able to take advantage of Tableau Prep. This tool lets you combine, format, and clean multiple data sources and compile them in a single file, usually Excel or .CSV formatted. The advantage of using Prep is that as we refresh and update our data sources, as long as they don't change in format, we can use the same 'Flow' in Tableau Prep to give us a consistent single outputted dataset that we can then upload to our dashboard.

Again, it should be noted that much of the data we are planning to incorporate into our dashboard will not be easily acquired and so we do not envision updating certain data element very often. However, some of these elements are not likely to change very regularly, such as the nearest VA hospital to a school, so we think some of the risk can be mitigated by focusing our data updating efforts on those elements that are most likely to vary. Furthermore, if we are able to round up more resources, we will then be able to update and refresh even these hard to acquire data elements more routinely.

### **Marketing and Outreach Plan**

A key initiative of this project is not only to assemble the necessary datasets and build the tool, but also to get the tool into the hands of veterans who can use it. Therefore, a marketing and outreach plan will be necessary. The marketing plan will be implemented in Phase II of this project. This plan will consist of the following:

1. Develop contacts within the Veteran Affairs department who can promote and share the tool.
2. Build a coalition of Veteran Services offices at higher education institutions that can promote and share the tool.
3. Leverage contacts at Tableau that can promote and share the tool.
4. Develop an advertising campaign to target veterans who have recently left active duty and may be considering pursuing a degree with the GI Bill.

### **Marketing Analysis Plan**

As part of our market research, our plan is to reach out to our partner institutions, Georgetown University and University of Wisconsin- Madison, to form a focus group that can provide feedback on our Version 1.0 dashboard. It may be beneficial to identify veterans who are currently seeking a higher education institution to use their GI Bill benefits at and have them use our tool. If we can get a small group of veterans to provide feedback on our tool it may directly inform us on ways to improve our tool. Although we have limited resources for this project to reimburse or incentivize such a pilot group, we are optimistic that we can either come up with incentives through volunteers or donations.

Furthermore, once our dashboard is refined enough to begin marketing it, we will provide a link to a survey or other feedback mechanism so that we can continuously gather input on how our tool is working and how it can work better.

### **Risk (including cyber) analysis**

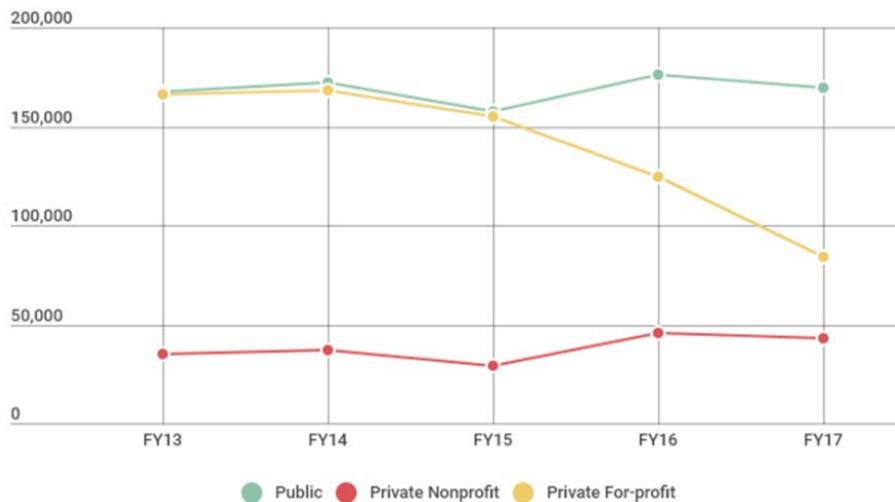
Tableau helps organizations big and small transform their data into actionable insights by allowing them to easily access data stored in any format and perform analyses. It enables users to create highly interactive dashboards that can be shared across the organization or in general to the public. To ensure the data organizations are loading into the Tableau Server secure Tableau takes cyber security very seriously. For example, the company has passed the stringent security required by the military, federal and state governments, and healthcare industry. In addition, many colleges and universities also use the Tableau Server to share all types of reports to faculty and students. The company actively tests for vulnerabilities and addresses new threats in a timely fashion. It also maintains a comprehensive set of IT controls which are regularly audited by independent firms. For example, it is fully in compliance with Sarbanes Oxley (SOX) requirements and annually provides its clients Service Organization Control (SOC 2) report that details the security controls the company has in place.

Tableau offers six products: Tableau Online System, Tableau Desktop, Tableau Prep, Tableau Public, Tableau Bridge and Tableau Server. For this project Tableau Online, a hosted version of Tableau Server is the most suitable.

Tableau Online is a cloud based Software as a Service (SaaS) offering built on Tableau server. The server is hosted in a secure data centers and can be accessed by customers remotely using a browser on any device (desktop, laptop or mobile devices). Data between Tableau Online and customer is transported via the internet using encrypted Transport Layer Security (TLS).

**Research**

According to the most recent data provided by the Department of Veterans Affairs, the number of Post-9/11 GI Bill users fell in fiscal 2017. In 2017 about 34,000 or 4 percent fewer eligible veterans and their dependents used the GI Bill at educational institutes. In the same year, VA data shows 53 percent of GI Bill recipients attended public schools, while 27 percent went to for-profit schools, and the remaining 20 percent attended private schools. Approximately 28,000 GI Bill recipients went to The University of Phoenix system, followed by 19,000 went to the University of Maryland University College and 18,000 California community colleges.



**Figure 2:** Post-9/11 GI Bill recipients at the 50 most popular schools.

(Source: Department of Veterans Affairs)

One of the questions we hope to provide an answer to why GI Bill users went down to 755,476 in 2017 after being over 790,000 for the previous three years. There are several hypotheses to consider. It could be because the number of transitioning service members was lower or their age or the economy (i.e., low unemployment rate). According to James Schmeling, executive vice president for the nonprofit Student Veterans of America, it could even be due to

the recent change to the Post-9/11 GI Bill (Forever GI Bill) that reduced veterans' urgency. The Forever GI Bill removed the 15-year time limit on the original GI Bill.

However, the answer to why the number of veterans enrolling in schools is declining might be related simply to lack of adequate information. It is often difficult for students including veterans to identify information on educational programs that suit their needs. Information such as available local programs, schools that allow military experience to transfer to academic credits, schools with relevant curriculum, schools with physical and online presences, etc. is not always easily to find in one place. Our project will attempt to address this issue by developing a Tableau dashboard that would help veterans identify schools and programs that most suit their needs.

### **Research- Design Methods**

One of the biggest challenges of building the dashboard itself is designing it in such a way that it is easily used by our target audience: veterans. With this in mind, we have and will continue to reach out to as many veteran-related contacts that we are able to. This includes Veterans services offices at colleges and universities, contacts at the Department of Veterans Affairs, non-profit organizations like Service2School, and as many others as we can think of.

When reaching out to these people and organizations, we want to find out what they think is lacking from the resources available to veterans regarding higher education institutions as well as what some of the barriers these veterans might run up against in using the data effectively. We recognize that not all veterans have a background in university admissions data, so although we want to include admissions data in our dashboard, we may also need to leverage other methods of making this data make sense to the veteran viewing it.

One such method we have decided to use is linking directly from our dashboard to the Service2School website. Service2School is a non-profit organization that provides free counseling to veterans for admission to colleges or universities.

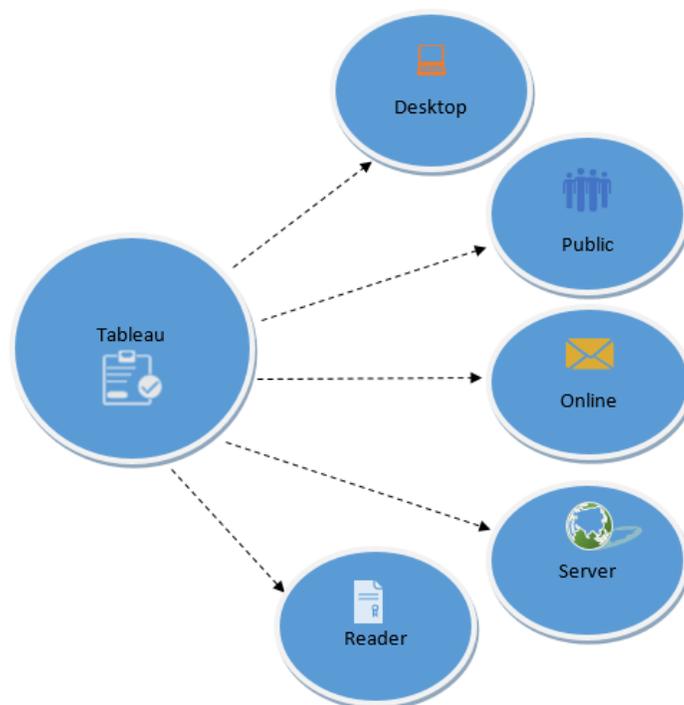
Additionally, we constructed our dashboard to be as “infographic” as possible. We want it to be accessible, not overwhelming, and yet provide as much information as it possibly can.

### **Technical Components**

The technical components of our project will be in the construction of a Tableau visualization that will vastly improve on the existing tools available to veterans at the moment. Although Tableau is one of the best software tools on the market for crating visualizations and dashboards, neither Kidan nor Ramsay have extensive experience with it. Therefore, this will be a technical challenge that will need to be overcome.

Beyond building the tool itself, we will need to both acquire and assemble several datasets with disparate sources to feed the tool. Some of this data is provided by the Veterans Affairs office, some is available on the internet (Google maps, US News rankings, etc.), and some we will need to manually obtain from participating institutions.

As part of the Tableau students program, we have obtained access to the full Tableau Desktop version. This would allow us to take full advantage of the capabilities and features not available with the other products. After we finalized the dashboard, it would be published on Tableau Public so anyone with access to the internet, particular veterans would be able to take advantage of the dashboard as they search for educational institutes that most suit their needs.



**Figure 3:** The different products offer by Tableau (Source: guru99.com)

### **Building the Dashboard**

Although it might seem a daunting task, we have a number of Tableau resources to take advantage off.

First off, we have Tableau themselves helping us with this project. We were able to meet 1-on-one with Larry Hill from Tableau, who gave use a crash course on dashboard design best practices.

Secondly, both Ramsay and Kidan have several personal and professional contacts that are intermediate to advanced Tableau users. These Tableau subject matter experts will be indispensable as we build and refine the dashboard itself. We'd like to acknowledge both Don Ingham and Ankur Patel as already having contributed to this endeavor.

Lastly, Tableau itself has a whole online community devoted to helping its members learn and grow as Tableau users. From online video tutorials to forums to an extensive FAQ section, we plan to take advantage of every last resource we can in order to build and develop the best dashboard we can.

### **Business case**

The most recent data provided by the Department of Veterans Affairs shows the number of Post-9/11 GI Bill users fell in fiscal year 2017. About 34,000 fewer eligible veterans and their dependents used the GI Bill at educational institutions. There are many reasons for this drop in GI Bill usage, including veterans who want to defer their GI Bill so that a child can use it or simply because of shifts in veterans' desire to pursue further education after their military career.

However, as we researched this topic and looked at the various resources available to veterans to locate information on using their GI Bill, such as the Veterans Affairs Department's 'GI Bill Comparison Tool' (<https://www.va.gov/gi-bill-comparison-tool>), we soon realized that one of the reasons for the underutilization of GI Bill benefits might be a lack of adequate or easily accessible information regarding the GI Bill. Specifically, there are very limited resources available for accessing information on eligible institutions that would be a fit for a veteran's individual interests and experience.

It is often difficult for students including veterans to identify information on educational programs that suit their needs. Information such as available local programs, schools that allow military experience to transfer to academic credits, schools with relevant curriculum, schools with physical and online presences, etc. is not always easily to find in one place.

Our project will attempt to address this issue by developing a Tableau dashboard that would help veterans identify schools and programs that most suit their needs, as well as

identifying further data elements that would greater enhance the usefulness of our tool to pair veterans with institutions that would be a good fit for them.

The GI Bill Comparison Tool on the U.S. Department of Veterans website has very limited features. With the VA's tool, a veteran can retrieve a list of educational institutes based on four criterions:

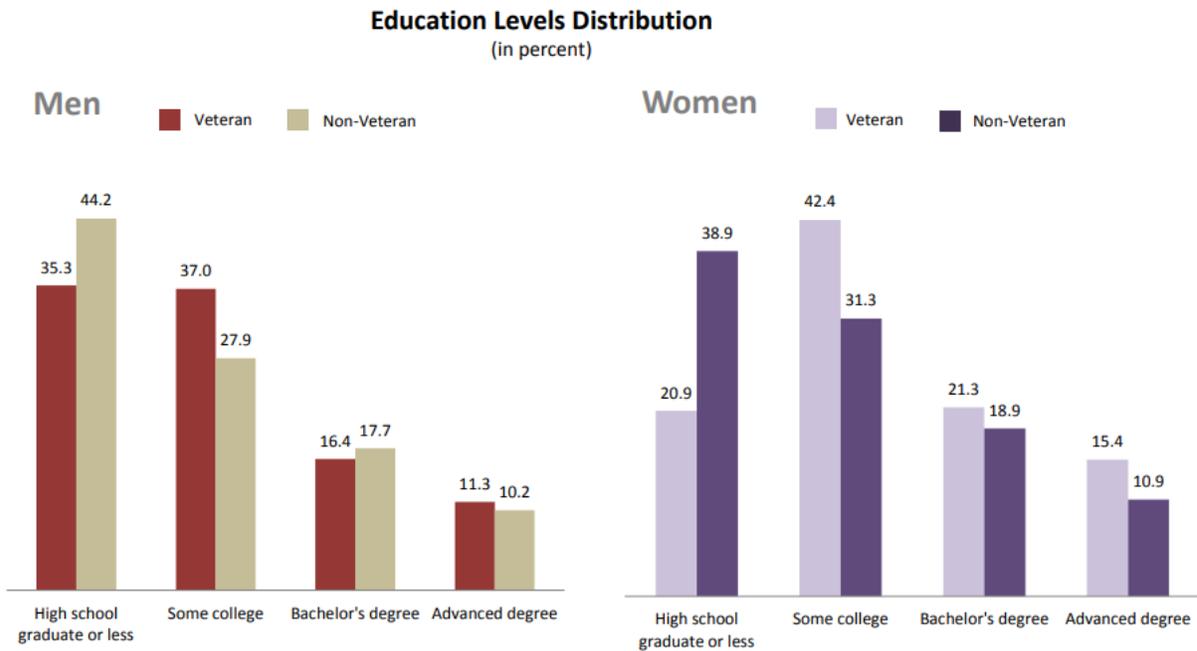
- What is your military status?
- Which GI Bill benefit do you want to use?
- Cumulative Post-9/11 active duty service
- How do you want to take classes? (Online or in-person)

In comparison, our Tableau dashboard will be very interactive and will have far more options than those listed above. Veterans would be able to filter by multiple criterions including geographical location, school cost, school size, etc. and identify the school/program that suits their need the best. Additionally, we have identified further data elements that will make the tool even more useful and have included a plan for collecting that data in further stages of this project.

While our Tableau dashboard can be used by all veterans, we believe veterans with High School diplomas or less would benefit the most. In general, veterans have more education than non-Veteran except those with High School degree or less (U.S. Census Bureau, 2017). Our dashboard would help this group to identify the school/program that would best suit their needs.

Additionally, both male and female veterans have higher rates of having 'Some College' education levels than non-veterans (U.S. Census Bureau, 2017). We believe this is further evidence that veterans may not have adequate tools in selecting the best institution or program for the interests and experience. It is our hope that by providing a better tool for finding

information on the best matched institution for an individual veteran we will increase the likelihood that veterans will complete the degree they begin.



**Figure 4: Education Levels Distribution**

*Source: U.S. Census Bureau, American Community Survey PUMS, 2017*

**Solution Differentiators**

Compared to the GI Bill Comparison Tool located on the Veterans Affairs website (<https://www.va.gov/gi-bill-comparison-tool/>) the Tableau dashboard offers several additional benefits. Unlike the GI Bill Comparison Tool that allows to select one school or program at a time, the Tableau dashboard allows users to perform visual analysis. It is interactive and enables users to explore the data on the dashboard. Moreover unlike the GI Bill Comparison Tool, the Tableau dashboard has data from other external sources that would enable Veterans to identify the school that suit best for their needs.

	<b>GI Bill® Comparison Tool</b>
Tells a story through visual analysis	Table based
Pulls data from multiple sources	Single data source
Interactive and enables users to explore data	Not interactive
Can connect to live and static data sources	Connects to static data only
Created with open access, collaborative community	Proprietary Tool created by VA Department

**Figure 5:** Tableau Dashboard vs. GI Bill Comparison Tool

Most of the top Tableau competitors including the ones shown below such as Qlik, SAS and Microsoft offer similar features and capabilities. However we believe there are few things Tableau does better than all the other competitors. For example Tableau has advanced collaboration options. Most of Tableau’s functionalities are available on a public dashboard, where end-users can easily access. Moreover, Tableau has a dedicated mobile app for different devices ensuring users can access data from any device regardless of their location.

In addition Tableau also has several methods for data investigation. It allows users to investigate data in many different ways including large traditional dashboards as well as complex cloud-based solution. Instead of conducting analyses with a single method, Tableau enables the user to easily combine data from various sources to gain insights.

Finally, Tableau’s productivity suite allows users to connect several data sources and start using them in a matter of minutes. Tableau has a unique technology gives it 10 to 100 times faster data analysis mechanism than most of its competitors.



**Figure 6: Tableau’s Top Competitors**

*Source: Gartner, 2017*

As of 2018, Tableau was recognized as a leader in the Gartner Magic Quadrant for Analytics and Business Intelligence Platforms for the sixth year in a row. We recommend Tableau for this project not only for the above mentioned reasons but also for some of the new features and capabilities the company has on the pipeline. For example, Tableau recently introduced VizQL that revolutionized the way people interact with data by allowing simple drag-and-drop operations to create sophisticated analyses. This feature enables users of all skill sets access to powerful analytical capabilities. In addition Tableau has expanded the number of data sources and size of data users can analyze as well as added robust governance, security, and scalability features.

**Financial Analysis**

According to the Department of Veterans Affairs, the Post-9/11 GI Bill has provided education assistance to over a million veterans and their families, totaling over \$34 billion (NCVAS, 2019). A recent Pew Research Center Report shows that a college education enables students to earn \$650,000 more in their lifetimes than otherwise (Pew Research Center, 2019). In addition, for every dollar tax payers invested in veterans’ higher education benefits they received close to \$7 for each \$1 invested in economic benefit (DJD Institute, 1998).

Return on Investment in GI Bill of Rights		
	In 1952 Dollars	In 1994 Dollars
Cost for Sending GIs to College	\$7.0 billion	\$38.7 billion
Extra National Economic Output Due to Extra Education	\$35.6 billion	\$196.7 billion
Extra Federal Tax Revenues	\$12.8 billion	\$70.7 billion
Total Benefits	\$48.4 billion	\$267.4 billion
<b>Amount Returned for Every \$1 Invested</b>	<b>\$6.90</b>	

**Figure 7: ROI in GI Bill of Rights**

*Source: DJD Institute, 1998*

**Assumptions**

- Out of the 34,000 eligible Veterans above we are assuming 10% (3,400) to leverage the dashboard and identify colleges that suits their needs in the first year. We expect this number to grow exponentially as the dashboard features gets enhanced and more and more Veterans use it. However, conservatively we estimate the number to double every year.
- The maximum tuition, housing and book allowance the VA pays per for undergraduate program is approximately \$30,000 per student.

- The return on investment in economic activities is approximately \$7 for every \$1 invested on Veterans education.

Number of users that used the dashboard and started school	Total tuition, housing and book allowance (\$30K/year)	ROI in economic activities upon graduation (4 years)
3,400	\$102,000,000	\$714,000,000
6,800	\$204,000,000	\$1,428,000,000
13,600	\$408,000,000	\$2,856,000,000
27,200	\$816,000,000	\$5,712,000,000
54,400	\$1,632,000,000	\$11,424,000,000

### Cost Analysis

Almost the entirety of our project is based on volunteer work and resources. It is possible that later phases of this project that involve collecting additional data and data sources that might require some funding. However, we are confident that we can create a valuable tool for veterans based on the data we already have and using the Student Tableau License available to us through Georgetown University. Both Ramsay and Kidan are prepared to volunteer our time and work beyond the end of the MPTM Capstone Course if there is reason to continue the project.

The Tableau dashboard will initially reside on Tableau's Public site ([public.tableau.com](https://public.tableau.com)) for no cost. At this time we do not foresee a need to take on additional costs that would be needed to host our dashboard independently. Tableau Public is more than satisfactory to host our project. We may want to register a .org domain that we can point to the Tableau Public site, however. This domain registration will be a recurring cost of ~\$10 per year.

## **Ethical Analysis**

### **Value Proposition**

The primary justification and motivation for our proposal is an ethical one. We have identified a real-world problem that exists for a specific group of people and we have a plan to help solve that problem, or at least mitigate it. Our Tableau dashboard is not intended to be profitable and almost all of the work that is going into it is on a volunteer basis. Our goal at the end of the project is to help as many veterans as possible connect with the information they need to make an informed decision about how and where to use their GI benefits. If our tool succeeds in doing that, then our project has been a success.

### **Ethical Risks**

In terms of ethical risks associated with this project, the largest is that our dashboard would provide inaccurate information. Therefore, it is imperative that we take steps to ensure the integrity of the data in the tool and to update it at regular intervals. For that reason, the work on this tool must be ongoing.

Furthermore, we intend to collect analytics from the tool that will help us gauge how useful and widely used it is, so that we can work to improve it continually. We do not intend to collect any personally identifiable data from users of the dashboard. If at any point there is a basis to do so, we will take all steps necessary to secure that data and make the Terms of Use for the tool very clear. Any third parties that may have a desire to access data we've collected will also need to abide by strict data privacy guidelines

Lastly, it is critical that our tool remain free from any bias towards particular institutions. We will not engage in any "pay-to-play" behavior, such as letting institutions pay fees to have

their rankings artificially inflated on this tool. There have been scandals recently with companies purporting to provide unbiased information to veterans, when in fact they were collecting money to promote schools that had paid fees. We will take all steps necessary to ensure that our tool, and the data behind it, is accurate, fair, and unbiased.

### **Privacy Concerns**

Although our tool will not contain any Personally Identifiable Information (PII), we do intend to gather website analytics from visitors that use our tool. This information will consist of both demographic and location information. Therefore, it is critical that we have a strong privacy policy in place before we make our tool widely used.

At this time, we do not have a draft of such a privacy policy, yet we can assure anyone who may be concerned that we will at no time sell the user data we collect to third parties or make it available to the public. Said data will only be used to inform and improve the dashboard based on those who use it. This privacy policy will be drafted and linked from the tool prior to any marketing of the tool commencing.

### **Advertising Strategy**

Another ethical concern that has been brought to our attention is whether or not to advertise on the tool itself. On the one hand, advertisements on the dashboard site might be an effective method of raising resources for which to grow and market the tool with. Ad revenue could be used to further acquire data for the project and could be used for marketing and outreach as well.

However, history has shown that projects with the best of intentions at the start can quickly become revenue focused, and we are concerned that if we start down that path of ad revenue that we will lose perspective of the volunteer nature of this project.

Furthermore, many third party advertisement agencies are not selective about who they take on as clients and we would have no way to filter out potentially malicious advertisers if we chose to go that route. Unfortunately, raising advertisers who meet our ethical standards may be a tall order.

One option that may work in terms of advertising in an ethically honest way is to participate in affiliate sharing agreements. That is, we can identify other organizations that have demonstrated a commitment to ethical operations and advertise their product or service on our site in exchange for them advertising our dashboard on theirs. In this way we can effectively steer more traffic to our tool without worrying about some of the ethical concerns that comes with third party advertising organizations.

### **Conclusion**

By building a Tableau dashboard to assist veterans with identifying schools and institutions that would be a good fit and match for them to use their GI Bill education-related benefits, we hope to provide real-world value to the lives of those veterans, their families, their communities, the economy, and more.

We have done our best to lay out a plan for this project that is ambitious, purposeful, and determined. Yet, we also recognized the fact that we need this project to be realistic and attainable, or else it is all for naught.

We believe our project is indeed feasible (our Version 1.0 dashboard is intended to demonstrate just that) and we intend to see it through beyond the scope of the Capstone Course

at Georgetown University. We have already made connections with contacts at several universities, staff at Tableau, and others that we think will aid us in accomplishing this goal. If successful, our Tableau dashboard will connect veterans to the information they need in a way that is easier and more efficient than any means available currently.

We hope you continue to follow the progress of our Tableau Dashboard and hopefully in the near future you will see it being advertised and marketed to veterans throughout the country.

## References

Ajenstat, F. (2017, February 21). Tableau five years a leader in Gartner's Magic Quadrant for Analytics. Retrieved from <https://www.tableau.com/about/blog/2017/2/tableau-five-years-leader-gartners-magic-quadrant-analytics-66133>

Excel vs Tableau - Top 10 important Comparisons You Must Learn. (2019, April 19). Retrieved from <https://www.educba.com/excel-vs-tableau/>

Gross, N. (2018, June 11). Post-9/11 GI Bill usage dropped sharply. Cause for concern? Retrieved from <https://rebootcamp.militarytimes.com/news/education/2018/06/11/post-911-gi-bill-usage-dropped-sharply-cause-for-concern/>

Gross, N. (2018, June 11). Post-9/11 GI Bill usage dropped sharply. Cause for concern? Retrieved from <https://rebootcamp.militarytimes.com/news/education/2018/06/11/post-911-gi-bill-usage-dropped-sharply-cause-for-concern/>

American Community Survey PUMS, 2017, U.S. Census Bureau retrieved from <https://www.census.gov/programs-surveys/acs/data/pums.html>

GI Bill of Rights: A Profitable Investment for the United States, retrieved from [https://www.djdinstitute.org/h\\_gifact.html](https://www.djdinstitute.org/h_gifact.html)

National Center for Veterans Analysis and Statistics, retrieved from <https://www.va.gov/vetdata>

Pew Research Center- Military and Veterans, retrieved from <https://www.pewresearch.org/topics/military-and-veterans/>

Office of Public and Intergovernmental Affairs. (2016, September 01). Office of Public and Intergovernmental Affairs. Retrieved from <https://www.va.gov/opa/pressrel/pressrelease.cfm?id=2490>

Top 10 Alternatives to Tableau: Analysis of Popular Business Intelligence Tools. (n.d.).

Retrieved from <https://financesonline.com/top-10-alternatives-to-tableau-analysis-of-popular-business-intelligence-tools/>

Writers, S. (2019, February 28). Over 150 Resources for Student Veterans & Their Families .

Retrieved from <https://www.accreditedschoolsonline.org/resources/higher-education-for-military-Veterans/>