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The Influence of Connections to Veteran Populations on Faculty and Staff Perceptions of Student Veterans and Service Members

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Abstract

This paper presents an in-depth look at aspects of a larger study that measures perceptions and possible biases or dispositions towards a belief regarding veterans and service members that was initiated in 2022. Specifically, the paper focuses on analyzing the faculty and staff perceptions as a function of both the number of proximal connections to family and friends who are veterans and the presumed closeness of those connections. Proximity was categorized as: self as veteran; spouse as veteran; grandparent; parent; adult child; sibling; extended relative; friend; former or current student; and no veteran connection. Preliminary results suggest that having many connections to veteran populations is more impactful on one's opinion and beliefs about stereotypes than having a more direct familial tie. Through this work, a deeper understanding of that impact has been developed as it relates to many common stereotypes of students who are veterans or service members. Understanding the beliefs and the connections that impact those beliefs could be an important step in better supporting this dynamic group of higher education students. Understanding the strengths of the veteran and service member population as well as the challenges and biases that the population faces could inform the development of campus-wide interventions or contribute to an increased self-awareness of key influencers on the experiences of student veterans or service members on one's campus.

Introduction

Many popular culture stereotypes exist about veterans. Regardless of the origin of the stereotypes, it is interesting to work to better understand the potential impact stereotypes have on veterans and service members as they pursue higher education. With less than one percent of the U.S. population serving in the active duty military, even after twenty years of conflict, only about 6% of the U.S. adults are veterans [1]. This marks a significant drop since the 1980s and is the lowest percentage since WW2; it can be challenging for civilians to understand a veteran's experience [2] and this lack of understanding often leads to negative perceptions.

After twenty years as a nation at war, veterans face many challenges in reintegrating back into the population. Many veterans choose to pursue higher education for a variety of reasons but often face negative perceptions from faculty and staff who may not have any personal connection to veterans. Perceptions and biases about military veterans are often popularized and distorted by the media and entertainment industry [3] – [5]. Some research suggests that American civilians often see veterans as a problematic population, broken or deviant [3, 6, 7]. This carries through in the perception of veterans at institutes of higher education where veterans may experience marginalization and microaggressions by faculty, staff, and other students based on their veteran status [3]. In some instances, student veterans may be seen as "high maintenance", especially if compared to the traditional student population [8]. These opinions and biases against student veterans can make supporting this student group in their academic success challenging [9].

Service members and veterans are a protected class under VEVRAA (Vietnam Era Veterans; Readjustment Assistance Act of 1974). The Department of Labor clarifies that under VEVRAA

there are four “protected veteran” categories, which include a veteran who served on active duty in the U.S. military during war [10]. Veterans may also be protected under the Americans with Disabilities Act. Veterans develop valuable skills, leadership traits, the ability to work under pressure and the ability to work as a member of a team while in the military, making them highly sought after for roles in government agencies and the private sector [11]. However, for some jobs, a college education is required. Creating a welcoming environment in higher education for this non-traditional student group is important to the student’s success. Numerous studies have shown that faculty and staff in higher education who work directly with student veterans are critical to supporting this student population [12].

The previous work [13] provided a wide overview of possible correlations between variables (institutional profiles, demographics, faculty type, proximity) and common perceptions towards veterans. A brief overview of the proximity to veterans showed that the more distant one’s relationship with veterans, the more likely one is to have a biased belief regarding veterans and PTSD. The previous work also showed that on average, the closer the relationship one had with a veteran, the more the respondent’s beliefs aligned with the veterans’ responses. This follow-on paper dives deeper into the influence of one’s relationships with veterans on stereotypes relating to student veterans’ prior learning, motivation, organization, community-mindedness, relevant skills, rigidity, and compliance in thinking, as well as likelihood of suffering from PTSD. Other variables, such as faculty role, demographics, Green Zone training, etc., are not explored. In addition to providing more details on the influence of this important characteristic, the paper will provide an update to previously reported results, as the number of survey respondents has increased by approximately 50% [13].

Methods

A survey using a 5-point Likert Scale (1: Strongly Disagree – 5: Strongly Agree) was developed and deployed at six institutional partners and one national conference. Institution Review Boards approved the study at all participating institutions. The partner institutions circulated the survey to engineering faculty and staff members with n=162 respondents at the time of this publication. The partner institutions varied from public to private and from Land Grant R1s to teaching-focused and military institutions. The discipline of the respondents was not requested, only that they were engineering faculty or staff.

A mixed model logistic regression was applied to the survey responses and tested for correlations based on role, institutional profile, demography, and proximal connections to veterans. For this paper, researchers analyzed all the survey questions with respect to the proximity of the respondents to veterans. Each survey question was evaluated based on agreement or disagreement targeting common veteran-associated stereotypes and myths for both veterans and civilians. Table 1 shows the veteran and civilian survey questions.

Table 1: Survey Questions

Veteran Question Number	Veteran Related Question	Civilian Question Number	Civilian Related Question
1	Veterans and service members are **more likely** to suffer from PTSD than civilians.	13	Civilians are **less likely** to suffer from PTSD than veterans and service members.
2	Veterans and service members are **more likely** to be educated than civilians.	14	Civilians are **more likely** to be educated than veterans and service members.
3	Veterans and service members are **more likely** to be organized than civilians.	15	Civilians are **less likely** to be organized than veterans and service members.
4	Veterans and service members are **more likely** to take initiative on their own than to follow directives as compared to civilians.	16	Civilians are **more likely** to take initiative on their own than to follow directives as compared to veterans and service members.
5	Veterans and service members are **more likely** to participate in community and social events than civilians.	17	Civilians are **more likely** to participate in community and social events than veterans and service members.
6	Veterans and service members are **more likely** to seek help or advice than civilians.	18	Civilians are **more likely** to seek help and advice than veterans and service members.
7	Most veterans and service members have served in combat roles.	xx	No matching question
8	Veterans and service members are **more likely** to have dermal art (tattoos, piercings) and unique hairstyles than civilians.	19	Civilians are **less likely** to have dermal art (tattoos, piercings) and unique hairstyles than veterans and service members.
9	Veterans and service members are **more likely** to be diverse or members of underrepresented minority groups than civilians.	20	Civilians are **less likely** to be diverse or members of underrepresented minority groups than veterans and service members.
10	Veterans and service members are **more likely** to be rigid thinkers than civilians.	21	Civilians are **more likely** to be rigid thinkers than veterans and service members.
11	Veterans and service members are **more likely** to expect special recognition because of their service status.	xx	No matching question
12	Veterans and service members are **more likely** to have relevant job skills than civilians.	22	Civilians are **more likely** to have relevant job skills than veterans and service members.

Proximity to veterans is described as the respondents' personal or professional social connections to a veteran(s). These connections could be immediate family, distant family or acquaintances. The survey also allowed the researchers to determine the breadth of connections as well as the degree of connection. Dimensions for this category included: self as veteran; spouse as veteran; grandparent; parent; adult child; sibling; extended relative; friend; former or current student; and no veteran connection [13].

Survey items 7 and 11 capturing veteran combat experience and expectations of veterans to receive special recognition do not have a civilian corollary, as indicated in Table 1.

The survey data was provided to the team in pivot tables with all identifying data removed. The data was then cleaned to ensure the most accurate results were utilized in the analysis. First, respondents who did not answer all of the questions were removed as well as those who "straight-lined" the results and chose the same answer for all questions. Respondents were also checked for inconsistent responses between paired questions. Table 2 shows the total number of respondents and the number of respondents following the downsizing. The response means and absolute value differences were then calculated for each response as a function of the proximity to veterans and the number of contacts with veterans.

Table 2: Data Reduction Numbers

"Straight-lined" Responses	Incomplete Responses	Total Respondents Retained
2	4	162

Findings

Table 3 shows the respondents' proximal connections to veterans. As noted previously, the respondents could choose multiple answers for this question, which allows the researchers to determine the number of layers of connections as well as the level of the connection. The data collection process does not, however, specify the number of veterans that the respondents know in each category or how frequently they interact. All respondents represent faculty or staff at partner institutions who have direct contact with students who are veterans.

Table 3: Proximity (Connection) to veterans

Proximity (Connections) to Veterans	Number of Responses
I am a veteran	23
Spouse, sig other, or former spouse is/was a veteran	23
My Grandparent is/was a veteran	84
My parent is/was a veteran	67
My adult child is/was a veteran	9
My sibling is/was a veteran	15
My extended relative is/was a veteran	98
A friend of mine is/was a veteran	118
A former or current student is/was a veteran	83
No connections with veterans	2

Table 4: Survey results for paired questions as a function of proximal connections to veterans

Stereotype Dimension (Q#)	Veteran (Vet / Civ)	First Level (Vet / Civ)	2nd Level + (Vet / Civ)	2nd Lvl Only (Vet / Civ)	All Responses (Vet / Civ)
PTSD (1/13)	3.391 / 3.348	3.699 / 3.422	3.838 / 3.456	4.041 / 3.486	3.889 / 3.478
Educated (2/14)	3.217 / 2.652	3.217 / 2.699	3.115 / 2.858	3.041 / 2.986	3.117 / 2.858
Organized (3/15)	3.957 / 3.565	3.988 / 3.458	3.919 / 3.466	3.849 / 3.438	3.907 / 3.457
Takes Initiative (4/16)	3.696 / 2.348	3.687 / 2.506	3.581 / 2.649	3.479 / 2.822	3.586 / 2.667
Engage in Community (5/17)	2.870 / 3.261	3.157 / 3.024	3.149 / 3.047	3.164 / 3.055	3.154 / 3.037
Seek Help (6/18)	2.609 / 3.217	2.735 / 3.133	2.628 / 3.209	2.507 / 3.301	2.617 / 3.185
Served in Combat (7)	2.696	2.542	2.534	2.493	2.549
Dermal Art (8/19)	2.435 / 2.435	2.566 / 2.506	2.554 / 2.574	2.507 / 2.603	2.543 / 2.562
Diverse (9/20)	3.087 / 3.087	3.060 / 2.867	3.027 / 2.851	3.000 / 2.836	3.031 / 2.846
Rigid Thinker (10/21)	2.783 / 2.696	2.952 / 2.699	3.000 / 2.662	3.055 / 2.630	3.031 / 2.648
Special Recognition (11)	2.435	2.181	2.324	2.534	2.358
Relevant Skills (12/22)	3.435 / 2.565	3.663 / 2.506	3.595 / 2.568	3.507 / 2.685	3.580 / 2.599

Table 4 displays the mean response for each of the survey questions for the given class of respondents, based on their proximal connection to veterans. Those with no connections to veterans were not reported because the number of respondents in that class was small (n = 2). Numbers highlighted in red indicate a survey item where the likelihood scale was reversed (less likely instead of more likely) for the paired veteran/civilian questions.

Upon detailed inspection of the data, the following trends are notable:

Beliefs Regarding PTSD in Veterans

There was a strong bias of 3.889 towards the belief that veterans are more likely than civilians to suffer from PTSD. This belief decreased towards neutral (a score of 3) the closer the relationship a respondent had to a veteran (4.041 for those with only 2nd level connections, 3.699 for those

with 1st level connections, and 3.391 for those who were veterans). The increase in participants yielded results that verify the previous findings.

Beliefs Regarding Veterans' Education, Skills, and Qualities
Related to the likelihood of veterans being more educated than civilians, the bias was slightly above neutral for all respondent categories, and there was a slight bias towards a belief that civilians are more likely to be diverse or members of underrepresented groups than veterans.

There was a strong bias of 3.907 towards the belief that veterans are more likely to be organized than civilians. The proximal relationship of the respondent does not appear to have much of an influence on this belief as the responses were in the 3.85-3.99 range for all groups. Similarly, there was a bias towards the belief that veterans are more likely than civilians to take initiative. This belief was uniform across the groups but was lower in magnitude than the beliefs related to PTSD or organization (3.48 - 3.70). The belief in the veterans being more likely to have relevant job skills was also consistent across all groups and moderate, ranging from 3.51 - 3.66 for most categories, with it being slightly lower (3.44) among respondents who were veterans.

Belief in the likelihood of veterans to participate in community or social activities was slightly above neutral, but it is interesting to note that the lowest response average, indicating a slight bias towards veterans not engaging in community activities was reported by veterans themselves.

The results also indicate a belief that veterans are less likely than civilians to seek help, with responses between 2.51 - 2.74 across the groups.

There was a moderate bias towards a belief that civilians are more likely to have dermal art than veterans which was relatively uniform across the groups.

Beliefs Regarding Veterans' Combat Experience
There seemed to be recognition that not all veterans serve in combat roles with a moderate bias towards disagreement with a statement to the contrary. This supports the available data that shows approximately 60% of veterans have been deployed, but only 20% were deployed to a combat zone and only 10% have engaged in combat while deployed [14]. Similarly, there seemed to be disagreement with the belief that veterans seek special recognition for their service.

Conclusion

The largest bias towards a belief in the 12 stereotypes tested throughout the study related to beliefs that veterans are more likely to be organized than civilians and they are more likely to suffer from PTSD than civilians.

The study also showed moderate biases towards the beliefs that veterans are more likely to take initiative and to have relevant job skills than civilians, and they are less likely to seek help or have dermal art.

The closeness of one's relationship to a veteran was shown to temper the belief towards veterans suffering from PTSD. The approximate closeness of one's relationships with veterans had less of an effect on the other survey items. The survey also highlighted situations where a veteran's own

beliefs related to the stereotypes were more biased than those with the distant relationships, as in the case of seeking special recognition.

A limitation of the demographic study is that information about the closeness of one's relationship with veterans is not measured, and the perceived "distance" of the connection is used as a proxy for closeness. Similarly, the number of connections one had in each category was not collected. The number of categories of connections could be determined and recorded, but the number of connections to each cohort was not recorded. Future work will refine the demographic categories to also include respondents' age and the age and service era of veteran connections.

As one designs and implements projects and learning activities in the engineering classroom, it is clear that a bias towards believing students who are veterans will be more likely to take initiative and be organized, and less likely to seek help could unintentionally introducing adverse learning effects that result from student veterans not being offered classroom supports and services that traditional students receive, affecting students in both individual and group work situations.

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References

[1] K. Schaeffer, "The changing face of America's veteran population," Per Research Center, 8 November 2023. [Online]. Available: https://www.pewresearch.org/short-reads/2023/11/08/the-changing-face-of-americas-veteran-population. [Accessed 12 November 2024].

[2] M. L. Anderson and J. Goodman, "From Military to Civilian Life: Applications of Schlossberg's Model for Veterans in Transition," *Career Planning & Adult Development Journal,* vol. 30, no. 3, 2014.

[3] G. A. Phillips and Y. S. Lincoln, "Introducing Veteran Critical Theory," *International Journal of Qualitative Studies in Education,* vol. 30, no. 7, pp. 656-668, 2017.

[4] C. Stone, "Stereotypes of Veterans," in *Stereotypes:The Incidence and Impacts of Bias*, Praeger, 2020, pp. 213-223.

[5] J. Chapin, M. Mendoza-Burcham and M. Pierce, "Third-Force Influences:Hollywood's War Films," *The US Army War College Quarterly:Parameters,* Autumn 2017.

[6] D. Mittal, K. L. Drummond, D. Blevins, G. Curran, C. Patrick and G. Sullivan, "Stigma associated with PTSD: Perceptions of treatment seeking combat veterans.," *Psychiatric Rehabilitation Journal,* vol. 36, no. 2, pp. 86-92, 2013.

[7] L. C. Montalvan, "Veteran Stigma: "What Does My Country think of Me?"," Huffpost, 5 July 2009. [Online]. Available: https://www.huffpost.com/entry/veteran-stigma-what-does_b_211530. [Accessed 21 November 2024].

[8] P. A. Brown and C. Gross, "Serving Those Who Have Served—Managing Veteran and Military Student Best Practices," *The Journal of Continuing Higher Education,* vol. 59, pp. 45-49, 2011.

[9] C. Carter, J. H. Lim, C. Interiano-Shiverdecker and J. Dahlberg, "Unlearning As Learning? A Critical Analysis of Student Veteran Support at a Veteran-Friendly Campus," *Journal of Veteran Studies,* vol. 9, no. 1, pp. 190-202, 2023.

[10] Office of Federal Contract Compliance Programs, "Know Your Rights - Protected Veterans' Rights," 23 September 2024. [Online]. Available: https://www.dol.gov/sites/dolgov/files/ofccp/regs/compliance/factsheets/FACT_Veterans_Sept16_ENGESQA508c.pdf.

[11] S. Shepard, D. K. Sherman, A. MacLean and A. C. Kay, "The Challenges of Military Veterans in Their Transition to the Workplace: A Call for Integrating Basic and Applied Psychological Science," *Perspectives on Psychological Science,* vol. 16, no. 3, pp. 590-613, 2021.

[12] J. H. Lim, C. G. Interiano, C. E. Nowell, P. T. Tkacik and J. L. Dahlberg, "Invisible Cultural Barriers: Contrasting Perspectives on Student Veterans' Transition," *Journal of Student College Development,* vol. 59, no. 3, pp. 291-308, 2018.

[13] R. J. Rabb, A. G. Eggleston, C. Mobley, A. Minichiello, R. W. Welch, J. L. Dahlberg, D. M. Feinauer, G. Crawford and S. Shaw, "Faculty and Staff Perceptions of Student Veterans Pursuing a Degree in Engineering," in *American Society for Engineering Education 2024 Annual Conference and Exposition*, Portland, OR, 2024.

[14] E. Bledsoe, "The Soldier Project," 29 January 2025. [Online]. Available: https://www.thesoldiersproject.org/what-percentage-of-the-military-sees-combat/. [Accessed 29 January 2025].