PRACTICE BRIEF
Classroom Strategies for Teaching Veterans with Post-Traumatic Stress Disorder and Traumatic Brain Injury

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Abstract

Postsecondary institutions currently face the largest influx of veteran students since World War II. As the number of veteran students who may experience learning problems caused by Post-Traumatic Stress Disorder and/or Traumatic Brain Injury continues to rise, the need for instructional strategies that address their needs increases. Educators may unwittingly expose these students to uncomfortable or distressing situations. Equipped with basic knowledge about the brain and memory, college faculty can provide instruction and assessment in ways that allow all students in the classroom to feel successful, including "wounded warriors." This article provides suggestions for research-supported strategies that postsecondary faculty can use to promote wider access for an increasingly diverse student population.

Keywords: Veterans, traumatic brain injury, post-traumatic stress disorder, classroom strategies, teaching, learning

Postsecondary institutions currently face the largest influx of veteran students in the classroom since World War II, with over 564,000 veterans from the wars in Afghanistan and Iraq receiving educational benefits (Cook & Kim, 2009). In addition to the leadership and experience these students bring to the classroom, many must overcome the challenges created by post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI) (Department of Veterans Affairs 2010). In a study conducted by the American Council on Education, veteran students reported problems meeting academic expectations while managing service-connected injuries, including bodily injuries, TBI and PTSD (Steele, Salcedo, & Coley, 2010). As Brunning, Schraw, and Ronning (1999) noted, "There are very few educational decisions to which the cognitive issues of memory, thinking, and problem solving are not relevant" (p. iv).

Many colleges and universities are rapidly adding new support services specifically geared to veteran students transitioning to academic settings, but these efforts need to extend into the classroom (Madaus, Miller, & Vance, 2009). Unfortunately, dismal graduation rates persist as these "wounded warriors" transition from military to civilian life on college campuses (National Survey of Student Engagement [NSSE], 2010).

Equipped with the knowledge of the impact of PTSD and TBI on memory and learning, educators can incorporate teaching and learning strategies that will assist returning veterans with these disorders while meeting the needs of all students in the writing classroom.

Researchers have found a significant association between PTSD and impairments in cognitive functioning (Bremner, et al, 2003; Geuze, et al, 2007; Samuelson, et al, 2009, DeBellis, Hooper, Spratt, & Woolley, 2009), specifically with tasks requiring attention, verbal memory, and new learning even after controlling for IQ and attention deficits. In a meta-analysis of 32 prior studies examining PTSD and verbal memory, Johnsen and Asbjørnsen (2008) found that PTSD and impairment in verbal memory are strongly associated, particularly in the population of war veterans. In 2009, Johnsen and Asbjørnsen studied the role of encoding strategies in learning new material in patients with PTSD and found evidence of impaired use of organizational strategies, suggesting that the disorder interfered with executive processes used while learning new material. The researchers suggested that specific interventions geared towards these verbal memory impairments may provide veterans with a better educational prognosis.

In addition to problems caused by memory and learning impairments, traumatic brain injuries (TBI) can cause physical, perceptual, and sensory difficulties that present uniquely for each individual (Church, 2009). Vision may be reduced, hearing impaired and coordination loss experienced -- all creating a unique set of challenges for veterans in a traditional classroom setting. Again, research has indicated cognitive interventions utilizing memory strategies focused on attention, encoding, storage, and retrieval, as well as environmental accommodations within the classroom, increase academic success (Barker-Collo & Feigin, 2008; Church, 2009).

Research indicates that ineffective learners benefit from instruction on strategy use (Ceci, 1987; Harris & Qualls, 2000). Furthermore, studies indicated strategy instruction benefits all students in the classroom (Pressley & Harris, 2008). In the past, research focused primarily on memory strategies using mnemonics, a system of elaborate encoding and memory traces used to add information to a set of to-be-remembered facts (Ceci, 1987; Sharifian 2002). Additionally, empirical support has been found for the "generation effect" in which students experience increased recognition and recall of learned information when they develop their own strategies (Kinjo & Snodgrass, 2000; Moshfeghi & Sharifian, 1998; Slamecka & Graf, 1978; Snodgrass & Kinjo, 1998). More recently, research has focused on elaborative self-generated strategy use to improve memory for patients who experience brain disorders such as TBI. Chiaravalloti and DeLuca (2002) identified improved performance of tests of recall and recognition with self-generation of verbal information. Building on elaborative self-generation, Active Learning strategies is an instructional approach that encourages students to create personal connections to new material that increases retention of material frequently addressed in postsecondary disciplines (Odem, Glenn, Sanner, & Canella, 2009).

Classroom Applications

The physical layout of the classroom can play a large role in any student's learning experience, exponentially so for veteran students. PTSD and TBI contribute to a "sensitized hyper arousal response" (Perry, 2001) where an extreme bodily stress response results from a generalized reminder of the initial traumatic event often referred to as a "trigger" (Schore, 2002). When a veteran diagnosed with PTSD becomes triggered, his/her body's stress system reacts as it has been trained to do in the past in order to survive. After repeated exposures to extreme stress, the body no longer requires the full onset of a traumatic experience to develop the "fight or flight" response. It may simply take a reminder of the original traumatic experience to have a full-blown stress reaction. The body reacts in survival mode – primed and ready to run away or fight off the attacker. Blood is pumped away from the brain and into the major muscle groups. These reactions can significantly impede the student's ability to learn (Nijenhuis, Van der Hart, & Steele, 2004; Schore, 2002; Perry, 2001; Perry, 1997).

Holding this extreme physiological reaction in mind, the physical experience of the classroom itself may be a potential trigger for a returning veteran (desks crammed together or student backpacks, books, and personal belongings block the aisles, etc.). This situation can prevent a quick exit and trigger an extreme stress response in veteran students. In a war zone, blocked pathways could mean potential death for a soldier needing rapid escape from enemy fire. To clear aisles, ask students to store belongings beneath desks or behind the instructor's podium or desk. Many schools employ a safety officer responsible for ensuring safe egress from classrooms and hallways. If possible, enlist the help of the safety officer to help structure a safe classroom. Additionally, the experience of loud, sharp noises or aggressive and domineering body movements could trigger veterans with PTSD or TBI. Notify students before making loud noises or sudden movements when possible. If it is necessary to physically touch a student, always ask permission first. For example, "May I touch your arm in order to demonstrate the correct way to handle that cuvette?" Avoid hovering above a student sitting in a desk. Either squat next to the desk or roll a chair next to the desk. Lighting may also trigger stress responses or overload sensory responses in students with an injured brain. Consequently, an educator should avoid leaving the classroom in complete darkness.

Another consideration is assigned student seating, which may interfere with learning for veteran students. Assigned seating can position a veteran in a seat where he or she feels exposed and unsafe. A veteran student might also experience hearing or vision impairments (Church, 2009) that require preferential seating. Allowing freedom of choice in seating avoids potential problems. Additionally, the educator should explicitly

note at the beginning of the semester that, if a student needs to leave the classroom, he/she may simply do so. Reading body language for obvious signs of stress can prove to be a useful skill for any educator. Upon detecting signs of stress, the educator may move quickly to diffuse the situation by redirecting the classroom discussion or altering the activity. As noted in, *From Soldier to Student* (Cook & Kim, 2009), very basic training can be provided to faculty as professional development to provide a "veteran friendly" environment. Providing a calm and comfortable classroom environment helps all students focus on learning and academic success.

Academic/Content Strategies

Research on learning and cognition suggests that instructors can utilize self-generated learning strategies to better aid the process of encoding new learning into long-term memory for effective recall (Lengenfelder, Chiaravelloti, & DeLuca 2002). Activating prior knowledge before introducing a new concept or reading allows students to generate ideas from their existing body of knowledge. The self-generated knowledge allows the student to create a "hook" on which to hang new information. Retrieval clues help categorize the placement of the new information in the student's long-term memory, enabling better access to the material (Pressley & Levin, 1987; Vallar & Papgno,1996; Sharifan, 2002). Experiential learning "hooks" new material for storage by pairing the new learning with a project related to the concept or by physically visiting the location, either by a field trip or a multi-media visual experience (Washbourn, 1996) (See Appendix C).

Veterans may experience problems learning new information due to memory, visual, or auditory problems. It becomes important to add auditory and visual stimuli to important information. In an era of readily available internet video, tidbits of visual stimuli are easy to add to any lesson. If discussing methods for planning a written assignment, present a video of a student utilizing a graphic organizer to plan the compare and contrast essay. Textbook publishers provide multimedia resources for instructors including short instructional videos, graphically interesting PowerPoint presentations that incorporate audio narration, and podcasts that assist auditory learners (See Appendix A). These formats are easily uploaded to Blackboard and other course-management platforms or academic classroom websites. Software programs allow students to generate mind maps, concept webs, and graphic writing planning maps (See Appendix B). Graphic organizers assist students with note taking, organizing information, connecting information to self and procedural directives by visually presenting information in a hierarchical fashion (Dye, 2000). Researchers have indicated that both technology use and graphic organizers assist students with TBI (Arroyos-Jurado & Savage, 2008). Educators can use graphic organizers tailored for specific use in the classroom. For example, writing instructors can create a partially filled-in reading guide that requires the student to add specific material found in the text or ask students to create their own using a software program (See Appendix B).

Evidence also suggests classroom assignments connected to daily life enhance student interest and comprehension (Odom et al, 2009). Again, this instructional approach provides a "hook" all students can use for new learning and memory encoding. Allowing students to choose topics of interest encourages more engagement throughout the research process. A service learning component can put student driven-research to work, helping the community or campus (See Appendix C).

Due to problems with executive processes (Johnsen & Asbjørnsen, 2009), recalling rules for writing or decoding may be difficult when writing lengthy papers. Students with PTSD or TBI may have difficulty correctly formatting written language. This problem also applies to remembering assignment instructions and formatting requirements. While students may understand an assignment on the day it was given, they may have problems remembering the steps or procedures for completion several days later (Arroyos-Jurado & Savage, 2008). Providing step-by-step directions and task lists can help not only students with PTSD or TBI but all students in the classroom reorient themselves to assignments while working independently. Creating a series of deadlines for smaller chunks of a large writing assignment helps students organize their tasks without facing the sometimes daunting challenge of writing a 10-page research paper. For example, the research question and keywords might be due first, the working source list second, followed by the thesis statement and planning document (See Appendix D). Each step constitutes movement toward the complete assignment, helping students who find themselves paralyzed by large tasks.

An instructor's assessment strategies might require re-evaluation in regards to returning veterans with PTSD or TBI. While asking students direct questions

during class can promote learning, questioning students in this spontaneous manner might cause extreme stress for individuals with memory problems or anxiety issues. In order to facilitate classroom discussions, students can take notes using graphic organizers (See Appendix B) that facilitate greater critical thinking about the readings being discussed. Students can use such a form to take notes about items they wish to discuss further, question, or comment on during class. During discussions, students then have a visual prompt for the points they wish to make. Alternatively, digital audio recorders allow students to record lectures and discussions to cue later reminders. Instructors can also provide students with specific questions about the topic or concept that will be discussed during the next class meeting (See Appendix C). The questions serve as a pre-reading activity and aid the student's preparation for classroom discussions.

Conclusion

Equipped with basic knowledge about the brain and memory, college instructors can provide content and assessment in ways that accommodate the needs of an increasingly diverse student body, including the growing number of veteran students with PTSD and/or TBI. Unfortunately, many veterans experience difficulty transitioning back to civilian life. A variety of decisions and practices can help educators create a learning environment that is believed to help "wounded warriors" as they begin or renew their postsecondary experiences. Successful adaptation of both the physical and cognitive aspects of the classroom experience can be of great assistance to many students, including returning soldiers.

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About the Author

Jennifer Blevins Sinski received her BA degree in liberal studies from Bellarmine University, an MAT in Education/Special Education from Bellarmine University, an MA in English Literature from Murray State University and has been accepted in the PhD in Applied Sociology program at University of Louisville. Her experience includes teaching high school students with learning and behavioral disorders. She is currently an instructor in the Department of English at Elizabethtown Community & Technical College and teaches a course on the Impact of Trauma on Development at Bellarmine University. Her research interests include the impact of trauma and PTSD on learning. She can be reached by email at jsinski0001@kctcs.edu or jwilliams@bellarmine.edu

Appendix A

Free Multimedia Resources

YouTube (www.youtube.com)
Many videos and video clips that can be used for instructional purposes

TeacherTube (www.teachertube.com)
Videos and clips; many other instructional tools, as well.

The New York Times - Lesson Plans (http://learning.blogs.nytimes.com/category/lesson-plans/)
Up-to-date news and lesson plans

Atomic Learning - Windows Movie Maker 2 Training (http://www.atomiclearning.com/moviemaker2)
Tutorial series on Windows® Movie Maker 2. Windows Movie Maker 2 lets you create, edit, and share your movies on your PC.

Windows Live Essentials: Photo Gallery (http://www.microsoft.com/windowsxp/using/digitalphotography/photostory/default.mspx)
Create slideshows using your digital photos.

Audacity, Free Cross-Platform Sound Editor (http://audacity.sourceforge.net/)
Audacity is an easy-to-use audio editor and recorder for Windows, Mac OS X, GNU/Linux, and other operating systems.

Skype (http://www.skype.com/)
Use Skype to bring guest speakers into the classroom without any travel arrangements.

Kathy Schrock's Guide for Educators: Digital Gadgets (http://school.discoveryeducation.com/schrockguide/gadgets.html)
Podcasting information and tools.

Appendix B

Graphic Organizer Resources

English Companion - Tools for Teachers (http://englishcompanion.com/classroom/notemaking.htm)
Graphic organizers for notetaking, reading comprehension, and the organizer I use for discussion notes - available free.

Inspiration Software (http://cf.inspiration.com/)
Inspiration software for creating graphic organizers, mind maps, writing process planning.

Gliffy (http://www.gliffy.com/)
Helps you create process flows, organization charts, network diagrams, and technical drawings.

Mindomo (http://www.mindomo.com/)
Mindomo is a versatile Web-based mind mapping tool.

Appendix C

Active Learning for the College Classroom

California State University - Active Learning for the College Classroom
(http://www.calstatela.edu/dept/chem/chem2/Active/)
Links to activities, lesson plans and assessment.

Penn State - Schreyer Institute for Teaching Excellence
(http://www.schreyerinstitute.psu.edu/Tools/Rubric/)
Links to rubric makers and ready-made rubrics for many types of writing and presentation assignments.

Appendix D

Isearch Essay & Digital Narrative Project Checklist
(Created by Jennifer Blevins Sinski)

Name: _____ Days: _____ English 102

Essay #1 - How I chose my topic, what I already know about my topic, what I want to learn about my topic, my specific research question/statement, and possible search terms and locations for informational sources. See Essay #1 Detail Planning Sheet Detail Planning Sheet & grading rubric. Don't forget to collect digital images, screen shots and/or video along the way.

    Peer Review #1 – 10 pts – Due: _____ Use checklist #1
    Peer Review #2 – 20 pts – Due: _____ Use checklist #2
    Submit for grading – 100 pts: _____ After grade is received, may revise and resubmit

Essay #2 - Write a composition describing your research process; in it you will address the following topics - List and describe the sequence of steps in your search. Analyze problems in locating information and your response to these problems. Describe breakthroughs—when the research really got interesting. Describe the best sources of information for your topic. Write about how you changed, expanded, or revised your research question/ statement. Acknowledge others who helped you carry out your search. See Essay #2 Detail Planning Sheet & grading rubric. Don't forget to collect digital images, screen shots and/or video along the way.

    Peer Review #1 – 10 pts – Due: _____ Use checklist #1
    Peer Review #2 – 20 pts – Due: _____ Use checklist #2
    Submit for grading – 100 pts: _____ After grade is received, may revise and resubmit

*** You may begin recording your completed essay #1 & 2 for voice over narration – See me to check out headphones/microphones. See Moviemaker/Audacity tutorials.

Essay #3 - Write a composition comparing what you thought you knew and imagined with what you actually discovered and offer some personal commentary and/or draw some conclusions. See Essay #3 Detail Planning Sheet & grading rubric. Don't forget to collect digital images, screen shots and/or video along the way.

    Peer Review #1 – 10 pts – Due: _____ Use checklist #1
    Peer Review #2 – 20 pts – Due: _____ Use checklist #2
    Submit for grading – 100 pts: _____ After grade is received, may revise and resubmit

*** Finish recording your completed essay #3 for voice over narration. – See me to check out headphones/ microphones. See Moviemaker/Audacity tutorials.

Create Movie – Using moviemaker, combine audio with visuals to create final movie.