



JOURNAL OF MILITARY LEARNING

April 2019

**Tacit Knowledge Cultivation as an Essential
Component of Developing Experts p3**

Babin and Garven

**Military Education as a Dimension of Security
in the Western Hemisphere p19**

Culkin

Motivating and Educating Millennials p34

Trent

**Impacting Student Veteran Success
through Military Credit Articulation p47**

Giardello and Appel



JOURNAL OF MILITARY LEARNING

April 2019, Vol. 3, No. 1

**Commander, U.S. Army Combined Arms Center;
Commandant, Command and General Staff College**
Lt. Gen. Michael D. Lundy

**Provost, Army University; Deputy Commandant,
Command and General Staff College**
Brig. Gen. Troy D. Galloway

Editor; Academic Affairs Division Chief, Army University
Col. Paul E. Berg, PhD

Editorial Board Members

**Director, Directorate of Academic Affairs,
Army University**
Col. Kenneth Hawley

**Dean of Academics, Command and
General Staff College**
Dr. James B. Martin

**Director, Directorate of Learning Systems,
Army University**
Col. Michael Harlan

**Associate Professor, College of Education,
Kansas State University**
Dr. Susan M. Yelich Biniecki

**Director, Strategic Policies and Plans,
Army University**
Col. Tom Bolen

**Faculty, Intermediate Course,
Army Management Staff College**
Dr. David M. Quisenberry

**Deputy Director, Directorate of Training and
Doctrine, Maneuver Center of Excellence**
Dr. Jay A. Brimstin

**Professor of Defense and Joint Processes,
Department of Command Leadership and
Management, U.S. Army War College**
Dr. Richard Meinhart

Associate Editors

Pamela Hicks—Training Director, 381st Training Group (U.S. Air Force)
Dr. John Persyn—Faculty and Staff Development Division, Army University
Helen Remily—Director, The Army Distributed Learning Program, Army University
Dr. Louis Smith—Dean and Chief Academic Officer, U.S. Army Recruiting and Retention Command
Col. Dale Watson, PhD—Chair, Department of Command Leadership and
Management, U.S. Army War College

Production

Director and Editor in Chief, Army University Press: Col. Katherine P. Guttormsen, U.S. Army
Editorial Assistant: Linda Darnell
Managing Editor: Col. William M. Darley, U.S. Army, Retired
Operations Officer: Maj. David B. Rousseau, U.S. Army
Senior Editor: Lt. Col. Jeffrey Buczkowski, U.S. Army, Retired
Writing and Editing: Beth Warrington; Maj. Scott Ingalsbe, U.S. Army Reserve;
Crystal Bradshaw-Gonzalez, Contractor
Design Director: Michael Serravo
Layout and Design: Arin Burgess



ARMY UNIVERSITY PRESS

Table of Contents

PEER REVIEWED ARTICLES

-  **3** **Tacit Knowledge Cultivation as an Essential Component of Developing Experts**
LisaRe Brooks Babin and Alice J. (Sena) Garven

-  **19** **Military Education as a Dimension of Security in the Western Hemisphere**
David T. Culkin

-  **34** **Motivating and Educating Millennials**
Sgt. Maj. Kanessa Trent, U.S. Army

-  **47** **Impacting Student Veteran Success Through Military Credit Articulation
A Regional Model for Progress**
Katherine J. Giardello and Sara E. Appel

ARTICLES OF INTEREST

- 60** **The Learning Enterprise Assistance Program
Customer Service at the Point of Need**
Keith R. Beurskens, Maycie Crozier, and Jayson B. Dodge

- 73** **The Institutional Research and Assessment Division of Army University
Research About and for the U.S. Army Training and Doctrine Command**
Alice J. (Sena) Garven and Wade R. Elmore

- 82** **School Leaders as Educators**
Kyle G. Smith

PREVIOUSLY PUBLISHED

- 87** **Being in Uncertainty**
Cultivating a New Sensibility in Military Education
Peter J. Denning and Susan L. Higgins

ANNOUNCEMENTS

- 106** **Upcoming Conferences of Note**

Welcome to the *Journal of Military Learning (JML)*. As the editor of the *JML*, I am proud of the tremendous professionalism and dedication that our authors, editors, and reviewers have demonstrated in bringing this issue to you and also proud that we have started our third year of publication. As Army University continues to academically succeed, we strive to achieve the highest educational writing standards as a peer-reviewed semiannual publication that continues to improve education and training for the U.S. Army, our professional military education (PME) system, and the overall profession of arms. The *JML* is the Army University's professional educational journal, bringing current adult learning discussions and current educational research from the field for the development of our current and future leaders, current PME faculty, and all levels of Army staffs.

Thus, the peer-reviewed articles in this edition include "Tacit Knowledge Cultivation as an Essential Component of Developing Experts," "Military Education as a Dimension of Security in the Western Hemisphere," "Motivating and Educating Millennials," and "Impacting Student Veteran Success Through Military Credit Articulation." Our articles of interest include discussions on the Learning Enterprise Assistance Program and the Institutional Research and Assessment Division. We have also included a best practice article regarding school leaders as educators in the Army.



Col. Paul E. Berg, PhD, U.S. Army
Journal of Military Learning
Editor

I continue to encourage soldiers, instructors, researchers, and military professors, both uniformed and civilian, to submit articles to this educational peer-reviewed journal. Only through critical thinking and challenging our education paradigms can we as a learning organization fully reexamine and assess opportunities to improve our military education. A detailed call for papers and the submission guidelines can be found at <https://www.armyupress.army.mil/Journals/Journal-of-Military-Learning>. ☞

Tacit Knowledge Cultivation as an Essential Component of Developing Experts

LisaRe Brooks Babin and Alice J. (Sena) Garven
Army University

Abstract

As the U.S. military leans forward in shaping the future of military learning, it is essential to better understand and cultivate not only explicit knowledge acquisition but also the tacit knowledge that is needed to become an expert in any area (Army University, 2017). Understanding tacit knowledge and how it is transferred within the total force will improve the military's agility, adaptability, and speed of responding to any challenges presented by adversaries. To accomplish this, metrics need to be created and assessments must be developed that measure both explicit and tacit knowledge informing talent management, training, and employment of the total force for future military operations.

Introduction

I shall reconsider human knowledge by starting from the fact that we can know more than we can tell.

-Michael Polanyi, *The Tacit Dimension* (1966b, p.4)

Understanding the components of human knowledge has been studied and debated for decades, but scientists in general support the use of two categories of knowledge: (1) explicit knowledge and (2) implicit (tacit) knowledge (Mohajan 2017; Purković, 2018). Additionally, there is renewed interest by the industry and military in the study of human knowledge and knowledge management to achieve a competitive advantage over adversaries (Department of Defense, 2018; Mohajan, 2017; Seidler-de Alwis & Hartmann, 2008).

The authors will first compare and contrast tacit and explicit knowledge to set a strong foundation for the reader. The second section will underline how tacit

knowledge is essential to improving the military's ability to remain competitive and resilient under volatile, uncertain, complex, and ambiguous situations. The third section will discuss assessments that have been created to measure tacit knowledge in a military population. Lastly, the article will conclude with a research-focused way forward to assess tacit knowledge transfer in military education and training to improve future military learning.

Explicit and Tacit Knowledge

Army Techniques Publication (ATP) 6-01.1 defines tacit knowledge as

What individuals know; a unique, personal store of knowledge gained from life experiences, training, and networks of friends, acquaintances, and professional colleagues. It includes learned nuances, subtleties, and workarounds. Intuition, mental agility, and response to crises are also forms of tacit knowledge. (U.S. Department of the Army [DA], 2015a, p. 1-3)

In contrast, ATP 6-01.1 states that

Explicit knowledge is codified or formally documented knowledge organized and transferred to others through digital or non-digital means. Explicit knowledge has rules, limits, and precise meanings. Examples include computer files, dictionaries, textbooks, and Army and joint doctrinal publications. (DA, 2015a, p. 1-3)

The father of tacit knowledge, Michael Polanyi, (1966a) described tacit knowledge by using a bicycle analogy. He asserted that being able to ride a bike had nothing to do with reading about riding (explicit knowledge) but more about being able to find one's own balancing point and coordinate multiple muscles to successfully

LisaRe Brooks Babin, PhD, is a research psychologist for the Institutional Research and Assessment Division of the Office of the Provost at Army University. She earned her PhD in learning and comparative experimental psychology at the University of Montana and studies leadership needs for Army training and education in her current position.

Alice J. (Sena) Garven, PhD, is the chief of the Institutional Research and Assessment Division of Army University. Previously, she spent 13 years working with the Army Research Institute. She received her PhD in social psychology from the University of Nebraska-Lincoln and has been a researcher for the Army for over 15 years.



ride the bike without awareness of doing so (tacit knowledge). Other examples of tacit knowledge are: playing sports (Gerrard & Lockett, 2018); making bread (Nonaka, 1991); playing music (Mládková, 2008); conducting medical procedures (Edmonson, Winslow, Bohmer, & Pisano, 2003); and making leadership decisions (DA, 2015b). In fact, many military activities, like conducting key leader engagements and advising and assisting partners, rely heavily on tacit knowledge acquisition (Brown, 2018; Nash & Magistad, 2010).

As stated by Polanyi (1966b) in the epigraph, it is possible that there is knowledge that is difficult to convey with words, but how much of that tacit knowledge can be explicated is yet to be determined in the literature. It is likely that learning is a continuum of acquiring and integrating knowledge that makes measurement of both explicit and tacit knowledge difficult to fully tease apart. As stated by Seidler-de Alwis and Hartmann (2008), “Tacit and explicit knowledge are complementary, which means both types of knowledge are essential to knowledge creation” (p. 134). Luckily though, philosophers, educators, and practitioners have spent decades evaluating how humans learn and the types of knowledge that are gained from different experiences. In addition, much is known about the factors that influence learning and, specifically, tacit knowledge.

From the literature, knowledge can be categorized into “strings and things” (Collins, 2010, p. 85) or depicted as a continuum, as mentioned above. If the salient features of tacit and explicit knowledge can be identified and the features are distinct, researchers can categorize and measure the knowledge separately. Jasimuddin, Klein, and Connell (2005) identified salient features of explicit and tacit knowledge. Specifically, explicit knowledge is categorized by information that is codified, easy to articulate, communicated and stored in media and other concrete physical locations, impersonal, and owned by an organization not an individual person. The opposite of each are the factors that relate to tacit knowledge: noncodified; personal; difficult to articulate, communicate and store; located solely in the individual’s brain; acquired through face-to-face exchanges, like storytelling; and owned by the organization and its members.

The problem with categorizing knowledge into two discrete boxes is that you may miss the important overlap that exists if learning is indeed a continuum. There is also a danger in forcing an artificial categorization where you misrepresent the knowledge to make things look neat and orderly. On the other hand, the benefit of categorization is that it is a place to start, especially when it comes to learning how to improve the knowledge acquisition.

Those that advocate knowledge as a continuum endorse the view that “tacit knowledge and explicit knowledge are the poles of a knowledge spectrum” (Jasimuddin et al., 2005, p. 104), but they clarify that there is value in understanding the overlap between explicit and tacit knowledge. Chen, Snyman, and Sewdass (2005) make a great point that “the spiral that operates between tacit and explicit knowledge continually



effecting [sic] new knowledge among workgroups creates the energy and innovation that characterizes an active knowledge-intensive and knowledge-creating organization” (p. 6). This insight highlights the importance of studying tacit knowledge not only to understand how military personnel learn but also how new knowledge is created within a learning organization.

Focusing on individual learning and the continuum of explicit to tacit knowledge, consider a soldier skill like shooting an M16 rifle. According to the U.S. Department of the Army’s Field Manual (FM) 3-22.9 (2008), *Rifle Marksmanship M16/M4 Series Weapons*, soldiers begin their training by learning the “firing fundamentals, which are taught in four phases—preliminary marksmanship instruction, downrange feedback, field firing, and advanced firing exercises” (p. 1-1).

In the first phase, soldiers are given a four-hour class where they learn the components of the weapon, how to assemble and disassemble the weapon, and how to clear it. They memorize the weight of the weapon (with/out a sling), the operational characteristics, and the maximum effective ranges. The knowledge acquired in the class is explicit knowledge about the facts of shooting, but it will not make someone a marksman, much less an expert.

The majority of learning to be a marksman occurs through actually holding and shooting the weapon. This is the tacit knowledge development that is personal and intuitive. Phases 2, 3, and 4 emphasize the importance of practice, feedback, and adjustments to shooting behaviors, as represented in figure 1 (on page 7).

Soldiers practice shot grouping, shooting from different distances and positions while receiving concrete feedback from the holes left on the targets and pointers from the coaches. Adjustments are made in posture, breathing, and trigger squeeze that result in improved performance. “When troubleshooting the fundamentals, the coach’s imagination is the only limiting factor” (DA, 2008, p. 5-14).

Depending on the soldier’s unit, advanced training may include moving targets, shoot houses, different terrain and weather conditions, and targets with friendly or enemy silhouettes. There may be more explicit knowledge integrated into the tacit knowledge by reading about advanced skills, receiving in class instruction from coaches, then adding advanced tacit knowledge through practice in simulated and live environments.

Learning to be an expert shot begins with concrete, explicit knowledge of the weapon, but the majority of the learning comes from the tacit knowledge from practice, feedback, and adjustments made while shooting. In summary, as stated by a soldier who has consistently achieved perfect scores on his qualification exams:

To become an expert, the experimentation and feedback cycle is important in that it allows soldiers to control one’s own learning, thus achieving more than they thought was possible, reinforcing and motivating them to do better, even hitting 40 out of 40 targets. (Specialist First Class W. O. Gray, personal communication, 26 September 2018)



In figure 1, the development of knowledge is depicted on a continuum from explicit to tacit where learning is iterative and integrated. It is important to note that the amount of explicit versus tacit knowledge needed to develop a skill may be different. Specifically, Mohajan (2016) estimates that “about 90% of the knowledge in any organization is embedded and synthesized in tacit form” (p. 10). Similar to our marksmanship example, only a small portion of the knowledge needed to become a marksman comes from the explicit knowledge learned from reading Army manuals

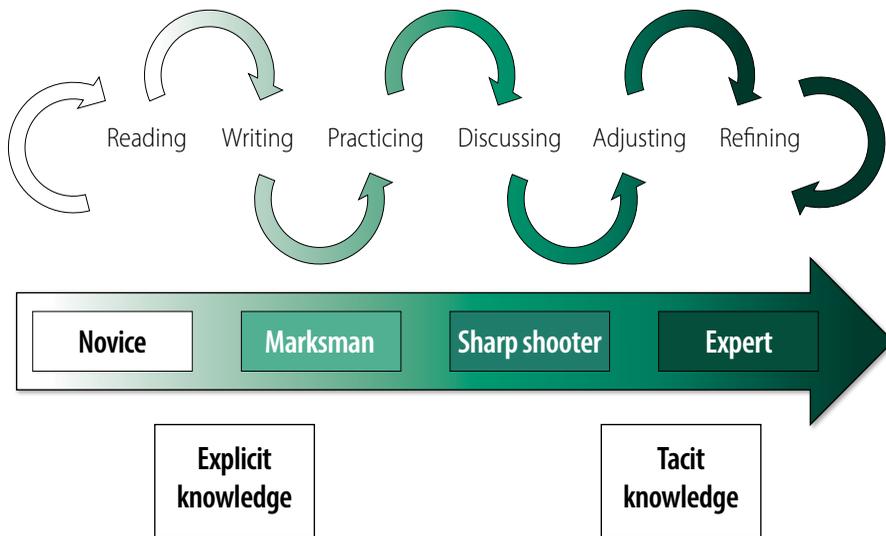


Figure 1. Continuum of explicit and tacit knowledge and the iterative process to become a marksmanship expert. Figure by authors.

and classroom instruction. The majority of learning relies on the acquisition of tacit knowledge through practicing, discussing, adjusting, and refining the shooting skills. So how can the Army ensure that soldiers receive the correct amount of explicit and tacit knowledge to become a marksman? How much more is needed to become a sharpshooter or an expert? What are the influencing factors that help or hinder the learning? Can any soldier become an expert, or are there aspects of the behavior that can't be learned, as posited by Polanyi (1966b)?

The first step to answering these questions is to recognize the importance of assessing the knowledge over time and identifying the requirements that are needed to establish when an individual has become an expert. For marksmanship, the Army has done a great job in establishing what it takes to become an expert (DA, 2008). Doctrine has identified concrete skills to measure and present many recommendations to improve performance. Other skills in the Army are



less well defined. For instance, hard skills like shooting are different than soft skills such as advising.

According to Brown (2018), “Current U.S. military doctrine identifies twenty-six personality traits that are desirable in advisors” (p. 1). Of the 26, he identified the five most important traits from his personal experiences as an advisor and trainer: empathetic, humble, visionary, diplomatic, and self-aware. Additionally, the Security Force Assistance doctrine (DA, 2009) identifies additional individual and collective skills that are required to be a good advisor. A sample of these skills presented in FM 3-07.1, *Security Force Assistance*, are: “communicate across cultures, build rapport, influence, and negotiate” (p. 7-4). These traits and skills are very nuanced and sophisticated. Further, it is the combination of the needed traits and skills together that result in the best advisors.

While advising is far more complex than marksmanship, the Army has spent much time and effort in identifying and training the needed knowledge, skills, and behaviors that are required to be a good advisor. But what about an expert advisor? According to Kauffman (2018), “initial coverage of the SFAB [Security Force Assistance Brigade] suggests that the curricula are still not comprehensive enough for our forces to operate successfully in the human domain” (p. 89). It is clear that there is more to be done to understand, cultivate, and transfer tacit knowledge of the softer skills required to win in a complex world.

Tacit Knowledge and Winning in a Complex World

A major reason underlying this gap in curriculum and training is the growing complexity of the operational environment. The Army’s FM 3-0, *Operations*, states, “Army operations take place in the most complex of environments, on land among humans who have fundamental disagreements” (DA, 2017a, p. 1-4). Additionally, as described by Schatz, Fautua, Stodd, & Reitz (2017), “Globalization, ever-increasing computing power, and the proliferation of low-cost advanced technologies have created a level of worldwide complexity never before seen” (p. 78). This growing complexity makes military operations exceedingly difficult. To be successful in a volatile, uncertain, complex, and ambiguous environment, military personnel need to respond to enemy actions swiftly and completely (DA, 2017a). They need to learn quickly and act with confidence like an expert. If they have developed their job-related skills beyond explicit to tacit, they can respond quickly and effectively to any challenge presented to them, but the military needs to be sure they acquire that tacit knowledge.

At the organizational level, if the military is able to identify and tap into tacit knowledge across the enterprise, it can employ the talent more quickly and effectively. Additionally, if processes are in place and assessments are created, understanding how to accelerate tacit knowledge transfer could result in better training for future, yet unknown



skill sets. Specifically, Durant-Law (2003) states that by becoming a learning organization, a business is able to capture and explicate the tacit knowledge within its workforce. By using mechanisms that encourage employees to codify and share their tacit knowledge, companies will “operate on a higher plane, which allows it to predict outcomes, adapt to changing circumstances, and above all to be innovative” (Durant-Law, 2003, p. 1).

In many ways, the military does this already. After action reviews are a great example of codifying and sharing information about what worked or did not work after a mission. “Right seat rides” are formal activities that units use to transfer tacit knowledge from a unit on the ground to the unit that will be relieving them in place. Also, soldiers may develop continuity books to explicate the tacit knowledge that they acquired during their deployment to be shared with those replacing them for a smoother transition of roles and responsibilities. Unfortunately, when these and other methods are not used effectively, there is a great loss of institutional knowledge that cannot easily be reacquired (Şensoy, Keskin, & Orhan, 2015).

There are also many factors that influence learning in general that make the path to becoming an expert more challenging. The literature identifies numerous factors that influence learning, especially when considering adult learning. *The U.S. Army Learning Concept for Training and Education: 2020-2040* specifies six core principles of adult learning: “the learner’s need to know; self-concept of the learner; prior experience of the learner; readiness to learn; orientation to learning; and motivation to learn” (DA, 2017b, p. 26).

For explicit information, like memorizing the characteristics of an M16, the soldier’s need to know, prior experience, readiness to learn, and motivation to study will impact how well he or she will perform in the first hours of marksmanship training. Those factors also impact the development of tacit knowledge. The soldier needs to be motivated to practice the marksmanship behaviors, have strong self-awareness of his or her body to know the correct posture, breathing pattern, and trigger pull sensation, and be able to draw from previous experiences to fire effectively on a target.

Regarding tacit knowledge specifically, because of the experiential and personal nature of that learning, an important factor for effective acquisition of tacit knowledge is the feedback that is given when learning a skill. The feedback needs to be consistent, clear, and relevant to the learner. Effective feedback helps the learner know what “right looks like.” The feedback also needs to be immediate so the learner can evaluate why his or her behavior hindered their performance and make the needed adjustments. The longer the delay between the actions and the feedback, the greater the likelihood that the learner will not be able to correct and, thus, improve his or her performance. The *U.S. Army Learning Concept* highlights the importance of providing feedback to students by including it in the analysis, design, development, implementation, and evaluation process for developing learning products to facilitate adult learning (DA, 2017b). Additionally, the *Army Learning Strategy* states that Army leaders should provide meaningful feedback and con-



sider delivery mechanisms that are “skillfully framed and appropriately delivered” (Army University, 2017, p. 12).

Another area of research that has focused on the factors that influence knowledge acquisition is the comparison of novice and expert performance. A major difference between a novice and an expert is how they look at a problem. A novice has little experience to rely upon so they must methodically and explicitly break down a problem and may struggle with what to focus on and what to ignore. An expert has both knowledge and experience to apply to a problem, seeing it in a more abstract way to visualize the larger picture and not be distracted by irrelevant information (Hinds, Patterson, & Pfeffer, 2001).

Charness, Krampe, Reingold, Tuffiash, & Vasyukova (2005) demonstrated that the single most important factor that predicted expert versus novice chess performance was deliberate practice. Players must “engage in several thousand hours of concentrated analysis and memorization of chess tactics and positions in order to build the knowledge base necessary to achieve regular success in highly competitive chess tournaments” (Charness et al., 2005, p. 163). The authors also indicated that expert chess players must self-regulate themselves during a tournament. This includes managing time effectively, avoiding distractions, and controlling negative emotions. From this research, explicit and tacit knowledge working together results in expert performance. It also highlights the importance of repetition (physically and mentally) and the emotional factors that can impact performance.

Confidence from repetitions of success and coming back from failure is also important to reaching expert levels, especially in difficult tasks. Unfortunately, overconfidence could have the opposite effect, where an individual does not take the time to consider the physical and emotional factors in play and lose his or her focus. Lastly, repetition reduces learning decay that can happen with perishable skills, like shooting effectively.

Measuring Explicit and Tacit Knowledge

Now that tacit knowledge has been defined and described and factors influencing military learning have been presented, the main question to be answered in this article, especially for the warfighter, is “How can explicit and tacit knowledge be measured?”

Explicit knowledge assessment is well known. These are the tools that are used in traditional classroom environments to assess student learning or on promotion boards to assess a soldier’s comprehension of facts relevant to his or her job. These assessments range from basic true or false statements, to more complex scenario evaluations where how to do something well is easily communicated through written and verbal exams and easily graded using rubrics.

The effort to measure explicit knowledge is aided in part by the Army’s adoption of Bloom’s Taxonomy and the six cognitive levels (DA, 2013). The original taxonomy



was revised in 1956 and currently identifies the six cognitive dimensions as: remember, understand, apply, analyze, evaluate, and create (Krathwohl, 2002). The first level assesses an individual's ability to remember facts and recall information. The next level pertains to an individual's ability to explain the information, not just regurgitate the facts. The third level involves the application of the information in new, unique ways. This level appears to represent the overlap between explicit and tacit knowledge in that known facts, perhaps gained via explicit learning processes, are applied to different situations or problems based on previous experiences. The fourth level entails the ability to compare and contrast related situations or problems to develop a deeper level of understanding and thus facilitate the next level in decision making through evaluation. The sixth and final level is "creating." This is where the "new knowledge" is produced. Krathwohl (2002) defines the create level as "putting elements together to form a novel, coherent whole or make an original product" (p. 215).

Using Bloom's Taxonomy levels, the shooting analogy can be further dissected as an example of learning levels and related tacit knowledge development (see figure 2, page 12). At the first level of "remember," the soldier is able to remember the components of a M16, its weight, and the maximum effective ranges when shooting it. At the next level, the soldier demonstrates "understanding" by explaining how the weapon is constructed, how to set the sights, and the factors that influence hitting the target. Regarding "application," the third level, the soldier must demonstrate how his or her understanding of the mechanics of the weapon actually result in effective shooting. That is, he or she must physically apply the explicit knowledge and develop further his or her tacit knowledge through practice to qualify at the range. If challenged to hone their shooting skills at a higher level of analysis, the soldiers will experience shooting in different situations, different positions, and possibly using different weapons. This practice helps the soldiers develop more deeply their individual shooting behaviors (e.g., breathing, trigger squeeze, eye relief) by enhancing their tacit knowledge through practice. Unfortunately, practice by itself is not enough to become an expert shot. At the next level, "evaluation," the individual must check and critique his or her behavior (hopefully with the assistance of a knowledgeable coach providing actionable feedback). Without the quality feedback, continued practice may actually result in the development of bad habits reducing the likelihood that the individual will be able to become an expert shot. With the assistance of an expert qualified coach/mentor providing insights and feedback to the soldier, together they "create" new knowledge about how that individual can become an expert shot. This new knowledge can then be shared with others within the organization to help novices become expert shots.

By categorizing tacit knowledge into the levels of Bloom's Taxonomy, a method of measurement of tacit knowledge is also provided. That is, when a soldier's shooting skills are at the creation level, where he or she is creating new knowledge via developing enhanced techniques and procedures, it is known that they have maximized the acquisition of tacit knowledge. Whereas, at the application and evaluation levels, the



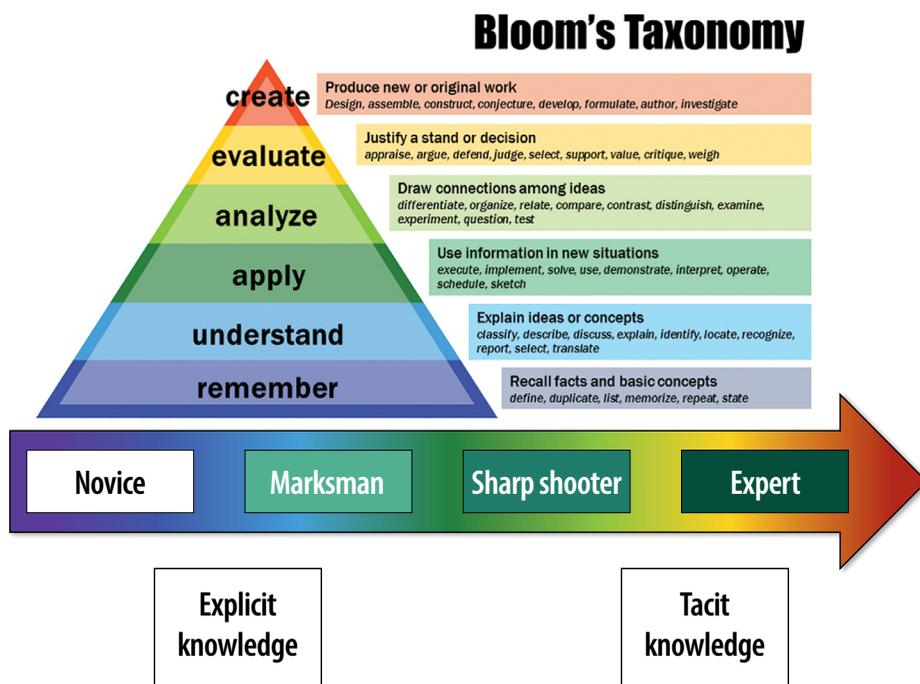


Figure 2. Continuum of explicit and tacit knowledge compared to Bloom's Taxonomy to depict steps to becoming an expert shot. Bloom's Taxonomy figure courtesy of Vanderbilt University Center for Teaching. Composite figure compiled by authors.

soldier is shooting well but has not yet created new knowledge that results in perfect shooting performance in any fighting situation.

Another approach to measuring tacit knowledge was developed by Robert Sternberg and colleagues (Antonakis, Hedlund, Pretz, & Sternberg, 2002; Cianciolo, Anotonakis, & Sternberg, 2001; Hedlund, Antonakis, & Sternberg, 2002; Hedlund et al., 1998; Horvath et al., 1994a, 1994b; Matthew, Cianciolo, & Sternberg, 2005; Sternberg et al., 1999). Unlike most of the other research assessing tacit knowledge, these efforts were specifically focused on a military population. It is for this reason, the authors will present the team's findings as a possible way forward for measuring military learning.

Sternberg and his team based their efforts on Sternberg's triarchic theory of intelligence, specifically related to his research on practical intelligence. This was a valid course of action because practical intelligence has been shown to encompass tacit knowledge (Wagner & Sternberg, 1985). To begin the research effort, Horvath, et al. (1994b) conducted an extensive literature review of tacit knowledge and military leadership. They divided tacit knowledge into three categories: (1) intrapersonal, (2)

interpersonal, and (3) organizational. Intrapersonal tacit knowledge consists of information about oneself—specifically, an individual's level of self-awareness, self-motivation, and self-organization. The interpersonal domain focuses on the knowledge about behaviors of other people. This would include an individual's ability to influence, cooperate with, and understand others. The organizational domain consists of behaviors related to the organization. The authors focused on how organizations optimize their work force, how they define the organization, and to what extent the organization has a vision for the future. The authors acknowledged that the categories are not mutually exclusive, but by creating the framework, they felt confident that tacit knowledge could be measured and used to predict job performance.

Horvath, et al. (1994a) continued the research by developing a tacit knowledge instrument to measure tacit knowledge in military leaders. The authors conducted semistructured interviews with 81 active duty Army officers from combat arms, combat support, and combat service support units. The interview data was coded and sorted for different examples of tacit knowledge used by Army leaders to address complex problems. Their findings indicated that for platoon leaders, these milestones included self-management and the establishment of credibility with others. For company commanders, these milestones included balancing company and battalion level interests. For battalion commanders, these milestones included managing organizational change and communication (Horvath et al., 1994b, p. vii).

The results provided the raw data used by follow-on research to further evaluate how tacit knowledge could be measured with military personnel. Horvath, et al. (1996) used the previous findings with additional survey data to create a model of tacit knowledge. In addition, several research products were developed by Horvath, et al. (1998) to be used in the work conducted by the research team and others from 1998 to 2008. They demonstrated that officers' and noncommissioned officers' tacit knowledge could be measured using sophisticated scenario instruments and correlated to other measures of leadership effectiveness, self-knowledge, and organizational culture (Taylor, Higley, & Grabarczyk, 2008).

Most relevant to this paper is the process used to develop valid measures of military personnel's tacit knowledge. The first step was to conduct interviews with a sample of the target population to extract stories and insights gained from job-related experiences. Horvath, et al. (1994a) included a sample interview protocol. The next step would be to conduct a content analysis of the raw data to establish examples of tacit knowledge, which can be sorted to create a category framework. Horvath, et al. (1996) included an example of several categories of tacit knowledge items such as: "dealing with poor performers," "establishing trust," and "managing the self" (p. 18). The categories were used to develop preliminary inventories. The inventories contained scenario-based questions where the participants rated the possible responses from "extremely bad" to "extremely good" based on what they would do in that situation. For example, Hedlund, et al. (1998) used the scenario, "You are a company commander with some



relatively junior lieutenants. Your goal is to develop these lieutenants. Rate the quality of the following strategies for achieving your goal” (p. B-18). Sample choices included: “Involve the lieutenants in every administrative action in the company”; “Involve the lieutenants only in those decisions that affect their platoons”; and “Tell the lieutenants when things in the battalion are bothering you” (p. B-18). Participant experiences and other demographic information were also collected to identify levels of job experience.

Additionally, subject-matter experts were used to establish the “expert” answers. This is generally done using survey data asking experts to rate the items on several dimensions. The results can be used to identify which items discriminate between experienced and novice answers. Lastly, the findings informed the final battery of measures of tacit knowledge that were used for follow-on research.

This process can be duplicated with a focus on any military learning environment to assess the explicit and tacit knowledge acquired. Further, research could ascertain the balance of explicit versus tacit knowledge needed to become an expert in specific military occupational specialties. For instance, to become a successful advisor, how much explicit knowledge is required before attending training at a combat training center where the tacit knowledge needs to be honed before deployment? Lastly, by understanding the needed explicit and tacit knowledge that must be acquired to become an expert in a particular skill, the military might be able to create new education and training programs that accelerate the knowledge transfer, making it more agile in meeting future fighting requirements.

Future Research

Other methods to measure knowledge transfer exist in the literature but are focused on nonmilitary populations. Future research should consider this literature and incorporate the methods, especially if they provide less complex, yet scientifically sound processes. Interestingly, the recommendations made by Schatz, et al. (2017) closely align with other ways to measure tacit knowledge using performance measures, competency models, maintaining robust data management systems, and collaborative learning approaches.

Numerous performance measures and competency models exist that could inform different ways of measuring tacit knowledge (MacLean, Kerr, & Qaseem, 2018; Russo, 2016; Stecher & Hamilton, 2014). There is also a growing body of literature investigating better ways of managing knowledge (Barley, Treem & Kuhn, 2017; Chen et al., 2005). In addition, there are several collaborative learning approaches, formal and informal, that the military could adopt or refine to further develop tacit knowledge. Some examples would be use of learning histories, whisper courses, sketch-noting, smart phone apps, game-based learning, mechanisms for remote team building, strategies to improve productive discourse, etc. Anything that can help explicate an individual’s tacit knowledge transfer to others in a timely manner would benefit military readiness.



It is clear that military learning encompasses both explicit and tacit knowledge that to some extent can be known, measured, and shared across an enterprise. Additionally, effectively managing this knowledge throughout an organization facilitates improved institutional effectiveness, innovation, and resiliency (Mohajan, 2016, 2017).

In conclusion, the U.S. military has many of the pieces in place to successfully identify, measure, and transfer tacit knowledge throughout its organization but more work needs to be done. Stated eloquently by Schatz, et al. (2017), “The timing is right to unleash the full potential of our Human Dimension. All the resources are here—science, technology, and the demand—and all we need is a shared strategy and the will to pursue it” (p. 89).

Having discussed tacit knowledge in depth and argued that measurement is indeed possible, the authors would like to provide a few research questions for future study based on the hypothesis that identifying ways to accelerate tacit knowledge acquisition can improve Army readiness.

1. Does an increase in explicit knowledge acquisition before training and/or education events benefit the development of tacit knowledge? Thus, improving performance downrange?

2. How does motivation, self-awareness, and self-reflection impact tacit knowledge acquisition?

3. What are the ways to codify tacit knowledge into Army tactics, techniques, and procedures and lessons learned that lead to enterprise-level best practices that can be effectively managed and efficiently transferred across the organization?

4. How effective are collaborative learning techniques in increasing tacit knowledge transfer from experts to novices? Can these techniques improve observer, coach, and trainer feedback to students at training centers?

5. Can simulations improve tacit knowledge development, or are there limitations to what tacit knowledge can be gained from them? How much does the level of simulation fidelity matter?

6. At what point in education and training does practice reach its peak of effectiveness, and when do gains in developing tacit knowledge require real experience? 

References

Antonakis, J., Hedlund, J., Pretz, J. E., & Sternberg, R. J. (2002). *Exploring the nature and acquisition of tacit knowledge for military leadership* (ARI Research Note 2002-04). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Army University. (2017). *Army learning strategy*. Leavenworth, KS: Army University. Retrieved from [https://armyu.army.mil/sites/default/files/documents/Army_Learning_Strategy_24_July_2017_\(Signed\).pdf](https://armyu.army.mil/sites/default/files/documents/Army_Learning_Strategy_24_July_2017_(Signed).pdf)

Barley, W. C., Treem, J. W., & Kuhn, T. R. (2017). Valuing multiple trajectories of knowledge: A critical review and research agenda for knowledge management research. *Academy of Management Annals*, 12(1), 278–317. [doi:10.5465/annals.2016.0041](https://doi.org/10.5465/annals.2016.0041)



- Brown, E. E. (2018). The definition of advisor: Comprehending the mission to advise foreign security forces. *Small Wars Journal*. Retrieved from <https://smallwarsjournal.com/jrnl/art/definition-advisor-comprehending-mission-advise-foreign-security-forces>
- Charness, N., Krampe, R., Reingold, E. M., Tuffiash, M., & Vasyukova, E. (2005). The role of deliberate practice in chess expertise. *Applied Cognitive Psychology*, 19(2), 151–165. doi:10.1002/acp.1106
- Chen, X. H., Snyman, M., & Sewdass, N. (2005). Interrelationship between document management, information management and knowledge management. *South African Journal of Information Management*, 7(3), 1–20. doi: 10.4102/sajim.v7i3.270
- Cianciolo, A. T., Antonakis, J., & Sternberg, R. J. (2001). *Developing effective military leaders: Facilitating the acquisition of experience-based, tacit knowledge* (Annual Report). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. Retrieved from <https://apps.dtic.mil/dtic/tr/fulltext/u2/a400614.pdf>
- Collins, H. (2010). *Tacit & explicit knowledge*. Chicago, IL: University of Chicago Press.
- Department of Defense. (2018). *Summary of the 2018 national defense strategy of the United States of America: Sharpening the American military's competitive edge*. Washington, DC: U.S. Government Publishing Office (GPO). Retrieved from <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>
- Durant-Law, G. (2003). *The tacit knowledge advantage*. Retrieved from <http://www.durantlaw.info/sites/durantlaw.info/files/The%20Tacit%20Knowledge%20Advantage.pdf>
- Edmonson, A. C., Winslow, A. B., Bohmer, R. M. J., & Pisano, G. P. (2003). Learning how and learning what: Effects of tacit and codified knowledge on performance improvement following technology adoption. *Decision Sciences*, 34(2), 197–224.
- Gerrard, B., & Lockett, A. (2018). Team-specific human capital and performance. *British Journal of Management*, 29(1), 10–25. doi:10.1111/1467-8551.12173
- Hedlund, J., Antonakis, J., & Sternberg, R. J. (2002). *Tacit knowledge and practical intelligence: Understanding the lessons of experience* (ARI Research Note 2003-04). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Hedlund, J., Horvath, J. A., Forsythe, G. B., Snook, S., Williams, W. M., Bullis, R. C., ... Sternberg, R. J. (1998). *Tacit knowledge in military leadership: Evidence for construct validity* (Report No. 1080). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Hinds, P. J., Patterson, M., & Pfeffer, J. (2001). Bothered by abstraction: The effect of expertise on knowledge transfer and subsequent novice performance. *Journal of Applied Psychology*, 86(6), 1232–1243.
- Horvath, J. A., Forsythe, G. B., Sweeney, P. J., McNally, J. A., Wattendorf, J., Williams, W. M., & Sternberg, R. J. (1994a). *Tacit knowledge in military leadership: Evidence from officer interviews* (Report No. 1018). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Horvath, J. A., Hedlund, J., Snook, S., Forsythe, G. B., & Sternberg, R. J. (1998). *Tacit knowledge in military leadership: Some research products and their applications to leadership development* (Report No. 1081). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Horvath, J. A., Sternberg, R. J., Forsythe, G. B., Sweeney, P. J., Bullis, R. C., Williams, W. M., & Dennis, M. (1996). *Tacit knowledge in military leadership: Supporting instrument development* (Report No. 1042). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.



- Horvath, J. A., Williams, W. M., Forsythe, G. B., Sweeney, P. J., Sternberg, R. J., McNally, J. A., & Wattendorf, J. A. (1994b). *Tacit knowledge in military leadership: A review of the literature* (Report No. 1017). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Jasimuddin, S. M., & Klein, J. H., & Connell, C. (2005). The paradox of using tacit and explicit knowledge: Strategies to face dilemmas. *Management Decision*, 43(1), 102–112. doi:10.1108/00251740510572515
- Kauffman, B. A. (2018). Preparing SFABs for the complexity of human interaction. *Military Review*, 98(4), 88–95. Retrieved from <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/JA-18/Kauffman-Preparing-SFAB.pdf>
- Krathwohl, D. R. (2002). A revision of Bloom's Taxonomy: An overview. *Theory Into Practice*, 41(4), 212–237. Retrieved from <http://cmappublic2.ihmc.us/rid=1Q2PTM7HL-26LTFBX-9YN8/Krathwohl%202002.pdf>
- MacLean, C. H., Kerr, E. A., & Qaseem, A. (2018). Time out - charting a path for improving performance measurement. *The New England Journal of Medicine*, 378(19), 1757–1761. Retrieved from <https://www.nejm.org/doi/pdf/10.1056/NEJMp1802595>
- Matthew, C. T., Cianciolo, A. T., & Sternberg, R. J. (2005). *Developing effective military leaders: Facilitating the acquisition of experience-based tacit knowledge* (Report No. 1161). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Mládková, L. (2008). Work with tacit knowledge. *KSI Transaction on Knowledge Society: A publication of the Knowledge Society Institute*, 1(3): 66–67. Retrieved from <http://www.tksi.org/JOURNAL-KSI/PAPER-PDF-2008/2008-3-1-15.pdf>
- Mohajan, H. K. (2016). Sharing tacit knowledge in organizations: A review. *American Journal of Computer Science and Engineering*, 3(2), 6–19. Retrieved from https://www.researchgate.net/publication/314062797_Sharing_of_Tacit_Knowledge_in_Organizations_A_Review
- Mohajan, H. K. (2017). Tacit knowledge for the development of organizations. *ABC Journal of Advanced Research*, 6(1), 17–24. Retrieved from <https://mpr.ub.uni-muenchen.de/83040/>
- Nash, R. C., & Magistad, E. P. (2010). Disarming the key leader engagement. *Military Review*, 90(5), 11–20. Retrieved from https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20101031_art005.pdf
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, 162–171. Retrieved at <https://pdfs.semanticscholar.org/da2f/d9e368f14e0bb713fb6f4d7c32b0f72f6bcf.pdf>
- Polanyi, M. (1966a). The logic of tacit inference. *Philosophy*, 41(155), 1–18. doi:10.1017/S0031819100066110
- Polanyi, M. (1966b). *The tacit dimension*. Chicago, IL: University of Chicago Press.
- Purković, D. (2018). *Conceptualization of technology as a curriculum framework of technology education*. Paper presented at the 7th International Scientific Conference: Technics and Informatics in Education, Čačak, Serbia.
- Russo, D. (2016). *Competency measurement model*. Paper presented at the European Conference on Quality in Official Statistics, Madrid, Spain. Retrieved from <http://www.ine.es/q2016/docs/q2016Final00276.pdf>
- Schatz, S., Fautua, D. T., Stodd, J., & Reitz, E. A. (2017). The changing face of military learning. *Journal of Military Learning*, 1(1), 78–91. Retrieved from <https://www.armyupress.army.mil/Portals/7/journal-of-military-learning/Archives/jml-april-2017-Schatz-Fautua-Stodd-Reitz-Changing.pdf>



- Seidler-de Alwis, R., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: Knowledge management in innovative enterprises. *Journal of Knowledge Management*, 12(1), 133–147. doi:10.1108/13673270810852449
- Şensoy, S. E., Keskin, A., & Orhan, M. E. (2015). Knowledge management in military organizations: Applications of knowledge creation and knowledge transfer. Paper presented at the International Conference on Military Security Studies, Turkish Army War College, Istanbul, Turkey. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.740.4199&rep=rep1&type=pdf>
- Stecher, B. M., & Hamilton, L. S. (2014). *Measuring hard-to-measure student competencies*. Santa Monica, CA: RAND Corporation. Retrieved from https://www.rand.org/pubs/research_reports/RR863.html
- Sternberg, R. J., Forsythe, G. B., Horvath, J. A., Snook, S., Wagner, R. K., Hedlund, J., ... Grigorenko, E. L. (1999). *Tacit knowledge in the workplace* (Report No. 1093). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Taylor, T. Z., Higley, L., & Grabarczyk, D. (2008). *A U.S. Army Reserve (USAR) noncommissioned officer (NCO) tacit knowledge inventory: Flexible structure for squad-level leader self-development* (Research Product 2008-01). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- U.S. Department of the Army. (2008). *Rifle marksmanship M16-/M4-series weapons* (Field Manual [FM] 3-22.9). Washington, DC: Government Printing Office [obsolete]. Superseded by Training Circular 3-22.9, *Rifle and carbine*, on May 2016. Retrieved from https://usacac.army.mil/sites/default/files/misc/doctrine/CDG/cdg_resources/manuals/fm/fm3_22x9.pdf
- U.S. Department of the Army. (2009). *Security force assistance* (FM 3-07.1). Washington, DC: Government Printing Office [obsolete]. Superseded by FM 3-22, *Army support to security cooperation*, on 22 January 2013. Retrieved from <https://usacac.army.mil/cac2/Repository/FM3071.pdf>
- U.S. Department of the Army. (2013). *Army educational processes* (Training and Doctrine Command [TRADOC] Pamphlet [TP] 350-70-7) [obsolete]. Revised 4 October 2018. Washington, DC: Government Printing Office. Retrieved from <http://data.cape.army.mil/web/character-development-project/repository/tp350-70-7.pdf>
- U.S. Department of the Army. (2015a). *Techniques for effective knowledge management* (Army Techniques Publication 6-01.1). Washington, DC: U.S. GPO. Retrieved from http://www.eis.army.mil/uploaded_files/atp6_01x1.pdf
- U.S. Department of the Army. (2015b). *Leader development* (FM 6-22). Washington, DC: U.S. GPO. Retrieved from http://www.milsci.ucsb.edu/sites/secure.lsit.ucsb.edu.mili.d7/files/sitefiles/fm6_22.pdf
- U.S. Department of the Army. (2017a). *Operations* (FM 3-0). Washington, DC: U.S. GPO. Retrieved from https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN6687_FM%203-0%20C1%20Inc%20FINAL%20WEB.pdf
- U.S. Department of the Army. (2017b). *The U.S. Army learning concept for training and education: 2020-2040* (TP 525-8-2). Washington, DC: U.S. GPO. Retrieved from <https://adminpubs.tradoc.army.mil/pamphlets/TP525-8-2.pdf>
- Wagner, R. K., & Sternberg, R. J. (1985). Practical intelligence in the real-world pursuits: The role of tacit knowledge. *Journal of Personality and Social Psychology*, 49(2), 436–458.



Military Education as a Dimension of Security in the Western Hemisphere

David T. Culkin

Army University

Abstract

An overlooked yet salient aspect of security issues in the Western Hemisphere is adult education as a developmental phenomenon deeply rooted in society and culture. Studying the relationship between educational trends and security in this hemisphere may help political and security professionals anticipate challenges and opportunities in other world regions. The author examines these key issues related to the role public education plays in western hemispheric security and conflict: (1) security-related aspects of education, (2) the concept of human capital as a social-cultural relationship between education and regional security or lack thereof, (3) the nature of related transnational threats to education, and (4) implications of education for future stability and development. As a result, the author highlights the linkage of professional military schools to the development of human capital that has become a foundational element of national security. Military educators and civilian policy makers can collaborate to improve collective human capital within the context of regional security. In this multifaceted and globalized context, leaders—both those within the Western Hemisphere and those who have a geopolitical interest in the region—in military learning have a unique opportunity to foster societal development and regional security.

Why is education a national security issue? ... America's educational failures pose five distinct threats to national security: threats to economic growth and competitiveness, U.S. physical safety, intellectual property, U.S. global awareness, and U.S. unity and cohesion Military might is no longer sufficient to guarantee security. Rather, national security today is closely linked with human capital, and the human capital of a nation is as strong or as weak as its public schools (Klein, Rice, & Levy, 2014, p. 7).

This article examines how professional military education (PME) systems in the Western Hemisphere are linked to the concept of security. Pundits of power and analysts in North America often conceptualize hemispheric issues of national security with the military or other instruments of national power as part of a greater chess match among states and organized criminal networks (Carey, 2016; Fuentes & Aravena, 2005). As the epigraph attests, an overlooked yet salient aspect of western hemispheric security discussions is education's role in society and culture (Tanner, Arnett, & Leis, 2009). The linkage between public education (pre- and post-secondary), PME (i.e., formal education programs offered over a career), and national security has not been extensively examined; however, this linkage should be considered for both enlisted and commissioned personnel when expanding normative concepts of security and conflict across disciplines (Bagley, Kassab, & Rosen, 2015; Klein et al., 2014; Pherali, 2016; Skaggs, 2014; see also Tran, Oliveira, Sider, & Blanken, 2018). When many of the world's school-age children are denied access to school due to conflict and related cross-border migrations, there are long-term implications for national and transnational security (Global Coalition to Protect Education from Attack [GCPEA], 2014; Novaro & Bartlett, 2017; Pherali, 2016).¹ Arguably, educational gaps may affect security in the region or continent. Accordingly, institutions of PME in the Western Hemisphere should adapt curricula to address dynamic social needs such as individual development, citizen education, and economic stabilization. In this sense, PME consists of public and social components because of its charter to educate future military leaders for domestic and international service. Education within a society is inherently political in nature, and cultural and historical in context.

PME can play a critical role in the transmission of cultural values and traditions related to national security. The concept of human capital assumes individuals bring value to society and links educational progress to cultural and economic development that, when applied throughout a region, should contribute to greater transnational security as well (Bennett & Bell, 2010). To ensure this progression, educational stakeholders—such as program administrators, course facilitators, curriculum developers, and policy makers—need to be aware of threats that may limit long-term societal investment in human capital.

Addressing key concepts of this discussion will both facilitate further dialogue and enable the exploration of new aspects of hemispheric security issues—that is, regional stability, civil-military relations, and public education for vulnerable members of society—through an educational perspective. In this article, the author will discuss these key elements related to the impact of PME on western hemispheric



David T. Culkin, PhD, works in faculty and staff development at the Army University, Fort Leavenworth, Kansas. He is a retired Army officer and earned a doctorate in adult education from Kansas State University.

security and conflict. Together, they constitute a framework that links education to regional security: (1) security issues tied to education, (2) the concept of human capital as a social-cultural relationship between education and regional security/conflict, (3) the nature of related transnational threats to education, and (4) implications for future stability and development.

Security Issues Tied to Education

Educational experiences among the diverse peoples in the Western Hemisphere are not uniform across the region. For instance, in areas in which most demographic groups have ready access to quality education, outcomes for employment, health, food security, and resilience tend to be improved (Acker & Gasperini, 2009). Such factors indicate enhanced social stability that reinforces inclusive “peace and democracy” (Acker & Gasperini, 2009, p. 106). Conversely, in areas in which citizens struggle to participate actively in education without fear or personal repercussions, the same social stability indicators mentioned earlier tend to be lower, thereby, threatening the task of providing human security (Acker & Gasperini, 2009; Fuentes & Aravena, 2005). Other factors of securing educational programs in this region are difficult to measure over time: the types of attacks, numbers of schools attacked, declining staff recruitment, disruption of student attendance, posttraumatic stress suffered by students and faculty, and unrepaired infrastructure (GCPEA, 2014). Regardless, “hundreds of thousands of children have been denied access to education, in some cases for years, because of the length of time schools are closed” (GCPEA, 2014, pp. 58–59) due to the unwillingness or incapability of local governments to rebuild. This diverse range of educational experiences of migratory populations in the Western Hemisphere continues to influence the social stability and thus security in the region.

Educational practices can particularly impact cultural perceptions of power in both positive and negative ways. Education leaders advocating for social liberation through greater awareness of antidemocratic, exclusionary practices by those in power have led to significant movements in Brazil and the United States. This has been exemplified by institutions such as the Highlander Folk School, which bore the fruits of Deweyan pragmatism (Dewey, 2008; Freire, 2011, 2014; Thayer-Bacon, 2004). While social-political movements of power such as the U.S. civil rights movement have promoted liberation, education can also foster the entrenchment of values and practices mandated by those in power (Acker & Gasperini, 2009; Pherali, 2016). Given these contradictory effects, education has the power to “generate favourable conditions for violent conflict” (Pherali, 2016, p. 202). In other words, educational practice in the Western Hemisphere has often reflected a dynamic dichotomy of facilitating or harming security.

If public (particularly military) educational institutions fail to value social investment in human capital, risks to internal and regional security will remain. Educa-



tors have argued that the social-cultural contexts of public education for emerging generations ultimately relate to the rise of social issues of security, governance, and justice (Giroux, 2015; Gramsci, 2002). The neoliberalist trend currently expanding in educational institutions helps to entrench social inequalities. In these instances, the society's youth may appear to have been commodified and could even be considered disposable to those in power (Giroux, 2015; Pherali, 2016). Conversely, education can serve to raise public consciousness of structures of oppression, thereby linking education to personal experiences and social resistance (Freire, 2011; Kim, 2016). Military and civilian educators can play a significant role by promoting social awareness and action among transnational populations.

Developing Human Capital: Relationship of Military Education to Security

Education and human security are integrally linked through civic empowerment and the acquisition of essential skills (Fuentes & Aravena, 2005). Human capital is a theoretical concept that embraces the civic benefits of education for societies and cultures. It places knowledge at the center of local, state, and regional levels of economic development by establishing education as a long-term investment (Tan, 2014). Within this developmental context, human security educational programs can foster awareness of human rights for all members of society to promote civil discourse, sustainable peace and development, and governance throughout the Western Hemisphere (Al-Rodhan, 2007; Fuentes & Aravena, 2005). In this sense, human security is a subset of national security with long-term implications for civil society, rule of law, and the civilian control of the military. This section examines human capital in terms of its regional context and the tension of peace and conflict studies.

Contemporary context of education. Internal frictions within states have often stymied the development of social and public services, including education. Since their independence, many Latin and Central American states such as Colombia and Venezuela have largely struggled against internal conflicts born of violent revolutions, counterrevolutions, and authoritarianism. Strife within these states has influenced and constrained the advancement of governance and education throughout the region. "In this regard, internal armed conflict and authoritarian rule devastated South America, leaving many countries acutely divided and militarized, governed by corrupt, weak states, bereft of effective and trustworthy institutions" (Brett & Florez, 2016, p. 439). In other words, internal struggles have hampered the development of mature institutions, including education systems.

Interneine conflicts between states and normative theories of political science that emphasize power dynamics have traditionally resulted in a state-centered focus in western hemispheric case studies. Brett and Florez (2016) describe this realist focus and its



impact on localized analysis: “Scholarship on peacebuilding in Latin America generally, and South America in particular, has tended to adopt a state-centric approach, focusing upon formal peace processes and other top-down mechanisms of conflict transformation, dismissing the role of locally driven initiatives in conflict transformation” (pp. 442–443). Localized structures of social and cultural stability, such as public and military education systems, have received relatively little notice. Theoretical approaches to studies of security and educational issues in Latin America should expand to include multidimensional aspects of social-cultural realities regarding conflict resolution and the development of local structures of stability and cooperation (Brett & Florez, 2016; Rockwell & Anderson-Levitt, 2017).

Besides dealing with aspects of conflict, many Caribbean and Latin American countries continue to face barriers to the development of educational institutions—particularly for less privileged and underrepresented populations. One indicator of this is the relatively low level of reporting for “standardized learning assessments using inclusive strategies that enable data collection on populations with disabilities” (UNESCO Institute for Statistics, 2016, p. 20). Since the end of major civil strife in the 1980s, the relative calm in Latin America has allowed room for some domestic institutions to develop, albeit at a slower-than-desired pace. This laggard pace is due largely to the continued presence of transnational criminal networks (e.g., *Los Perrones Orientales and Mara Salvatrucha* [MS-13]) and remnant corrupt bureaucratic structures such as money-laundering activities in El Salvador and Honduras (Mace, Thérien, & Gagné, 2012).

Still, outside of the United States, little research in the Western Hemisphere has examined the effect on the development of young adults, even in developed nations such as Argentina (Tanner et al., 2009). The quasi-legal status of many migrant populations who traverse borders—sometimes in both directions, and often undocumented—coupled with reactive or inactive national legislation, have complicated migrants’ stability and identity over the last several decades (Novaro & Bartlett, 2017). An indication of this is the recent ethnographic research into the impact of immigration experiences on young adult psycho-social identities (Whitaker, 2012).

Over time and generations, ethnocentric understandings of complex issues such as educational investment in human capital can have a deleterious effect upon security policy and development. When national governments and societies can only see problems defined in their own terms, they are less capable of creating solutions that deliberately assist citizens of others. As a result, regional cooperation can deteriorate and thus negatively impact migrants in the region.² Additionally, the migration of educated, skilled workers such as one in 12 from Latin America and one in two from the Caribbean can siphon human capital reserves and may hinder technological development in transnational areas (DIA Internship Programs; Di Maria & Lazarova, 2011; see also Jerez, 2018, for skilled labor data). Because of such barriers to economic and political development, socially situated programs such as education have suffered in many areas. This continuous tension



between conflict and peace characterizes the contemporary reality of security and stability throughout the hemisphere.

Two sides of the security coin: conflict and peace. Imagine that hemispheric security is represented by a coin. On one side resides peace and development; on the other side lurks conflict and crisis. This is not to say that conflict and peace are mutually exclusive; they often overlap. Looking at this image through the lens of education in the public sphere can help clarify the relationship between education and security. In a sense, PME can be value-neutral. On one hand, it can help perpetuate parochial ideologies of conflict and crisis. On the other hand, it can promote peace by empowering individuals to envision long-term development and develop creative solutions to systemic problems entrenched for generations in their social-national narratives (Gramsci, 2002). The substantive element of this coin is the human capital that makes the stakes of flipping it so high. The potential implications of this peace/development and conflict/crisis dialectic are significant for all security stakeholders in the Western Hemisphere (Al-Rodhan, 2007; Fuentes & Aravena, 2005; Mace et al., 2012).

Education is a political phenomenon because it requires the social-cultural and economic investment of limited resources by stakeholders—that is, citizens, classes, military, political leaders, and institutions—to develop human capital for future generations. Given this article’s scope, military and civilian educators often make open-minded, political decisions that favor certain peoples over others within particular cultural-historical contexts (Freire, 2014; Gramsci, 2002). Freire (1992/2008, 2014), the Brazilian educational philosopher, contends that education is a distinctly human and necessary political activity that involves an awareness of our limited knowledge and an iterative process of becoming who we are. This approach builds upon education pioneers Dewey (2008) and Lindeman (1926/1989) who asserted that adult education has a humanist goal of forming better citizens of a society who learn to act responsibly from lived experiences. In other words, adult education is primarily an act of communication based upon a reflection of lived experiences over a life course and how they may apply to a learner’s future (Dewey, 2008). When communication breaks down, conflict can often arise and negatively impact the delivery of education to the underserved.

Educators and parents are instrumental stewards of future human capital, whose impact can greatly influence the security requirements throughout the hemisphere. The political nature of military education can complicate matters when the security coin is tossed. Perhaps a theoretical, but no less applicable, issue concerns the varying characteristics of public education in the Americas. Even in the same country, public schools vary in state/provincial laws, measures of performance, budgeted resources, and student demographics—not to mention separate programs for indigenous communities. For this reason, the relationship between security and public education becomes more complex as researchers and policy makers probe more deeply. For instance, “In recent years, education has also become an integral part of counter-insurgency strategy [including the U.S. and Canada], resulting in militarization of



education aid in conflict-affected countries,” (Pherali, 2016, p. 195) particularly as within Colombia since 1999 (see also King, 2011; Novelli, 2011).

The presence of conflict adversely impacts local schooling. In fact, “Violent conflicts disrupt educational processes. Schooling often becomes paralysed when educational infrastructure is destroyed and teachers, children and educational authorities are caught in violent conflict” (Pherali, 2016, p. 194). As a result, military activities taken in the name of security have often harmed the education of young citizens: “Assaults on education are carried out for ideological, political, ethnic or military reasons, but the direct victims of violence are usually innocent children and teachers” (Pherali, 2016, p. 194). Examples of such assaults include state-controlled militaries and police forces as well as criminal organizations in Colombia and Mexico seizing local schools and putting students, teachers, and administrators at risk (GCPEA, 2014; Pherali, 2016).

Perhaps a more fitting metaphor is light (the development of human capital as a result of educational progress and the military support of civilian authorities) shining in dark areas. This is not meant to infer that regions within the Western Hemisphere are inherently unenlightened by the light of democratic institutions; rather, education can positively impact the quality of life for individual citizens, provide them hope, and, thereby, facilitate regional development. Regardless of the metaphor, conflict and peace underpin the developmental and security currents in the Western Hemisphere.

Dealing with Transnational Threats

The linkage of educational failures to regional security may initially seem specious, but there is ample evidence of contemporary threats to quality education that have continued to challenge societies throughout North and South America. This section presents but a few of these instances that highlight security issues and the roles of adult educators.

Adult educators as historical-cultural messengers in transnational contexts.

Transnational structures offer some promise for educators to counter instability such as weak governance, limited social mobility, opaque justice systems, and joblessness (Isacson, 2015; Manwaring, Fontela, Grizzard, & Rempe, 2003). Ongoing initiatives by the United Nations Educational, Scientific and Cultural Organization (UNESCO) at global and regional levels to coordinate educational policy and opportunities for disenfranchised Latin American and Caribbean populations of all life stages indicate the linkage of global citizenship education to national strength and quality of life (UNESCO Regional Bureau for Education in Latin America and the Caribbean, 2016). In particular, the direct relationship between education for rural people and the development of quality of life (e.g., health, food security) over time has motivated many policymakers to strengthen national and regional education programs (Acker & Gasperini, 2009).

Regional educational programs in the Americas have nurtured an awareness by social stakeholders to promote stability and therefore security. For example, region-



al organizations such as the Caribbean Council for Adult Education have promoted programs for adults that go beyond literacy so that adult learning is accepted as a “lifelong phenomenon with the power to transform human lives across national boundaries” (Alfred & Nafukho, 2010, p. 101). Additionally, heightened advocacy for protecting institutions of public education, from primary to higher levels, have “called greater attention [and some response] to the issue of attacks” (GCPEA, 2014). In other words, nations that invest in policies and programs supporting lifelong learning will contribute to the development of citizens who can think clearer and make better decisions to create cultures that protect human rights and promote stability—key implications for hemispheric security.

In this context, educational stability is a relative term that places emphasis on students and educators in their contemporary society and cultures rather than affiliated institutions and locations. Transnational populations of students often fail to conform with Anglo-centric concepts of stable, progressive education systems in which borders—whether between school districts or international borders—are well defined (Rockwell & Anderson-Levitt, 2017). Much of this complexity derives from the fact that minority populations in the United States are often majorities in many Latin American nations and that migrants exhibit “complex cycles of leaving and returning, both across and within national boundaries” (Rockwell & Anderson-Levitt, 2017, p. 17). As a result of this transnational context of education in the Americas, educators can influence migratory students and their parents across a broad range of geography, cultures, and languages over lifetimes.

Implications for Future Stability and Development Efforts

Education’s span of social influence in the Western Hemisphere cannot be understated because it helps mold the foundation for future stability and development initiatives. In this section, the author describes a few of these initiatives rooted in the contemporary social-cultural context of the Americas: stabilization amidst globalization, PME programs, and the potential transformative properties of education in a contemporary society.

Political and economic stability in a globalized world. Social and military leaders, including elected and school officials, must choose to employ education as a tool for stability and development; otherwise, curricula can be—as they have been—used to reinforce unequal power structures and majority dominance. Freire (1992/2008, 2011) describes this implication as a public awareness, an awakening not only to entrenched oppression but also to potential opportunities for individual citizens.

In the era of globalization, education serves as a mechanism for social, political and economic control, which is exercised in the consensual mutuality between political elites and corporate interests. In this context, societies struggle to



MILITARY EDUCATION AS A DIMENSION

cultivate humanity against the dominance of neoliberalism as well as to make schooling relevant to disenfranchised populations while recognizing the social and cultural situationality of education. (Pherali, 2016, p. 193)

Put another way, globalization has facilitated economic development across borders, but it has also challenged the advancement of disenfranchised citizens in transnational contexts of education.

National security is one context in which military education has intersected with growth throughout the hemisphere in recent decades. National security and education, as key elements of developmental strategy, have continued to merge after the Cold War, influencing transnational policies by western powers (Novelli, 2011). Despite this growth in peacebuilding evident in peace accords brokered in El Salvador (1992) and Guatemala (1996), Central America now has one of the highest homicide rates in the world (Pearce, 2016). South America is not too far behind in violence levels, although it has only one extant internal conflict on the continent. To date, there have been over 250,000 casualties and more internally displaced persons in Colombia as a result of its decades-long armed conflict between the government and the *Fuerzas Armadas Revolucionarias de Colombia*, or FARC (Santos, 2017). This continual level of violence, albeit sporadic throughout the region, directly limits human development in affected communities and thus educational access (Pearce, 2016; Santos, 2017). One area that illustrates the potential of education to help or harm security is the militarization of education and educational institutions in conflict-ridden regions (Pherali, 2016).

Professional military education. Hemispheric stakeholders have invested educational resources for decades in their junior military leaders. The *Army Learning Strategy* highlights three primary lines of effort that epitomize the service's commitment to develop lifelong learners: learning environment, learning leaders, and program evaluations (Kem, 2017). U.S. military professionals have recognized the importance of designing and delivering content and pedagogies that appeal to upcoming generations of leaders while preparing them for complex challenges, especially in cognitive skills and science and technology subjects (DuBois, 2017; Polson, 2010; Zacharakis & Van Der Werff, 2012). After the relatively stable security environs of the Cold War, adult educators at U.S. and Canadian PME institutions foresaw a need to develop strategic-minded leaders through enhanced military cooperation and exchanges (Hernández, 2014; Mace et al., 2012). Recent curriculum revisions at the U.S. Army Command and General Staff College that return to an emphasis on cognitive development and the management of large-scale operations reflect an historic trend in U.S. military officer education (Schifferle, 2010). It was apparent even at the turn of the millennium that military leaders from across the Americas and at all levels would require education in security studies and opportunities to develop as strategic



leaders by utilizing the resources from both military and civilian education institutions (Smith, 2001). Thus, military education in the Americas has had a transnational element for some time.

A PME institution that has embraced this transnational security mission is the Western Hemisphere Institute for Security Cooperation (WHINSEC). Not only does the school's curriculum offer mid-career officers from over 30 countries a graduate experience delivered in Spanish, but the school also offers students an accredited master's degree in military arts and sciences (Hernández, 2014). Concurrently, it exemplifies the tendency for U.S. PME schools to favor small-group seminars led by practitioners rather than scholars, which some suggest may not adequately prepare students for complex future operational environments (Robinson, Armbruster, & Snapp, 2015). This model of transnational cooperation illustrates the potential for PME institutions to transfer values and expectations throughout the region, but there is also the increasing demand for competency-driven, decentralized learning that individual schools cannot meet (Robinson et al., 2015). Educational and security leaders must also think beyond the traditional boundaries of institutions for the future development of human capital in a regional context.

Harnessing education as a transformative force for conflict or peace: our choice. With the advent of more readily available information technology, local populations have progressively gained more control over education systems. This increased access to information has significant long-term implications for both military education and security domains in the Western Hemisphere—particularly in areas affected by conflict. Information can now spread quickly at multiple levels via “peer-to-peer learning platforms” (Robinson et al., 2015, p. 61) rather than through traditional educational institutes. With enhanced access to education, local populations will still need to choose how they apply what they learn.

Another transformative aspect of education in the Americas has been an increased awareness of the need to provide more population groups access to more programs. Besides the military, the U.S. interagency community has strived to attain and maintain professional educational quality, particularly for intelligence and security services. Since 1994, the National Security Education Act authorizes grants for U.S. citizen undergraduate and graduate students to attend targeted language and area studies programs abroad (Congressional Research Service, 2005). While programs such as this can help recruit individuals trained in critical skill sets, they can also set a precedent for sponsor institutions that wish to remain independent of federal interference in individual courses of study. “Peacebuilding education should help liberate minds from the tyranny of dominant ideologies that block progressive thoughts and erode learners’ confidence to seek alternative meanings of human life” (Pherali, 2016, p. 202). In other words, higher education leaders can make decisions now that will affect security throughout the hemisphere for future generations.



In the end, there are several long-term implications of securing educational programs against conflicts that arise from social-cultural instability throughout the Western Hemisphere. Many of these implications have yet to be analyzed because of the difficulty in consistently documenting the many different variables involved in educational security in this region. As a result, access to education remains a critical issue for local authorities and hemispheric security in the long term.

Conclusion

Scholars continue to question the normative, parochial perspectives of security as a state-centered phenomenon readily interpreted by liberal-realist theories and solved by military power (Bagley et al., 2015; Carey, 2016). Public education has and will continue to play a role in security issues in the Western Hemisphere. Particular issues related to this role were examined: (1) security-related issues in education, (2) human capital as a social-cultural relationship between education and regional security/conflict, (3) nature of related transnational threats, and (4) implications for future stability and development. Education, particularly in conflict zones, will continue to be a national and hemispheric security issue until leaders of local societies and cultures claim responsibility for their roles and impact on future stability and development.

Future areas of research may further address these and related issues. For example, comparing ethnographic educational studies could help discern trends potentially addressed by policymakers and other stakeholders throughout the hemisphere. These interdisciplinary inquiries should also address how policies and resources affect indigenous communities. Furthermore, comparative ethnographic case studies could not only examine the cross-border phenomena that impact the lives of migrational peoples but also the policies that influence their identities as members of multiple cultures (Novaro & Bartlett, 2017; Rockwell & Anderson-Levitt, 2017). Finally, critical theoretical frameworks (e.g., feminism, critical race theory, or critical pedagogy) that question the reproduction of or resistance to power structures in educational institutions could help clarify the complex relationships between military educational systems and national security not only in the Western Hemisphere but also in other geographic and cultural regions as well (Freire, 1992/2008, 2014; Kim, 2016).

The epigraph of this article highlighted the linkage of public military schools to the development of human capital, which has become the foundation of national security. If this premise is sound for the Western Hemisphere, military educators and civilian policy makers alike will succeed to the extent that they collaborate for the benefit of their collective human capital. In this multifaceted and globalized context, contemporary leaders of military learning have a unique opportunity to foster societal development and regional security. ❧



References

- Acker, D., & Gasperini, L. (2009). *Education for rural people: The role of education, training and capacity development in poverty reduction and food security*. Rome, Italy: Food and Agriculture Organization of the United Nations.
- Alfred, M. V., & Nafukho, F. M. (2010). International and comparative adult and continuing education. In C. Kasworm, A. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of adult and continuing education* (2010 ed., pp. 93–102). Los Angeles, CA: Sage.
- Al-Rodhan, N. R. F. (2007). *The role of education in global security*. Geneva, Switzerland: Editions Slatkine.
- Bagley, B. M., Kassab, H. S., & Rosen, J. D. (2015). Conclusion. In B. Bagley, J. Rosen, & H. Kassab (Eds.), *Reconceptualizing security in the Americas in the twenty-first century* (pp. 323–327). Lanham, MD: Lexington Books.
- Bennett, E., & Bell, A. (2010). Paradox and promise in the knowledge society. In C. Kasworm, A. Rose, & J. Ross-Gordon (Eds.), *Handbook of adult and continuing education* (2010 ed., pp. 411–420). Los Angeles, CA: Sage.
- Brett, R., & Florez, D. (2016). Peacebuilding in South America. In O. Richmond, S. Pogodda, & J. Ramovic (Eds.), *The Palgrave handbook of disciplinary and regional approaches to peace* (pp. 438–449). New York, NY: Palgrave MacMillan.
- Carey, H. F. (2016). North America: Peace studies versus the hegemony of realist and liberal methods. In O. Richmond, S. Pogodda, & J. Ramovic (Eds.), *The Palgrave handbook of disciplinary and regional approaches to peace* (pp. 463–475). New York, NY: Palgrave MacMillan.
- Congressional Research Service (CRS). (2005). National security education program background and issues (CRS Report RL31643). Washington, DC: CRS. Retrieved from https://www.everycrsreport.com/files/20050121_RL31643_98de362590a79d7972be607297074f0f663a90fc.html#TOC1_2
- Dewey, J. (2008). *Democracy and education*. Radford, VA: Wilder.
- DIA Internship Programs. (n.d.). Retrieved from <http://www.dia.mil/Careers/Students/Cooperative-Education-Program/>
- Di Maria, C., & Lazarova, E. A. (2011). Migration, human capital formation, and growth: An empirical investigation. *World Development*, 40(5), 938–955.
- DuBois, R. F. (2017). *Science, technology, and U.S. national security strategy: Preparing military leadership for the future*. Lanham, MD: Center for Strategic & International Studies.
- Freire, P. (1992/2008). *Pedagogy of hope: Reliving pedagogy of the oppressed*. London: Continuum.
- Freire, P. (2011). Pedagogy of the oppressed. In S. Merriam and A. Grace (Eds.), *The Jossey-Bass reader on contemporary issues in adult education* (pp. 20–32). San Francisco, CA: John Wiley & Sons.
- Freire, P. (2014). Pedagogy of solidarity. In *Pedagogy of solidarity* (pp. 15–34). Walnut Creek, CA: Left Coast Press.
- Fuentes, C. F., & Aravena, F. R. (2005). *Promoting human security: Ethical, normative and educational frameworks in Latin America and the Caribbean*. Paris, France: United Nations Educational, Scientific and Cultural Organization (UNESCO).

MILITARY EDUCATION AS A DIMENSION

- Giroux, H. A. (2015). Domestic terrorism, youth, and the politics of disposability. *Knowledge Cultures*, 3(5), 116.
- Global Coalition to Protect Education from Attack (GCPEA). (2014). *Education under attack 2014*. New York, NY: GCPEA. Retrieved from http://protectingeducation.org/sites/default/files/documents/eua_2014_full_0.pdf
- Gramsci, A., & Buttigieg, J. A. (2002). From the “prison notebooks.” *Daedalus*, 131(3), 71–83.
- Hernández, P. R. (2014, May-August). WHINSEC y la maestría en artes y ciencias militares [WHINSEC and the master’s in military arts and sciences]. *Military Review*, 69(4), 84–88. Retrieved from http://www.armyupress.army.mil/Portals/7/military-review/Archives/Spanish/MilitaryReview_20140831_art014SPA.pdf
- Isacson, A. (2015). The slog: Colombia’s endless battle against the illegal drug trade. In B. Bagley, J. Rosen, & H. Kassab (Eds.), *Reconceptualizing security in the Americas in the twenty-first century* (pp. 147–163). Lanham, MD: Lexington Books.
- Jerez, C. (2018). The right to education is challenged for migrants in the region. *UNESCO Office in Santiago*. Retrieved from http://www.unesco.org/new/en/santiago/press-room/single-new/news/latin_america_and_the_caribbean_migrant_and_refugee_childr/
- Kem, J. S. (2017). *The Army University—Army Learning Strategy*. Fort Leavenworth, KS: The Army University.
- Kim, J.-H. (2016). *Understanding narrative inquiry: The crafting and analysis of stories as research*. Los Angeles, CA: Sage.
- King, I. (2011). Militarization of aid and its implications for Colombia. *Cornell International Affairs Review*, 5(1), 1–2. Retrieved from <http://www.inquiriesjournal.com/articles/1225/militarization-of-aid-and-its-implications-for-colombia>
- Klein, J. I., Rice, C., & Levy, J. (2012). *U.S. education reform and national security* (Independent Task Force Report No. 68). New York, NY: Council on Foreign Relations.
- Lindeman, E. C. (1926/1989). *The meaning of adult education*. Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education.
- Mace, G., Thérien, J.-P., & Gagné, S. (2012). Canada and the security of the Americas: Between old threats and new challenges. *International Journal*, 67(3), 603–622. See also *Organized Crime in Central America* at <https://www.wilsoncenter.org/event/organized-crime-central-america>.
- Manwaring, M. G., Fontela, W., Grizzard, M., & Remppe, D. (2003). *Building regional security cooperation in the Western Hemisphere: Issues and recommendations. Shaping the regional security environment in Latin America*. Carlisle Barracks, PA: Strategic Studies Institute (SSI).
- Novaro, G., & Bartlett, L. (2017). Ethnographies of migration and education in the United States and Argentina: Disrupting discourses of assimilation and inclusion. In K. Anderson-Levitt & E. Rockwell (Eds.), *Comparing ethnographies: Local studies of education across the Americas* (pp. 91–118). Washington, DC: American Educational Research Association (AERA).
- Novelli, M. (2011). Are we all soldiers now? The dangers of the securitization of education and conflict. In K. Mundy & S. Dryden-Peterson (Eds.), *Educating children in conflict zones: Research, policy, and practice for systemic change: A tribute to Jackie Kirk* (pp. 49–66). International Perspectives on Education Reform Series. New York, NY: Teachers College Press.



- Pearce, J. (2016). Central America: From war to violence. In O. Richmond, S. Pogodda, & J. Ramovic (Eds.), *The Palgrave handbook of disciplinary and regional approaches to peace* (pp. 450–462). New York, NY: Palgrave MacMillan.
- Pherali, T. (2016). Education: Cultural reproduction, revolution and peacebuilding in conflict-affected societies. In O. Richmond, S. Pogodda, & J. Ramovic (Eds.), *The Palgrave handbook of disciplinary and regional approaches to peace* (pp. 193–205). New York, NY: Palgrave MacMillan.
- Polson, C. J. (2010). Military contributions to adult education. In C. Kasworm, A. Rose, & J. M. Ross-Gordon (Eds.), *Handbook of Adult and Continuing Education* (2010 ed., pp. 263–273). Los Angeles, CA: Sage.
- Robinson, P., Armbruster, M., & Snapp, H. (2015). Uplinking into the future: Education in 2030. In P. Bartone & M. Armbruster (Eds.), *Shifting human environment: How trends in human geography will shape future military operations* (DTP 107, pp. 48–63). Washington, DC: National Defense University Press.
- Rockwell, E., & Anderson-Levitt, K. (2017). Introduction—Comparing ethnographies across the Americas: Queries and lessons. In K. Anderson-Levitt & E. Rockwell (Eds.), *Comparing ethnographies: Local studies of education across the Americas* (pp. 1–25). Washington, DC: AERA.
- Santos, J. M. (2017). Peace in Colombia is also peace for the world. *United Nations Development Program, Human Development Reports* (2017). Retrieved from <http://hdr.undp.org/en/content/peace-colombia-also-peace-world>. Santos wrote this article as president of Colombia and the 2016 Nobel Peace Prize Laureate.
- Schifferle, P. J. (2010). *America's school for war: Fort Leavenworth, officer education, and victory in World War II*. Lawrence, KS: University Press of Kansas.
- Skaggs, D. (2014). Higher education as a matter of national security: Can a democracy plan ahead? *Liberal Education*, 100(1), 32–37.
- Smith, J. M. (2001). Educating international security practitioners: Preparing to face the demands of the 21st century international security environment. In *Educating international security practitioners: Preparing to face the demands of the 21st century international security environment* (pp. 1–4). Carlisle Barracks, PA: SSI.
- Tan, E. (2014). Human capital theory: A holistic criticism. *Review of Educational Research*, 84(3), 411–445. doi:10.3102/0034654314532696
- Tanner, J. L., Arnett, J. J., & Leis, J. A. (2009). Emerging adulthood: Learning and development during the first stage of adulthood. In M. Cecil Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development* (pp. 34–67). New York, NY: Routledge.
- Thayer-Bacon, B. J. (2004). An exploration of Myles Horton's democratic praxis: Highlander Folk School. *Educational Foundations*, 18(2), 5–23.
- Tran, T., Oliveira, M., Sider, J., & Blanken L. (2018). Ignorance and professional military education: The case for operational engagement. *War on the Rocks*. Retrieved from <https://warontherocks.com/2018/11/ignorance-and-professional-military-education-the-case-for-operational-engagement/>
- UNESCO Institute for Statistics. (2016). *Data availability for the calculation of SDG 4-education 2030 indicators: Analysis covering Latin America and the Caribbean* (Information Paper No. 30). Montreal, Canada: UNESCO. Retrieved from <http://uis.unesco.org/sites/default/files/documents/data-availabil->



MILITARY EDUCATION AS A DIMENSION

[ity-for-the-calculation-of-sdg4-education-2030-indicators-latin-america-and-the-caribbean-2016-en.pdf](#)

UNESCO Regional Bureau for Education in Latin America and the Caribbean. (2016). *Annual report 2015*. Paris, France: UNESCO.

Whitaker, C. (2012). Immigration and identity. *School of Social Service Administration Magazine*, 19(2). Retrieved from https://ssa.uchicago.edu/ssa_magazine/immigration-and-identity

Zacharakis, J., & Van Der Werff, J. (2012). The future of adult education in the military. In J. Zacharakis & C. Polson (Eds.), *Beyond training: The rise of adult education in the military* (pp. 89–98). San Francisco, CA: Jossey-Bass.

Notes

1. Transnational populations are citizens whose individual behavior—for example, migration for asylum—is motivated by cross-border agencies like the military who sometimes operate across national boundaries.

2. Regional cooperation can suffer especially when it is unaided by cooperative educational programs that extend across borders such as the U.S. Defense Intelligence Agency's program that affords employees opportunities to study in other countries to hone their language and functional skills.



Motivating and Educating Millennials

Sgt. Maj. Kanessa Trent

U.S. Army Sergeants Major Academy

Abstract

This article examines the literature regarding how millennials learn and are motivated to learn. It studies the research specific to generational gaps and whether they exist in the U.S. Army's education programs. It examines characteristics about the millennial population and how these characteristics affect this generation's education practices and lifelong learning. Other topics include examining existing research to identify the best methods to educate and motivate students from this generation, and determining if learning models and technology usage require a paradigm shift within the Army Learning Concept/Model format. The research suggests that, due to immediate access to information as a result of growing up with digital technology at their fingertips, millennials not only learn differently but are also motivated to learn through technologies not previously leveraged by educators and the U.S. Army.

Motivating and Educating Millennials

Educators and senior leaders in the U.S. Army must know how to identify with, understand, and adapt to the needs of the millennial generation to ensure that Army education achieves the required core objectives. Understanding the common and defining characteristics of millennials and of future generations enhances the learning environment. Understanding generational differences allows for a more informed staff and faculty. Professional military education (PME) instructors must consider generational differences and individual learning preferences for efficacy.

As of April 2017, the millennial generation comprised 82% of the U.S. Army, according to Headquarters, Department of the Army Personnel Military Strength Analysis and Forecasting Directorate. Moreover, the millennials are the largest generation in U.S.

history. Their birth years are generally accepted to run from 1980 to 2000, which totals nearly 78 million live births (Rainer & Rainer, 2011). Clearly, the characteristics and collective themes that define this generation will be important to all educators committed to tailoring their educational approach to be most effective for this generation's learning. This will require awareness of the widespread misconceptions and misunderstandings about this generation that may cause unnecessary confusion in the adult education system (Werth & Werth, 2011).

Purpose and Importance

This article focuses specifically on education and generational considerations for this important segment of the U.S. Army. To properly address the learning needs of this generation, all instructors and Army leaders who are responsible for the education, training, and the professional development of soldiers throughout their careers need to understand the myths, stereotypes, and trends of millennials and the next generation of soldiers, Generation Z. Considering the overwhelming proportion of young adults in the military, integrating what is known about this and future generations of soldiers into revisions to PME and Army learning models will directly benefit soldiers, the institution, and readiness by ensuring soldiers are best prepared for current and future missions.

As Hinote and Sundvall (2015) noted, taking the time to understand the fundamental values, beliefs, and views that shape this generation will only provide better cohesion. For the Army, a review of literature and subsequent qualitative and quantitative research regarding educational approaches best suited for millennials will highlight ways senior leaders can educate and motivate millennial soldiers to leverage the current generation's strengths and directly influence lifelong education requirements for the foreseeable future. Ultimately, application of appropriate educational approaches in both brick-and-mortar and distance-learning environments, whether in garrison or on the battlefield, will improve the Army's readiness as it prepares for large-scale combat operations with near-peer adversaries.

Sgt. Maj. Kanessa Trent has served in a variety of public affairs positions from brigade to four-star command during her years in the U.S. Army. She currently teaches in the Department of Joint, Interagency, Intergovernmental and Multinational at the Sergeants Major Course. She holds a master's degree in adult education and lifelong learning from Pennsylvania State University, a master's degree in leadership studies from the University of Texas—El Paso, and a BS in journalism with a double minor in marketing and mass communication from Thomas Edison State University. She has deployed to Haiti, Panama, Bosnia, and Afghanistan, as well as to more than a dozen countries across the Indo-Asia-Pacific region. Trent was the Department of the Army's 2002 Journalist of the Year.



Literature Review

To identify potentially relevant literature, the keyword search included academic and peer-reviewed databases related to education and millennials. The search included the following key terms: millennials, Generation Y, Generation Z, generation gaps, adult education, motivation; learning models, U.S. Army, lifelong learning, change in adult education landscape, technology and education, Noncommissioned Officer Professional Development System; and workplace education. These terms allowed for a comprehensive examination of the literature, research, studies, and exploration of the millennial generation to provide recommendations to advance the U.S. Army's approach to educating millennials who currently make up the preponderance of the active duty force.

The libraries and databases used to gather information, studies, research, and literature included the Pennsylvania State University Online Library; ERIC (ProQuest); ProQuest Education Journals; Google Scholar; El Paso Public Library Westside Branch; Amazon.com Books; the U.S. Army's homepage and subsequent databases; and Headquarters, Department of the Army G-1 (personnel) database and intranet portal.

This search focused on literature published since 2006 to conduct a current analysis of the millennial generation's educational practices, desire to learn, and classroom behaviors specific to lifelong learning. An exhaustive review of early research beginning shortly after the first millennials were born, 1980 being the earliest, was also important in establishing, reviewing, and highlighting trends over time specific to this group of adult learners.

The literature review examined the significant work of education pioneers and other subject matter experts in the field of adult education. Specifically, Kolb (1984) provided the initial theoretical foundation for experiential learning, while *The Handbook of Adult and Continuing Education* (Kasworm, Rose, & Ross-Gordon, 2010) provided the context, the history, and current philosophies surrounding experiential learning and adult education. Finally, Strauss and Howe's book *Generations: The History of America's Future, 1584 to 2069* (1992), provided information for this article regarding understanding generational differences and how they affect learning and motivation over time.

Comparative Methods of Analysis: Who Are the Millennials?

Understanding the characteristics of millennials identified through empirical studies helps to understand how the nuances of generational differences impact learning.

The idea of generational differences was introduced by Strauss and Howe (1992). The authors present a model is based on the assumption that the year they were born and the generation in which they were raised form a person's approach to everything in life. Each generation has distinctive frames of reference, including values, attitudes, and traits that influence how they see work, life, and health (Goldman & Schmalz, 2006).



It is important to understand the generation's perspectives and trends regarding motivation and education. Specifically, these are significant considerations for the Army as it strives to motivate and educate millennials. Strauss and Howe (1992) and other social philosophers define a generation as a cohort group with common traits and characteristics. Strauss and Howe (1992) expand and "base the length of a generational cohort-group on the length of a phase of life" (p. 60).

The millennials are the largest generation in U.S. history with nearly 78 million young adults born between 1980 and 2000 (Rainer & Rainer, 2011). Although the term "millennials" is the generally accepted designation for this generation, other terms are also widely used: Generation Y, Generation iY, Generation Z, The Digital Generation, The Internet Generation, Nexters, Screenagers, Bridgers, Electronic Natives, the Net Generation, and the Sunshine Generation (Elmore, 2010; Garcia & Qin, 2007; Rainer & Rainer, 2011; Strauss & Howe, 1992). Even within this group, nuanced differences exist between the first and second decades as a result of pervasive access to digital technology.

Rainer and Rainer (2011) conducted a study that included 1,200 millennials in the United States; the research included only those born in the first decade (1980–1991) of the generation. The research participants were demographically representative of the U.S. millennials population as a whole. The findings coincide with similar research studies showing that millennials are multitaskers and tech savvy, desirous of instant gratification and recognition, and focused on work-life balance and flexibility, collaboration, and career advancement. In addition, millennials have unique learning differences that require development to be aligned with their needs (Abbot, 2013; Beaver & Hutchings, 2005; Thompson, 2016).

The Rainer and Rainer (2011) study identified some overarching characteristics about this generation and what it collectively values (pp. 6–7). The study's findings suggest that millennials are a generation that have tremendous hope for the future. Three out of four millennials believe it is their role in life to serve others (Rainer & Rainer, 2011, pp. 6–7). Additionally, they are a generation that, as a whole, wants to make a positive difference for the future on a grand scale (Rainer & Rainer, 2011). Millennials are the "trophy generation" (where everyone gets a trophy), and they have been raised by "helicopter parents" (parents who hover and help oversee every decision they make), which influenced their view of themselves, of the world, and of what is possible. This generation was told routinely they were special; that the individuals of this generation were the "wanted" generation of children and were therefore raised to believe they could become anything that they want, no matter what their natural abilities or their limitations. As a consequence, they are generous, adventurous, protected, sheltered, and diverse, and yet they tend to be incredibly harmonious. They view themselves as civic-minded peacekeepers and have a strong desire to achieve greatness for themselves and their communities. They work well in teams, and they thrive in groups and on teamwork because they have been raised to believe that is the best way to approach anything and everything—from sports to school work. This generation expects problems to be solved in a participatory and collective manner (Rainer & Rainer, 2011). Millennials value diversity (racial and cultural) and push



Table 1

Breakdown of Millennials in Active Duty Army as of 30 April 2017

Total active duty Army force			
	Female	Male	Total
Enlisted	52,252	317,618	369,870
Commissioned officers	13,925	61,469	75,394
Warrant officers	1,363	12,976	14,339
Cadets	889	3,513	4,402
Total	68,429	395,576	464,005

Millennials			
	Female	Male	Total
Enlisted	46,589	275,435	322,024
Commissioned officers	9,314	37,362	46,676
Warrant officers	648	6,256	6,904
Cadets	889	3,513	4,402
Total	57,440	322,566	380,006

Table courtesy of the Headquarters, Department of the Army Personnel Military Strength Analysis and Forecasting Directorate.

for tolerance and equality more so than generations before them; they firmly believe in openness and acceptance. Rainer and Rainer (2011) further noted that, “The Millennials represent the most racially and ethnically diverse nation in America’s history” (p. 80).

A 2008 research project titled *Gaining the Edge: Connecting with the Millennials* echoes those common cohort characteristics and considers the impact on U.S. Air Force recruiters (Smith, 2008). When collectively assessing how the U.S. Army recruits millennials and expects a commitment of lifelong learning, understanding how best to educate this generation, and the next, has great importance for the institution.

Millennials in the U.S. Army

With 82% of the U.S. Army from the millennial generation, the characteristics and collective themes that define it are important to all Army educators. This includes

Table 2

Projected Population of Active Duty Army for Calendar Year 2025 as of 1 May 2017

Total Army force projections 2025					
	Birth years	Age range in 2025	Enlisted	Officers	Cadets*
Baby Boomers	1940–1959	66–85	—	—	—
Generation X	1960–1979	46–65	2.2%	7.5%	—
Millennials	1980–1999	26–45	52.7%	72.1%	—
Generation Z	2000–2019	6–25	45.1%	20.4%	100.0%
Millennials	1980–1999	—	323, 528	55,113	3,460*
Total force	All	—	370, 634	90, 981	3,460

Table courtesy of the Headquarters, Department of the Army Personnel Military Strength Analysis and Forecasting Directorate. *Projected

awareness of widespread misconceptions and misunderstandings about this generation that cause unnecessary confusion in the adult education arena (Werth & Werth, 2011).

Table 1 (on page 38) provides the breakdown of the active duty Army force numbers in several categories. The top half shows the number of total soldiers in the active duty Army as of 30 April 2017. The breakdown is specific to gender, enlisted soldiers, commissioned officers, warrant officers, and cadets (who will commission following college graduation). The total active duty Army force numbers for each category respectively are highlighted for a collective total of 464,005 soldiers. Millennial soldiers, born between 1 January 1980 and 31 December 2000, total 380,006 soldiers, or 82% of the active duty Army’s current force.

U.S. Army’s Projected Population in 2025

Table 2 highlights the projected population for the active duty Army force numbers in the year 2025. The table is categorized into four generations—baby boomers, Generation X, millennials, and Generation Z—who will serve either as enlisted soldiers, officers, or cadets in 2025. The chart shows both the numbers and percentages for each category. This includes those who would serve from Generation Z (those with a date of birth between 1 January 2000 and 31 December 2019). This breakdown projects the numbers for each category respectively with a collective total of 370,634 soldiers. In



2025, enlisted soldiers are expected to make up 45.1% while officers are projected to make up 20.4% of all the force. Most notable is that 100% of cadets—those in college—will be from the next generation by 2025. It is important to note that the National Defense Security Strategy could change this projection given the need for the Army to grow or decrease in size in the next eight years.

Motivating and Educating Future Generations and Implications for Education

The millennials are on track to become the United States' most educated generation. In 2007, the 25- to 29-year-old age group was entirely comprised of millennials and 30% had attained a college degree (Rainer & Rainer, 2011, p. 3). This has significant implications and impacts for the readiness of the U.S. Army as well as the education process and learning styles of these millennial student-soldiers. The autonomy expected of student-soldiers in a learning environment, especially given the emphasis on the Army's learning model, may be a challenge with this generation (U.S. Department of the Army [DA], 2011, p. 46).

Millennials appreciate big picture understanding, new information, and rapid application to help them learn quickly and perform well on the job. Millennials wish to understand the context and motivations behind the learning requests of others in order to commit to learning. The overall view of materials empowers them to determine how much time they will invest in new learning and how engaged they will be in the process. Additionally, Thompson (2016) discusses the need for this generation to have learning support preferences due to their upbringing with "helicopter parenting" and the need to understand the immediate application of acquiring new knowledge. Millennials typically prefer not to be detailed and in-depth in their educational pursuits. In fact, millennials are focused on what they want to learn and why, and are quite interested in applying new knowledge to work without significant discussion (Thompson, 2016, p. 23).

As the U.S. Army Training and Doctrine Command (TRADOC) looks for new, creative, and cost-effective ways to create an environment of continuous education, having a baseline understanding of what individually motivates these generations will ensure PME and Army Leader Development Program courses evolve to meet the needs of the organization specific to the majority of the soldier-student population. Specifically, creating interactive and entertainment based educational tools, rather than the prescriptive and individually focused self-structured development curriculum that is meant to force soldiers to continually educate, is a likely output of developing and improving senior leaders' understanding and appreciation for generations that are much different than their own.

Millennials prefer having the option to learn independently or in small groups to deepen their understanding of new information. Thompson (2016) notes that millennials focus on what they want to learn and expect to be told up front the important application of the curriculum. Without an understanding of the value of the learning, mil-



lennials may disengage from the learning process prior to meeting established learning objectives. While they value independent learning in some contexts, complete independence is not a characteristic that they cherish (Rainer & Rainer, 2011). This is important for educators to recognize because this generation requires substantial and “significant discussion” before applying new knowledge to work and respond well to “structured content delivery and the ability to resubmit work to improve grades” (Thompson, 2016, p. 22). This also has significant implications for course curriculum designers in classroom, distance learning, and blended learning environments. For those who educate student-soldiers in the U.S. Army, recognizing this trait is important because social and cognitive presence as well as autonomy will all be affected.

To establish healthy training and educational programs that contribute to the well-being of organizations, the learning styles, values, and preferences of each generation must be considered (Holyoke & Larson, 2009). The authors’ findings “showed that teachers and trainers of adult learners need to be aware of generational characteristics when developing lesson plans and training materials. Combining generational understanding with current adult learner theory provides a unique teaching as well as learning experience” (Holyoke & Larson, 2009, p. 18). Holyoke and Larson (2009) also looked at readiness to learn, orientation to learning, and motivation to learn. Of particular interest and worthy of consideration is the suggestion that teachers allow students to personalize their assignments so that they are relevant to their real life situation and employment. Additionally, Thompson (2016) discusses the need for this generation to have learning support preferences due to their upbringing with hovering parents and the need to understand the immediate application of acquiring new knowledge. Thompson’s (2016) research found that millennials respond well and may perform better when a learning support system is in place.

Experiential Learning and Millennials

Army leadership recognized education curriculum and delivery needed to be redesigned in order to match the decentralized decision-making processes used on the battlefield and in garrison. To ensure readiness and survivability in situations involving life or death, soldiers must possess the necessary skills and resources to critically analyze information and make sound decisions. Therefore, the Army redesigned its approach to formal education. The Army Learning Concept (ALC 2015) is outlined in Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-8-2, *The Army Learning Concept for 2015*. The approach to education focuses primarily on adaptability and readiness.

The model would develop adaptable Soldiers and leaders who have the cognitive, interpersonal, and cultural skills necessary to make sound judgments in complex environments. The model must have an adaptive development and



delivery system, not bound by brick and mortar, but one that extends knowledge to Soldiers at the operational edge is capable of updating learning content rapidly and is responsive to Operational Army needs. The model must be capable of sustained adaptation (DA, 2011, p. 16).

This idea was a dramatic shift for the U.S. Army from teacher-centered to learner-centered environments and focuses on the experiences of student-soldiers and how they can critically apply knowledge in real-world situations. The ALC 2015 closely models David Kolb's Experiential Learning Model (ELM) theory (Kolb, 1984; Kolb & Kolb, 2005a). In practice, ALC 2015 is applied as the Army Learning Model (ALM), defined as follows:

The Army's adaptive, continuous learning model that is routinely improved to provide quality, relevant, and effective learning experiences through outcome-oriented instructional strategies that foster thinking, initiative, and provide operationally relevant context which extends learning beyond the learning institution in a career-long continuum of learning through the significantly expanded use of network technologies. (DA, 2011, p. 46)

The U.S. Army currently uses the ALM to design, develop, and implement professional military education courses. Redesigned PME curriculum extends learning beyond the institution by incorporating blended-learning environments through which student-soldiers are able to engage in formal education without the traditional access restrictions of regardless of time or distance. As a result, lifelong learning is no longer merely a slogan or catch phrase; it is an apt description of soldiers' expectations and instituted measures to ensure continual professional learning and development.

Kolb's learning model incorporates four learning styles: accommodating, diverging, converging, and assimilating (Kolb & Kolb, 2005b, p. 44). Understanding learning styles is important not just for individual students but also for the instructor. An understanding of learning styles allows the facilitators to create a learning environment that is respectful of every student; open to all students' ideas, ways of thinking, and experiences; and considerate of how every person learns differently. The ALM and Kolb's ELM help the instructor establish such a classroom environment, one in which each student feels comfortable sharing and debating ideas to pave the way for a better noncommissioned officer corps and Army. Specifically, the instructor must ensure that each student feels valued and contributes routinely regardless of the topic or subject matter. To accomplish this, facilitators not only must gain commitment from their students to actively engage in the learning process but also must show that, as educators, they too are devoted to improving their knowledge, intellectual abilities, and their overall growth in learning alongside the student-soldiers. The teacher can assist every student's journey and success by encouraging creativity, critical thinking, honest



dialogue, and meaningful and facts-based debates to help shape a more strategic assessment of whatever topic is being taught. ALM allows for experiences to inform the subject matter and drive student-centered, dialogue-directed learning.

Fostering creativity in employees (soldiers and student-soldiers) is a useful and effective way to maintain readiness and competitiveness for the organization. To accomplish its mission, the Army must be capable of adapting to the ever-changing operational requirements. To do that, ensuring employee creativity, enthusiasm, and critical thinking must be a priority. Lazaroiu (2015) states that when workers are enthusiastic about their work for the sake of the work itself, rather than being motivated by the expectation that their work will bring about some kind of reward, the results are better. Motivating student-soldiers throughout their lifelong learning process in the Noncommissioned Officer Professional Development System program is a cornerstone of effective education practice.

Roberts, Newman, and Schwartzstein (2012) conducted extensive research into the intergenerational tension between teachers and learners in the medical profession education. Collectively, they offer 12 tips for facilitating millennials' learning. Key recommendations include understanding the concept of generational differences and the potential intergenerational tension that may impact learning. The data also recognized that, unlike previous generations, millennials require constant guidance and reminders to apply critical thinking skills. Specifically, the authors note that this generation of learners are used to fun, game-like, interactive, and engaging materials that often have an appealing look and feel (Roberts, Newman, & Schwartzstein, 2012, pp. 274–278).

It is important to note that not all researchers on the subject agree with the assertion that the attributes and characteristics of this generation are altogether different from previous generations. Specifically, some contend that the tenets of motivation in the classroom remain largely unchanged. The challenge is ensuring educators and administrators understand millennials and how to connect with them to best motivate and subsequently educate them. However, this does not necessarily require new approaches toward motivation. For example, Katzell & Thompson (1990) examined various motivational theories and practices, and they created a chart of useful and sensible approaches that are still immensely relevant to motivating learners in the classroom.

Application/Recommendations for Research/Implications

There are numerous recommendations for continued research specific to how millennials learn and what motivates them to do so. TRADOC should continue to look at this generation from a PME angle and consider the implications of how the institution as a whole is reacting to “how” it is teaching and the “who”—the target population of millennials. Another consideration is to have the Center of Army Lessons Learned begin consolidating operational feedback from the combat training centers and the centers of excellence



across the Army to look at new initiatives in education. One example might include looking at how unit organization leadership at Fort Huachuca, Arizona, has encouraged the use of Khan Academy (an educational organization that provides free instructional videos on various subjects for students and educators) as a method to reach its younger generation. TRADOC should consider the benefits of this practice, which incurs no cost to the government. The potential benefit may yield and codify best practices that have emerged to share across the entire Army force. Additionally, designing curriculum that leverages various digital technologies to connect with, even entertainment-based mediums, advances the knowledge of soldiers, and builds on their experiences to be more critical thinkers and leaders, which must be a top priority for educators in the U.S. Army.

Furthermore, the individuals of Generation Z, the next generation of soldiers, are currently in their early teen years. Understanding what that cohort expects from an education perspective is critical for the Army. Research predicts that Generation Z might create a disruption in higher education. “It is anticipated that Gen Zers will continue to prefer practical and hands-on learning given their desire for meaningful experiences. This predisposition will continue to raise the bar on active learning classrooms and pedagogy” (Ricketts, 2016, para. 60).

Edutainment

According to Werth and Werth (2011), one of the best ways to motivate and educate millennials is through the use of gaming technology in the classroom, both in the traditional sense and online (pp. 12–19). Interestingly, the authors highlight the U.S. Army’s “America’s Army” education program to assist with recruiting as one of the most prominent and effective ways to integrate the skill sets and know-how of gaming into the academic environment. The authors note that the U.S. Army game “America’s Army” was developed in 2002 in order to directly pursue the target audience of potential recruits—millennials. In fact, others who work within TRADOC have noted the importance of incorporating what has been termed “edutainment” as a primary source of reaching this generation of student-soldiers.

Keith Ferguson, an instructional designer for TRADOC, wrote in a December 2016 article that the Army needs to embrace “edutainment,” a term he defines as a combination of education and entertainment, which the Walt Disney Company began using in 1948 (para. 7). He further explains that “Disney was attempting to educate as well as entertain at a time when many other educational products such as filmstrips, movies, and other multimedia forms were primarily focused on education and information” (Ferguson, 2016, para. 7). Ferguson (2016) adds that for millennials, learning is most effective when it is entertaining, and “if the content and delivery of education is not entertaining enough, it may not be appreciated or valued” (para. 6). Others experts in education echo this sentiment and suggest the following:



Those involved in education or training at any level must be both cognizant of the characteristics of Millennials and competent in the educational practices shown to be effective with this generation. Instructors should take it upon themselves to research the Millennial generation and develop plans on how their current practices could be altered to better meet the needs of these individuals. (Werth & Werth, 2011, p. 17)

Clearly, not all classroom presentations can be edutainment-based. However, where appropriate, incorporation of these ideas can enhance learning and increase retention by making learning fun and memorable.

Conclusion

Millennials currently make up the significant majority of the U.S. Army and will continue to do so for the next 20 years. Understanding the keys to educating and motivating this generation is imperative for the growth and development of soldiers as well as the readiness of the Army itself in order to retain its best and brightest. Designing curriculum that leverages various digital technologies, even entertainment-based media, to connect with, advance the knowledge of, and build on soldiers' experiences to be more critical thinkers and leaders must be a top priority for the leaders in this organization. Holding tight to practices of the past limits the Army's ability to create a true learning environment and a mentality of lifelong learning in its members. Willingness to understand, appreciate, and value the millennial generation's ways of absorbing and applying new information is essential in maintaining competitiveness, adaptability, flexibility, and evolution for soldiers and the U.S. Army as a whole. ❧

References

- Beaver, G., & Hutchings, K. (2005). Training and developing an age diverse workforce in SMEs: The need for a strategic approach. *Journal of Education and Training*, 47(8/9), 592–604. Retrieved from <https://www.emeraldinsight.com/doi/pdfplus/10.1108/00400910510633134>
- Elmore, T. (2010). *Generation iY: Our last chance to save their future* (1st ed.). Atlanta, GA: Poet Gardener.
- Ferguson, K. (2016). That's edutainment: Connecting with the youngest generations of soldiers. *Association of the United States*, para. 7. Retrieved from <https://www.ausa.org/articles/%E2%80%99s-edutainment-connecting-youngest-generations-soldiers>
- Garcia, P., & Qin, J. (2007). Identifying the generation gap in higher education: Where do the differences really lie? *Journal of Online Education*, 3(4). Retrieved from <http://nsuworks.nova.edu/innovate>



- Goldman, K., & Schmalz, K. (2006). "Builders, Boomers, Busters, Bridgers: Vive la (generational) difference!" *HealthPromotion Practice*, 7(2), 159–161. Retrieved from <https://doi.org/10.1177/1524839906286595>
- Hinote, C. S., & Sundvall, T. J. (2015). Leading millennials: An approach that works. *Air & Space Power Journal*, 131–138. Retrieved from https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-29_Issue-1/C-Hinote_Sundvall.pdf
- Holyoke, L., & Larson, E. (2009). Engaging the adult learner generational mix. *Journal of Adult Education*, 38(1), 12–21. Retrieved from <https://files.eric.ed.gov/fulltext/EJ891074.pdf>
- Kasworm, C. E., Rose, A. D., & Ross-Gordon, J. M. (2010). *Handbook of adult and continuing education*. Los Angeles, CA: Sage.
- Katzell, R., & Thompson, D. (1990). Work motivation: Theory and practice. *American Psychologist*, 45(2), 144–153. Retrieved from <https://psycnet.apa.org/doiLanding?doi=10.1037%2F0003-066X.45.2.144>
- Kolb, A. Y., & Kolb, D. A. (2005a). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193–212. Retrieved from <https://www.jstor.org/stable/pdf/40214287.pdf>
- Kolb, A. Y., & Kolb, D. A. (2005b). "The Kolb Learning Style Inventory," Version 3.1 2005 Technical Specifications. Case Western Reserve University. Boston, MA, Hay Group, Hay Resources Direct.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Financial Times Press, Pearson.
- Lazaroiu, G. (2015). Work motivation and organizational behavior. *Contemporary Readings in Law and Social Justice*, 7(2), 66–75.
- Rainer, T. S., & Rainer, J. W. (2011). *The millennials: Connecting to America's largest generation* (1st ed.). Nashville, TN: B & H.
- Rickes, P. C. (2016). Generations in flux: How Gen Z will continue to transform higher education space. *Planning for Higher Education*, 44(4), 21–45. Retrieved from <https://search.proquest.com/docview/1838982286/4156F955D5044354PQ/1?accountid=46682>
- Roberts, D. H., Newman, L. R., & Schwartzstein, R. M. (2012). Twelve tips for facilitating millennials' learning. *Medical Teacher Journal*, 34(4), 274–278. Retrieved from doi.org/10.3109/0142159X.2011.613498
- Smith, K. A. (2008). *Gaining the edge: Connecting with the millennials* (Research report). Air War College, Air University, Montgomery, AL. Retrieved from <https://apps.dtic.mil/dtic/tr/fulltext/u2/a540122.pdf>
- Strauss, W., & Howe, N. (1991). *Generations: The history of America's future, 1584 to 2069* (1st ed.). New York, NY: William Morrow.
- Thompson, K. S. (2016). Organizational learning support preferences of millennials. *New Horizons in Adult Education & Human Resource Development*, 28(4), 15–27. Retrieved from <https://doi.org/10.1002/nha3.20158>
- U.S. Department of the Army. (2011). *The U.S. Army learning concept for 2015* (Training and Doctrine Command [TRADOC] Pamphlet [TP] 525-8-2). Fort Monroe, VA: TRADOC [obsolete]. This pamphlet has been superseded by U.S. Department of the Army. (2017). *The U.S. Army learning concept for training and education: 2020-2040* (TP 525-8-2). Fort Eustis, VA: TRADOC.
- Werth, E. P., & Werth, L. (2011). Effective training for millennial students. *Adult learning*, 22(3), 12–19. Retrieved from <https://doi.org/10.1177%2F104515951102200302>



Impacting Student Veteran Success Through Military Credit Articulation

A Regional Model for Progress

Katherine J. Giardello

Western Michigan University

Sara E. Appel

The Midwestern Higher Education Compact

Abstract

This article briefly describes the historic relationship between higher education and the military in the United States and reviews available literature on shortening academic pathways for veterans through articulated credit for military experience. The article also shares an overview of the promising work of the 13-state *Multi-State Collaborative on Military Credit* (MCMC) that has led efforts to address this issue since 2012 from the perspective of two of the initiative's leaders. An overview of issues uncovered in the collaborative's work, as well as discussion on implications of these issues and recommended strategies for practitioners are provided.

Introduction

There is a historically complicated relationship between the U.S. military and higher education system (Cate, Lyon, Schmeling, & Bogue, 2017). This relationship dates to colonial times when compulsory military service could be avoided for those enrolled in collegiate education, thus incentivizing enrollment in higher education to avoid conflict (Cohen & Kisker, 2010). Similar provisions continued in the decades that followed, leading up to the massive impact that World War II would have on higher education at large.

In 1944, the United States enacted the Servicemen's Readjustment Act, commonly known as the GI Bill, which provided benefits to World War II veterans for housing assistance, unemployment, and postmilitary education and training costs. This ground breaking legislation formalized a symbiotic relationship between military service and

college enrollment with the original GI Bill providing eight million World War II veterans with postwar education and training (Cate et al., 2017). The legislation is often called the antecedent to the college access movement since the funds opened college opportunities to a more general populace where previously only affluent citizens could afford college education. The GI Bill created a significant boom in postsecondary education enrollment nationwide and initiated a mutually beneficial recruitment pipeline between the military and higher education that persists today (Cohen & Kisker, 2010). The GI Bill has gone through several iterations over time, continuing to provide access to higher education for millions of veterans and their family members, all of whom are frequently referred to in the research literature as military-connected students (Cate et al., 2017). The most recent revision to the bill occurred in 2017, known as the “Forever GI Bill,” and further expanded access and flexibility for military-connected students (U.S. Department of Veterans Affairs, 2018).

Ten years after the GI Bill’s passage, in 1954, the United States Department of Defense (DOD) contracted with the *American Council on Education* (ACE) to create a process by which ACE reviews military training and recommends credit for prior learning on military transcripts (American Council on Education, 2019). Today, ACE credit recommendations are offered for more than 22,000 military courses and 3,300 military occupations. Several states have legislative policy requiring institutions of higher learning to accept ACE credit recommendations found on student veterans’ *Joint Services Transcripts* (JSTs), which document service members’ military training and education. Unfortunately, empirically based evidence showing that these credit recommendations are shortening time to degree or increasing the likelihood of degree completion for student veterans is absent from scholarly literature. Anecdotal evidence gleaned from *Multi-State Collaborative on Military Credit* (MCMC) partners suggests that institutions have been inauthentically complying with state policies requiring the awarding of ACE credit for military experience by awarding general

Katie Giardello is a doctoral student in educational leadership in higher education at Western Michigan University. From July 2015 to 2018, she served as the director of Veteran and Transfer Initiatives at the Michigan Community College Association’s Center for Student Success. Giardello holds a BS in human ecology and an MA in educational policy and leadership from The Ohio State University.

Sara Appel serves as the manager for the Multi-State Collaborative on Military Credit and the Midwest Student Exchange Program at the Midwestern Higher Education Compact. Prior, she was the academic programs manager at the Indiana Commission for Higher Education and an outreach specialist for the Military Family Research Institute’s Operation Diploma initiative at Purdue University. She has an undergraduate degree in secondary education and a master’s degree in history from Southeast Missouri State University.



credit that does not apply to degree requirements. Not only does this delay these students' progress to degree, but this practice can also negatively impact students' financial aid eligibility by impeding their compliance with federal Satisfactory Academic Progress requirements associated with their GI Bill use.

Empirical evidence is lacking in part because, despite the rich history between U.S. higher education and its military forces, accurate data about the academic outcomes of military-connected students have been largely inaccessible. This has made group aggregation for evaluative analysis of the GI Bill, and certainly the ACE military credit evaluation process, difficult (Cate et al., 2017; Molina & Morse, 2017). These data capture complications have been apparent for decades but, in the last decade, the post-9/11 GI Bill has resulted in increases in postsecondary enrollment of military-connected students at colleges and universities across the country. The U.S. Department of Education's National Center on Education Statistics estimates that between 2007/2008 and 2011/2012, there was a 20% increase in military-connected students enrolled in U.S. higher education (Radford, Bentz, Dekker, & Paslov, 2016). This surge in enrollment has raised both the visibility of this unique cohort of students and interest in understanding these students' academic outcomes from the perspective of policymakers and the higher education research community. Public interest in this population of college students comes both from patriotic motivation as well as the implications of tax dollars invested in both the GI Bill program and the government-supported ACE *credit for prior learning* (CPL) military evaluation process.

This article reviews the scholarly literature available on the academic outcomes of student veterans and the impact of awarding credit for prior learning on academic success, particularly focusing on the articulation of military learning for academic credit where such data is available. In addition to this research overview, the promising activities of the *Midwestern Higher Education Compact's* (MHEC) MCMC will be discussed. The overall purpose of the article is to raise visibility of the important issue of awarding academic credit for military training and offer a potential model for collaborative efforts to structurally improve the higher education landscape for military veterans by describing MCMC's organizational processes and lessons learned. Closing comments include a call to action for practitioners in higher education.

Literature Review

In one of the first efforts to hear directly from transitioning service members on their experience of moving from the military into higher education, Zoli, Maury, and Fay (2015) gleaned data from 8,500 separating or recently separated service members via survey. Significantly, their study adds a personal voice to the historic "pipeline" relationship between the military and higher education in the United States as described earlier. Their findings indicate that most service members attribute positive



experience and skill building to their military service and a large majority (92%) indicate that education should play a role in their postmilitary transition. On the topic of transferable skills from military to higher education, only 53% felt their institutions were appropriately recognizing these skills. A complicated finding is that 55% of respondents indicated they would pursue a civilian career different from their military occupation, potentially reducing the opportunity to articulate credit between like military training and educational programs (Zoli et al., 2015).

Cook, Kim, and King (2009) reviewed programs and services available to veterans at 723 institutions of higher learning. Their study analyzed feedback from focus groups in which student veterans described programs and services offered at their colleges and universities. Though nearly 75% of institutions studied awarded ACE credit for military learning, the student focus groups revealed that ACE CPL policies are inconsistent, and credits earned often do not apply to degree requirements (Cook et al., 2009).

DiRamio and Jarvis (2011) applied several prominent psychological and educational theories to student veteran development to help educators understand how to better support this unique population of students that often experience mental, physical, social, and academic distress as part of their military to academic transition. In their discussion of Tinto's Model of Student Departures (1984, as cited in DiRamio & Jarvis, 2011), the authors describe common issues veterans experience with applying CPL to their degree programs and position this as a structural barrier to academic success for student veterans. They describe veterans' concern with receiving CPL as a financial matter since receiving CPL should mean they are not paying for those courses and explain the structural issue with ACE CPL as a lack of training to effectively match ACE recommendations as direct equivalencies that clearly apply to degree requirements (DiRamio & Jarvis, 2011).

In 2017, a public-private partnership between the Student Veterans of America, the U.S. Department of Veterans Affairs (VA), and National Student Clearinghouse produced the most comprehensive data set assessing the academic performance of student veterans, called the National Veteran Education Success Tracker (Cate et al., 2017). This project used data sharing between the named entities to arrive at counts of degrees earned that can be attributed to the post-9/11 GI Bill, analysis on average time to degree for veterans, and descriptive data on the types of academic programs pursued by GI Bill users. Results of the analysis indicated that student veterans performed better (53.6% completion rate) than their nontraditional aged peers (39.2% completion rate), although still not as well as traditional students (completing at 59%). Analysis on time to degree was presented, although no relationship with CPL was discussed in this project.

More specific to CPL, evidence from a 48-institution study analyzing records of 62,475 adult students (over age 25), performed by the Council on Adult and Experiential Learning (CAEL), showed that more than 56% of students awarded CPL earned their degrees within seven years, compared to only 21% of non-CPL students (CAEL, 2010, p. 7). This research also found higher persistence rates for stu-



dents who earned CPL as compared to those who did not; time to degree analyses also showed positive outcomes (CAEL, 2010). Chappell (2012) similarly found that as the number of credits earned through CPL increased, the net time for students to complete their academic degree decreased for different types of CPL awarded.

The CAEL (2010) study included a small sample of military-connected students and found a higher likelihood of military-connected students receiving CPL credit (67%) than nonmilitary-connected students (40%) (p. 31). Their results also showed graduation rates for military-connected students receiving CPL credits were six points lower than those not receiving CPL, and there was no difference found for time to degree. In discussing these surprising results, the authors were quick to point out sampling issues that may have skewed results and offered discussion on the common process in higher education of awarding general credit that does not apply to degree requirements for CPL, which frequently occurs for military-connected students (CAEL, 2010).

Similarly, although Cook et al. (2009) reported that almost three fourths of institutions surveyed indicated they awarded credit for military experience, focus groups with student veterans revealed these students were confused by a perceived inconsistency in the way these awards were applied to their degree progression. Difficulty understanding credit articulation processes is a common problem for transfer students and may be exacerbated for student veterans who are typically also navigating lifestyle transitions related to their military separation (DiRamio & Jarvis, 2011).

MCMC: A Regional Approach to Progress

The preceding research outlines the impetus for higher education to attend to the work of articulating military training for academic credit wherever possible. This section presents MCMC leaders' review of the collaborative's work, including lessons learned for practitioners.

Following the post-9/11 GI Bill's enactment in 2008, there were small pockets of progress in higher education regarding awarding credit for military training, particularly in states where there was already a natural relationship between military partners and higher education entities. Less progress was realized in the Midwest until representatives from the State Higher Education Executive Officers organizations in Illinois, Indiana, and Ohio began informally discussing challenges with military credit articulations in 2012. In July 2012, these professionals met formally to begin discussing how institutions of higher education in their respective states were articulating credit for military experience. A year later, another formal meeting was held and included representatives from six midwestern states as well as organizational partners from the DOD.



In 2014, nearly 40 professionals from 10 states and several partner organizations met for another annual meeting. Later that year, the MHEC was awarded \$900,000 from the Lumina Foundation for a period of three years to enhance the collaboration between and among 13 states (the 12-member states of MHEC plus Kentucky that had been previously engaged with the collaborative for several years) (MHEC, n.d.). In addition to these funds, MCMC received \$200,000 for a more targeted project around healthcare pathways for veterans from USA Funds, now Strada Education Network (MHEC, n.d.). While external grant funds no longer support this project, MHEC has generously agreed to continue operating the network for continued information sharing and opportunities to convene and progress this work further.

Organizational structure. It is challenging enough to coordinate higher education activities in a single state, let alone between 13 separate states. Nonetheless, MCMC has functioned with a web of interconnections and critical organizational partners. Leadership is provided by a steering committee that includes a higher education leader from an organization responsible for coordinating postsecondary education in their state, although differences in higher education governing and coordinating norms in the states vary widely. Four working groups operated for the duration of the recent grant-funded period to meet specific objectives intended to identify barriers and explore promising practices around these issues: articulation of academic credit; communication and outreach; data, technology, and systems; and licensure and certification.

From working groups to knowledge communities. MCMC leaders have described the four working groups as the lifeblood of the collaborative. At the culmination of MCMC's recent grant period, the working groups were reorganized as knowledge communities to facilitate ongoing sharing of related information from each state. Cochairs for each knowledge community continue to serve alongside the state liaisons on the steering committee that leads the initiative. These individuals are subject-matter experts in their respective areas and share a commitment to pursuing further research and information sharing on topics of interest. Knowledge communities share information with MCMC stakeholders through listserve messages, the MHEC newsletter, conference sessions, teleconference discussions, public webinars on topics of interest, and updates given during MCMC's annual convening.

Through these networked communities of practice, new regional and national partnerships have been curated in order to share information between military partners and higher education leaders and improve opportunities for military-connected students in higher education. A description of each knowledge community and the major takeaways from their last few years of work follows.

Articulation of academic credit. This knowledge community is critical to the overall work of MCMC in that it explores policies and promising practices that can facilitate the translation of military training and experience into applicable college credit. One of the biggest takeaways of the knowledge community's previous work is acknowl-



edgment of the complexity that surrounds the articulation of military experiences with academic courses. There are numerous contributing factors to this complex environment, including language barriers between highly technical military and similarly complicated academic jargon, lack of availability of assessed learning outcomes from certain military experiences, mismatch of military and academic curriculum, awarding of too much general credit such that student veterans experience negative financial aid implications, and onerous processes for validating prior learning assessment generally. These complexities, coupled with a lack of dedicated staffing around this topic at both the state and institutional levels, have resulted in slow progress toward articulating military training with academic credit in MCMC states.

Implications for practitioners. The Articulation of Academic Credit knowledge community explored several promising strategies for accelerating time to degree for student veterans. The group emphasized implementing faculty-involved processes to proactively develop ACE credit recommendations commonly found on JSTs received at the campus. Other academic strategies reviewed included the creation of shortened competency gap refresher courses to bridge the service member into an accelerated pathway where needed as well as the development of degree bridge pathway maps for military occupational specialties that match well to academic programs. Some institutions also award credit or apply waivers toward general education or cocurricular requirements that service members have often met the spirit of in their military experiences. The knowledge community also found posting credit by exam equivalencies for College Level Examination Program and DANTES Subject Standardized Tests exams improves transparency for military-connected students who frequently utilize these forms of CPL. Three MCMC states have worked exceptionally hard to produce credit articulation models that work at scale.

Minnesota State Colleges and Universities have supported the Veterans Education Transfer System since 2009 (Minnesota State Colleges and Universities, n.d.). It is one of the first online statewide military credit articulation platforms and helps service members and veterans understand how their military training can count for meaningful academic credit. Since the inception of Veterans Education Transfer System, Minnesota State has awarded more than 197,000 credit hours for military courses and occupations saving student veterans more than \$37 million and eight million credit hours.

The Ohio Department of Higher Education has developed Military Transfer Assurance Guides (MTAGs), which provide assurance that specific types of military training, experience, and coursework are parallel to existing college and university courses and awarded appropriate credit at colleges and universities in Ohio (Ohio Department of Higher Education, 2019a). The MTAGs legislation was passed in June 2014. In 2018, with 23 out of 36 institutions reporting data, 21,406 undergraduate credit hours were awarded to veterans through Ohio's MTAGs.

The Kansas Board of Regents developed their articulation program as a cooperative effort between the Kansas Board of Regents and local U.S. Army officials (Kansas



Board of Regents, n.d.). Faculty and administrators convened to examine academic course outcomes as compared to the skills, outcomes, and competencies learned in various military occupational specialties. This is an ongoing initiative that will eventually include additional branches of the military and data on outcomes of the initiative.

In addition to focusing on building statewide articulation solutions through policy work, members of this knowledge community also focused on capacity-building, including developing public-facing tools and resources for institutional training (Consortium of Michigan Veterans Educators, 2019; Ohio Department of Higher Education, 2019b).

Communication and outreach. This knowledge community seeks to enhance the ways in which information can be communicated to service members about how their military training and experience can result in progress toward a postsecondary certificate, degree, or professional license/certification. An immediate area of emphasis noted by this knowledge community is the high need for improved support for college literacy in military-connected populations during what can be a stressful transition away from their service life. Although the service branches employ education service officers who provide services to active duty service members and typically offer direction during transition assistance programs for outgoing service members, anecdotal evidence suggests these processes are often rushed and may be ineffective at directing service members toward fulfilling civilian careers and corresponding educational endeavors.

Implications for practitioners. It is resoundingly clear that student veterans are accustomed to clearly articulated hierarchies and regimented procedures. To help veterans navigate the complicated higher education landscape, particularly the issue of credit transfer, transparent processes and direct resources are needed. When possible, institutions or states should support a public website including a database with transparent information about military credit equivalencies available to service members. In addition, a clear, single point of contact is recommended for service in all areas of a veteran's student life, including VA benefit processing, financial aid, and the opportunity for work-study jobs paid through the VA. Many campuses also offer dedicated space for veterans, sometimes called a veterans' lounge or center, where student services can be administered and students can engage with one another for peer mentoring and connective belonging on campus (Schlossberg, 1989).

Data, technology, and systems. This knowledge community has researched two critical issues that arose as MCMC's work progressed: (1) data systems that can accommodate military credit articulations similar to transfer equivalencies and (2) challenges around data capture and success tracking for military-connected students. On the first issue, documenting CPL in methods other than through college credit is not always easy to implement in software programs that house transfer articulation information based on the traditional credit hour, which is used fairly universally to transcript and articulate credit throughout higher education. Even more concerning is the second issue uncovered by this knowledge community: that of gross discrepancies in applied definitions of



what comprises a veteran and extreme variation in campus processes used to identify and track military-connected students in order to evaluate their success in higher education. Specific to the notion of awarding credit for military training is the inability of most institutions to collect military occupational specialty information to match with academic credentialing and civilian career choices.

Implications for practitioners. The previous section identified a need for clearly delineated processes around military credit articulation. State or institutional databases of articulated academic credit for military experience improve transparency for veterans pursuing academic degrees. Although these databases come with their own set of complications, even simple communication methods that map credit earned for military experiences can demystify the process.

Even more pressing, campuses must give attention to their military student data capture processes. Counting student veterans by VA benefit usage alone is not wholly accurate. It is becoming increasingly important to differentiate between types of military-connected students and helpful for the campus to be able to intervene if success is assessed as at risk for students in this population. Campuses in MCMC states are using categorical questions on the admissions application to classify military-connected students, often cross matching these with data that they are required to submit to the VA and the federal government's integrated postsecondary educational data system. As the literature review revealed, aggregated data on student veterans has been difficult to derive because of inconsistencies in definitions applied to the term veteran and variable processes used to identify various types of military-connected students. Once these inconsistencies in data capture methodologies are addressed, campuses should routinely track success measures for their military-connected students, including year to year and overall retention, time to degree, graduation rates, and enrollment patterns that lead to academic success such as remedial courses taken, part or full time, stop out enrollment, success in gatekeeper courses, and the like.

Licensure and certification. The licensure and certification knowledge community has focused more explicitly on linking military training, education, and other experiences to civilian licenses and certifications in order to accelerate the veterans' track to similar employment upon their military separation. The work was most productive when it focused on workforce structures, such as state and occupational licensing and regulatory boards. Progressive partnerships have been a hallmark of MCMC's work; and in this area, Solutions for Information Design, a consulting group, has worked alongside the DOD to develop the service branches Credentialing Opportunities On-Line digital tools, which proved invaluable to understanding the linkages between civilian and military occupations. Along these lines, opportunities to work with regulatory agencies to accelerate qualifying veterans' pathways to employment by obtaining comparable civilian credentials more quickly have been productive. A deliverable of this knowledge community is the MCMC Bridge Program Inventory (Multi-State Col-



laborative on Military Credit, 2018), which details the program areas where accelerated military specific pathways exist in MCMC states.

Implications for practitioners. Several states have become involved in other external efforts to award academic credit for industry-based credentials, such as the national Credential Engine project and other state-specific efforts at creating “laddered” academic credentials that could include credentials earned in the military (Credential Engine, 2018). Along these lines, MCMC’s partnership with the Defense Health Agency’s Medical Education and Training Campus (METC) has institutions in MCMC states applying as new degree completion partners through METC’s established articulation process (Medical Education and Training Campus, n.d.). This area of work toward the articulation of credentials extends beyond veterans to other adult learners with on-the-job, apprenticeship, or career-technical training and warrants further exploration on higher education campuses. Finally, involving state and national professional licensing boards can be helpful for educational programs linked to the occupations. For instance, the National Council on State Boards of Nursing coordinated a review of several military medical occupations for alignment with national standards for licensed practical nursing, which progressive academic programs have used to develop competency-gap courses that fill in competencies not fully covered in military training to accelerate degree completion for veterans in these occupational areas. These overlapping efforts have allowed for integration and expansion of the MCMC impact.

MCMC Milestones

What began as a “hallway” conversation between educational leaders from three states has grown into an expansive and evolving network of multisector professionals collaborating for the successful postmilitary transition of our nation’s veterans. Milestones from MCMC’s recent grant work include the following:

- ◆ *Visibility of the topic.* Although many campuses claim to be “veteran-friendly,” progress toward articulating academic credit for military experiences has been slow across the board. The “start-up” funds available to MCMC states helped to put this topic on the map for single institutions and state systems.
- ◆ *Enhanced understanding.* The growing network has worked collaboratively to uncover and better understand complicated issues around DOD data security clearance, higher education articulation procedures, implications of credit awards for VA certifying, and significant issues with data capture and success tracking for military-connected students.
- ◆ *New partnerships.* MCMC’s most prolific success is the formation of relationships between leaders in each state for information sharing and the organization’s opportunity to interact with other national organizations vested in the



academic success of student veterans. Such organizations include the American Association of Admissions Officers and Registrars, the ACE, the American Legion, Army University, the Association for Institutional Researchers, CAEL, DOD, VA, Student Veterans of America, and a host of other veteran advocacy organizations within the MHEC states and in other regions of the country.

- ◆ *Data access.* The project allowed MCMC states to access DOD data to project the volume of service members separating with their state as address of origin. The data was matched with civilian employment codes to project the career and academic areas these separating service members' may enter following their military transition. MCMC has also been able to work directly with the ACE for reports on JSTs requests sent to their states. In addition, states and institutions alike are working toward more consistent procedures for data capture and tracking of military-connected students, improving opportunities to evaluate the success of these students.
- ◆ *Aggregated data.* As campuses in MCMC states become better able to aggregate accurate data about military-connected populations, it is hoped that better data about what is working for military-connected students will become available for evaluative purposes. In the meantime, a benefit of the MCMC network has been its efforts to gather and publish data on accelerated pathways for veterans in MCMC states in its Bridge Program Inventory.
- ◆ *Outreach publications.* Working with CAEL, MHEC published *Valuing Military Learning: A Guide to Military Prior Learning Assessment and More*, which lays out information that is useful for service members and educators about pursuing postsecondary education and receiving credit for military experience (CAEL, 2016). Other documents from MCMC meetings, webinars, and state information-sharing reports are available for public review on the project website.
- ◆ *Annual convening.* MCMC's annual convening is its signature event and will continue to bring vested higher education stakeholders together to emphasize organizational partnerships, data and information sharing, and productive dialogue toward overcoming obstacles that stand in the way of academic success for military-connected students.

Conclusion

This article intended to review literature on the impact of articulating military experience for academic credit to improve educational success of student veterans and demonstrate the importance of this topic for higher education leaders. As the literature review section revealed, there is some evidence that awarding credit for military learning can have a positive impact on student veteran success, although not many scholars have studied this specific issue. Scholar practitioners are encouraged to re-



view the literature, consider their own campus practices around articulation of military learning, and apply the implications for practitioners from MCMC's knowledge communities to their own context to improve the ability for student veterans across the country to complete educational credentials following their military separation.

One of the most productive aspects of the work of this collaborative has been the ability to inspire and energize state agencies and institutions and to find the champions who will go above and beyond to do what is needed for service members in their postsecondary pursuits. Although much work has been done by MCMC members in the area of improving the articulation of military education to meaningful college credit and other areas, there are still substantial gains to be made. MCMC looks to the future as a continued credible resource for advocates committed to seeing progress in this area throughout the MCMC states and the country. ❧

References

- American Council on Education. (2019). Guide to the evaluation of educational experiences in the armed services. Retrieved from <https://www.acenet.edu/news-room/Pages/Military-Guide-Online.aspx>
- Cate, C. A., Lyon, J. S., Schmeling, J., & Bogue, B. Y. (2017). *National veteran education success tracker: A report on the academic success of student veterans using the post-9/11 GI Bill* (NVEST Report). Washington, DC: Student Veterans of America. Retrieved from https://invest.studentveterans.org/wp-content/uploads/2017/03/NVEST-Report_FINAL.pdf
- Chappell, J. M. (2012). *A study of prior learning assessment in degree completion* (Paper 410). Marshall University, Huntington, WV. Retrieved from <http://mds.marshall.edu/cgi/viewcontent.cgi?article=1410&context=etd>
- Cohen, A. M., & Kisker, C. B. (2010). *The shaping of American higher education: Emergence and growth of the contemporary system* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Consortium of Michigan Veterans Educators. (2019). Academic credit for military experience. Retrieved from <https://micmve.org/academic-credit/>
- Cook, B. J., & Kim, Y. (2009). *From soldier to student: Easing the transition of service members on campus*. Washington, DC: American Council on Education.
- Council on Adult and Experiential Learning (CAEL). (2010). *Fueling the race to postsecondary success: A 48-institution study of prior learning assessment and adult student outcomes*. Chicago, IL: CAEL. Retrieved from http://www.cael.org/pdf/PLA_Fueling-the-Race.pdf
- Council on Adult and Experiential Learning. (2016). *Valuing military learning: A guide to military prior learning assessment and more* [online version]. Minneapolis, MN: Midwestern Higher Education Compact. Retrieved from https://www.mhec.org/sites/default/files/resources/20160803MCMC_Guide_to_Military_PLA.pdf
- Credential Engine. (2018). Retrieved from <https://credentialengine.org/>
- DiRamio, D., & Jarvis, K. (2011). Special Issue: Veterans in higher education--When Johnny and Jane come marching to campus. *ASHE Higher Education Report*, 37(3), 1–144.



- Kansas Board of Regents. (n.d.). Credit for Military Alignment. Retrieved from <https://www.kansasregents.org/students/military/credit-for-military-alignment>
- Medical Education and Training Campus. (n.d.). Degree bridging programs. Retrieved from <https://www.metc.mil/degreebridge/>
- Midwestern Higher Education Compact (MHEC). (n.d.). *Multi-State Collaborative on Military Credit*. Minneapolis, MN: Midwestern Higher Education Compact. Retrieved from <https://www.mhec.org/convening/multi-state-collaborative-military-credit>
- Minnesota State Colleges and Universities. (n.d.). Veterans education transfer system. Retrieved from <http://www.minnstate.edu/college-search/public/military>
- Molina, D., & Morse, A. (2017). Differences between military-connected undergraduates: Implications for institutional research. *New Directions for Institutional Research*, 2016(171), 59–73. doi:10.1002/ir.20191
- Multi-State Collaborative on Military Credit. (2018). *MCMC Bridge Program Inventory*. Minneapolis, MN: Midwestern Higher Education Compact. Retrieved from https://www.mhec.org/sites/default/files/resources/20180724Bridge_Program_Inventory_0.pdf
- Ohio Department of Higher Education. (2019a). Military transfer assurance guides. In college credit for military experience. Retrieved from <https://www.ohiohighered.org/transfer/military>
- Ohio Department of Higher Education. (2019b). Train the trainer toolkit. In Ohio values veterans. Retrieved from https://www.ohiohighered.org/ohio_values_veterans/toolkit/training
- Radford, A. W., Bentz, A., Dekker, R., & Paslov, J. (2016). *After the post-9/11 GI Bill: A profile of military service members and veterans enrolled in undergraduate and graduate education*. (NCES 2016-435). Washington, DC: U.S. Department of Education, National Center for Educational Statistics. Retrieved from <https://nces.ed.gov/pubs2016/2016435.pdf>
- Schlossberg, N. K. (1989). *Overwhelmed: Coping with life's ups and downs*. Lexington, MA: Lexington Books.
- U.S. Department of Veterans Affairs. (2018). Forever GI Bill—Harry W. Colmer Veterans Education Assistance Act. In Education and training. Retrieved from <https://www.benefits.va.gov/GIBILL/FGIBSummaries.asp>
- Zoli, C., Maury, R., & Fay, D. (2015). *Missing perspectives: Servicemembers' transition from service to civilian life*. Syracuse, NY: Institute for Veterans & Military Families, Syracuse University. Retrieved from <https://surface.syr.edu/ivmf/7/>



The Learning Enterprise Assistance Program

Customer Service at the Point of Need

Keith R. Beurskens, Maycie Crozier, and Jayson B. Dodge
Army University

Abstract

Army University (ArmyU) was established 7 July 2015. One of the organization's roles is to identify and promulgate innovative best practices throughout the Army's learning enterprise. The Directorate of Academic Affairs established the Learning Enterprise Assistance Program (LEAP) as a lessons learned initiative and a true customer-driven process to support the U.S. Army Training and Doctrine Command centers of excellence and branch schools. LEAP presents workshops selected by the customer in several education-related areas during staff assistance visits. An overview of the program's background, a description of the planning process, and the results of the first year's execution are presented. LEAP has proven to be a resource-intensive initiative that must demonstrate its value to the learning enterprise to be viable in the future. Proposed methods for evaluating the program's effectiveness, customer satisfaction, and blended learning approaches are examined as potential methods for increasing the effective delivery of workshops requiring fewer resources.

Introduction

Army University (ArmyU), established 7 July 2015, is both a symbolic and a substantive enterprise-level change in Army learning. Creating ArmyU demonstrated the Army's commitment to improving the education system and fostering innovation (Brown, 2015, p. 24). The ArmyU Directorate of Academic Affairs (formerly the vice provost of academic affairs) has primary responsibility for identifying and promulgating innovative best practices throughout the Army's learning enterprise.

ArmyU established the Learning Enterprise Assistance Program (LEAP) as a service to the U.S. Army Training and Doctrine Command (TRADOC) centers of excellence and branch schools. Program participation is voluntary, at no cost to the centers of excellence or schools. The LEAP staff assistance visits are tailored based upon organizational self-assessments to cover areas they identify for improvement: a real customer-driven process. LEAP services include a growing menu of workshops. Workshops range from two to eight hours in areas identified for improvement based upon enterprise-wide lessons learned. LEAP was officially launched during the fourth quarter of fiscal year (FY) 2018 with five staff assistance visits performed. FY 2019 has at least 11 additional staff assistance visits programmed. Expected program growth may require multiple forms of workshop delivery to support all of the customers.

Background

The Center for Teaching and Learning Excellence was established within the Directorate of Academic Affairs in part to assess current practices and adopt or integrate new learning practices supporting faculty development (Faculty and Staff Development Division), curriculum development (Instructional Design Division), and advances in the learning sciences (Institutional Research and Assessment Division). Leonard Lira and Keith Beurskens's article in the October 2017 *Journal of Military Learning* titled "An Engine for Army Learning: Army University's Center for Teaching and Learning Excellence" provides a detailed review of the Center for Teaching and Learning Excellence and its subordinate division's functions (Lira & Beurskens, 2017). The Directorate of Academic Affairs also includes the accreditation and programs section responsible for the Continuing Education Degree Program, the Credentialing Program, and the American Council on Education, which reviews TRADOC courses for recommended college credit.

The LEAP conceptual beginnings were in response to the challenge of promulgating lessons learned from an evaluation of the American Council on Education credit review program effectiveness. The Accreditation and Programs Section determined there were two critical areas needing improvement: (1) lesson alignment of learning outcomes to assessments and (2) the American Council on Education's presentation of instruction programs. The early successes supporting schools undergoing American Council on Education reviews lead to expansion of the LEAP.

The first LEAP working group met in mid-February 2018. It consisted of members of the Accreditation and Programs Section, the Instructional Design Division, the Faculty and Staff Development Division, the Institutional Research and Assessment Division, and the Policy and Governance Division from the Directorate of Learning Systems. The purpose of the first working group was to establish quar-

Table
Learning Enterprise Assistance Program (LEAP) Workshops

Workshop	Workshop length	Information
Assessment and rubric development	8 hours	The workshop includes how to develop assessment questions (multiple choice, true/false, fill-in-the-blank, and essay) at appropriate learning levels to align with the curriculum being taught. The workshop also includes rubric development and calibration techniques. <u>Target audience is approximately 15-20 training developers/instructors.</u>
Preparation for an American Council on Education (ACE) visit	2 hours	The workshop assists schools and centers to prepare for an ACE review. The information presented includes a how-to in-brief, curriculum learning level alignment, assessment alignment, and who needs to be at an ACE review. <u>Target audience is approximately 10 people involved in the ACE process.</u>
Data collection and implementation of feedback	2 hours	The workshop provides assistance with creation of evaluations—course, instructor, curriculum, etc.—as well as the planning, implementation, and analysis of evaluations. We provide guidance, tools, and techniques to help schools establish an internal feedback system to adapt to changing demands of students. <u>Target audience is approximately 15-20 people interested in gaining feedback on their products and services.</u>
General learning outcomes (GLO) alignment	2 hours	Workshop provides techniques to align course outcomes with GLO and methods to review alignment during the accountable instruction process (Accountable Instruction System (AIS))(Post Instructional Conference/Course Design Review [PIC/CDR]). <u>Target audience is approximately 10 course managers and curriculum developer supervisors.</u>
The Developers Workshop AM session: Terminal Learning Objective- Enabling Learning Objective (TLO-ELO) Alignment PM session: Assessment Development	6 hours	This is a one-day workshop designed to refresh curriculum developers on the analysis, design, development, implementation, and evaluation (ADDIE) process and to correctly identify TLOs. The workshop focuses on a TLO-ELO construct by emphasizing the “design” phase with focus on the learning objective and constructing a proper assessment for the lesson. <u>Target audience is approximately 10 course managers and curriculum developer supervisors.</u>

Table by Jayson B. Dodge

terly goals to achieve the end state of the program—a plan to reach full operational capability starting in FY 2019.

Some of the significant objectives included establishing a “menu” of workshops, developing internal LEAP standard operating procedures, creating products to inform the enterprise of the program, designing various surveys, and coordinating future LEAP visits. After the initial working group, the LEAP team met regularly at bimonthly intervals.

A key product of the working group was the initial menu of workshops to fill gaps identified from the ArmyU initial gap analysis, as shown in the table, “LEAP Workshops.” As the program grows and we work with the centers of excellence and schools, we realize LEAP must be agile and adaptive to address the needs of our

customers. LEAP plans to expand to include other ArmyU directorates and develop additional workshops to offer customers.

Program Description

The LEAP program is designed to take a service culture approach and is entirely customer oriented. The program is completely nonattributional. There is no effort to do fact finding or reporting to ArmyU headquarters. Trends or results are shared only with the center of excellence or school leadership. The program is wholly based on the needs of the center of excellence or school, with no mandatory workshops included as part of the LEAP visit.

Dr. Keith R. Beurskens is the deputy, Directorate of Academic Affairs and Center for Teaching and Learning Excellence, Army University. Beurskens was the lead author for the “Army University White Paper” and the “Strategic Business Plan for the Army University,” which led to the Army’s approval in establishing Army University in 2015. He has authored a number of articles; his latest publication was as editor of *The Long Haul Historical Case Studies of Sustainment Operations in Large-Scale Combat Operations* in 2018. Beurskens completed a 24-year military career that included assignments in combat engineer units, the Corps of Engineers, professor of military science at the University of Illinois, and major Army command-level staffs. Beurskens holds a doctorate of management in organizational leadership.

Maycie Crozier is an instructional systems specialist, Accreditation and Programs Division, Directorate of Academic Affairs and Center for Teaching and Learning Excellence, Army University. Crozier spent 10 years in public education before transitioning to civil service. Crozier was an instructor with Staff and Faculty Development Division, Fort Sill, Oklahoma, and Faculty Development at the Army SHARP (Sexual Harassment/Assault Response and Prevention) Academy, Fort Leavenworth, Kansas, before coming to Army University. Crozier holds a BS in special education and a Master of Education Administration, both from Southwestern Oklahoma State University.

Jayson B. Dodge is the Learning Enterprise Assistance Program (LEAP) manager, Directorate of Academic Affairs and Center for Teaching and Learning Excellence, Army University. Dodge completed a 20-year military career that included assignments in brigade combat teams, active and reserve components, and the United States Forces Korea joint staff (CJ33). Dodge’s last assignment while on active duty was the Learning Products Branch chief, Policy and Governance Division, Directorate of Learning Systems. Dodge also was a member of the team that established Army University in 2015. Dodge holds a BA from the University of Wisconsin-Stevens Point and a Master of Adult and Occupational Education from Kansas State University.

LEAP has three phases: pre-LEAP planning, LEAP staff assistance visit, and post-LEAP evaluation.

Pre-LEAP planning phase. The center of excellence or school initiates the pre-LEAP planning phase through contact with the ArmyU LEAP program manager. There are three key activities in this phase.

First, the LEAP visit is scheduled to accommodate the center of excellence or school. The LEAP coordinator supports the customer's scheduling request while optimizing service to other LEAP customers and executing ArmyU's other missions. The program manager also strives to have a minimum of two weeks between LEAP staff assistance visits. This time is critical to consider immediate feedback that could lead to workshop improvements, solicit the formal postvisit survey responses, and prepare for the next LEAP visit.

The second key event is a customer self-assessment and gap analysis, which aids the customer in selecting the appropriate workshops. The center of excellence or school may choose to conduct an informal self-assessment, or it may take advantage of a pre-LEAP survey developed to assist the customer in determining areas they may want to focus on during the LEAP visit. The survey assists participants with assessment of interest in various topics rooted in the current LEAP workshops. Research psychologists from the Institutional Research and Assessment Division analyze survey data and return the results, which are confidential, to the customer.

The third activity includes coordinating in progress reviews one month and again two weeks prior to the visit, finalizing desired workshops, and confirming student loads. The purpose of the in progress review is to verify link up time and location, workshop schedule, the number of participants per workshop, and reservations for required facilities.

LEAP staff assistance visit. The second LEAP phase begins the day before execution when the LEAP visit team links up with the center of excellence or school point of contact. Meeting the day prior allows the team to meet the customer point of contact, discuss any last minute changes to the schedule, reconnoiter classrooms, and download their workshop materials onto the computers used for their workshops. The LEAP team has a clear understanding that conditions may change on the ground, and they must remain responsive to the customer by being agile and adaptive to schedule changes. A second "smile-sheet" LEAP survey follows each workshop to measure participants' immediate reaction to the content and facilitator performance. This feedback is a critical tool for two reasons. First, it allows ArmyU to measure customer feedback on the facilitator's performance. Second, it enables ArmyU to determine whether the needs of the participants are met. Each day ends with a rapid after action review by the LEAP team. This phase ends with a formal after action review cofacilitated by ArmyU and center of excellence or school facilitators.

Post-LEAP evaluation. The final, post-LEAP phase commences upon the team's return to Fort Leavenworth, Kansas, and consists of three main actions. The first action is to produce a combined trip report. The report provides an overall description of the

staff assistance visit including LEAP team members, dates, and location of the visit and a short overall assessment of the climate of the visit. The report also lists the workshops provided, facilitators of the workshops, number of participants per workshop and, if necessary, the number of iterations of workshop. The last portion of the report includes observations and recommendations captured by the LEAP team during the daily after action reviews. The completed report is distributed to LEAP members and to the customer. Next is an internal ArmyU after action review to focus on improvements to the planning and execution of future LEAP visits. The final action is a follow-up phone interview with the center of excellence or school point of contact approximately eight weeks after the LEAP visit. The purpose is to solicit the customer's assessment of the effectiveness of the workshops and to allow for scheduling LEAP follow-up visits if desired. This information is also valuable for assessing the overall satisfaction of our customer and to facilitate modification of the program if warranted.

Initial Program Results

The first official LEAP visit was in November 2017. The initial visit consisted of one day of training with an overview of the general learning outcomes from Army Field Manual 3-0, *Operations*, and creation of multiple-choice assessments at all levels of Bloom's Taxonomy, a hierarchical framework of higher learning and education used to organize levels of expertise necessary to reach an objective. Lessons learned were captured for program improvement. The program needed to expand the workshops offered to meet the needs identified by the customers from their gap analysis. The assessment workshop required a redesign to add rubric creation and create a full-day workshop dedicated solely to assessment design and development. The restructured full-day assessment workshop premiered in May 2018. A second workshop in May 2018 included a two-day revised assessment creation workshop and a new workshop on how to prepare for an American Council on Education review. Feedback from participants was very positive; it included comments on their new understanding of the criticality of assessments to success during an American Council on Education review and how the information would be applied. In August 2018, based upon customer requests, the number of workshops expanded to include Alignment of Terminal Learning Objectives and Enabling Learning Objectives, and Data Collection and Implementation of Feedback. The new workshops were well received, although the customers felt too many workshops occurred simultaneously for attendees to participate in all of them.

Initially, the program was advertised to specific centers of excellence and schools by ArmyU through word of mouth. Formal promotion of the program began through a partnership with the Policy and Guidance Division within ArmyU's Directorate of Learning Systems, which conducts mandatory workload management site assistance

visits each year to the centers of excellence and schools. The Directorate of Academic Affairs offered LEAP services as an add-on to the Policy and Guidance Division's visit. Several schools and centers opted for the addition of a LEAP to the workload management visit (U.S. Department of the Army [DA], 2018a). The second program advertisement was the publication of a TRADOC task order. The purpose of the task order was to inform the learning enterprise of LEAP and various workshops available and to solicit requests for a LEAP visit in FY 2019. The response rate to the task order was low, yielding only a few requests for assistance (DA, 2018b).

Word of mouth advertisement by ArmyU and recent LEAP customers generates much greater program interest. ArmyU also promotes the program in Army Learning Coordination Council subcommittee meetings—in particular, the Policy and Governance Oversight Committee—that serves as a discussion and decision forum with participants from across the Army learning enterprise.

The promotion of the initial LEAP, especially through word of mouth, contributed to increases in the number and availability of workshop offerings. Centers of excellence and schools have requested at least 11 additional visits for FY 2019. Two of the FY 2019 LEAP visits are scheduled to support non-TRADOC schools. Planning is underway to include “how-to guides,” available online to support the workshops and expanding the workshop offerings in coordination with the Directorate of Distance Learning and the Army University Press.

Program Evaluation

LEAP must be a cost- and performance-effective program with benefits worth the investment. The program requires a significant investment of employee work hours and transportation costs for the LEAP team, as well as employee work hours of the students in the workshops. A customer-service approach is the most promising method to determine its value. Providing customer service within the military from a higher headquarters to a subordinate organization is a rare approach. The prevalent relationship is one of “mission command,” which is the balancing of “the *art of command* as the creative and skillful exercise of authority through timely decision-making and leadership” (DA, 2012, p. 5) and “the *science of control* consists of systems and procedures used to improve the commander's understanding and support accomplishing missions” (DA, 2012, p. 8). A keyword search for “customer service” and “military” across several peer-reviewed sources in popular search databases (e.g., ABI/INFORM, Academic Search Complete, and ProQuest) did not yield any that included this unique relationship.

Managing the quality of the customer service relationship does not happen by accident! Service quality is managed similar to how other organizational processes are managed: planning, delivering, evaluating, and improving the service experience. Ser-

vice quality was defined by Parasuraman, Zeithaml, and Berry (1988) as the ability to meet or exceed customer expectations. Customers pursue services that solve their problems and expect the service to be *right* the first time. Service quality is also more than providing a functional service. Mechanic and humanic clues appeal to the customer's affective domain; they are emotional judgments of how the service encounters *feel* to the customer (Berry, Wall, & Carbone, 2006, p. 48).

The humanic dimension “offers the chance to cultivate emotional connectivity that can extend respect and esteem to customers and, in so doing, exceed their expectations, strengthen their trust, and deepen their loyalty” (Berry, Wall, & Carbone, 2006, p. 49). Humanic elements allow the organization to exceed expectations through a direct focus on “the customer” by evoking pleasant surprise. Emotional connection increases through personal and continuing customer-service provider relationships. Jan Carlzon's (1987) *Moments of Truth: New Strategies for Today's Customer Driven Economy* introduced the concept of “moments of truth” in dealing with customers capturing the essence of the humanic dimension. Moments of truth are experienced by the customer every time a member of the service provider's organization interacts with them—email, telephone, video-teleconference, face-to-face, rumor, etc. *Every* customer interaction is both an opportunity and a threat to service quality.

Measures of customer service within LEAP are in two areas: (1) the learning of the individual student (i.e., accurately and satisfactorily) and (2) the effectiveness of meeting the hosting center of excellence or school goals (i.e., dependability and value). Service satisfaction reflects the customer's post-experience summary evaluation of the service. Satisfaction may be subcategorized as relative (i.e., what is delivered) or overall (i.e., how it is delivered) satisfaction. Customer value is the assessment of the usefulness of the service relative to the cost (Sivadas & Jindal, 2017). Initially, LEAP used a “relative service” 10-item post-workshop survey and overall service comment cards. ArmyU is exploring empirically validated methods for future measurement of services.

ArmyU reviewed several customer service quality and performance tools applied in the past within the higher education context. The use of customer service practices within higher education organizations increases as students become viewed as customers, organizations face increased competition with other institutions, public funding decreases, and educational costs to students and their families rise (Celuch & Robinson, 2016; Chalcraft, Hilton, & Hughes, 2015; Teeroovengadam, Kamalanabhan, & Seebaluck, 2016). Service quality and performance tools may drive modifying the current LEAP survey and help demonstrate the value of the program. The most promising tools considered are the Higher Education Performance (HEdPERF) for individual learner satisfaction and word-of-mouth referral for organizational satisfaction.

Service Quality (SERVQUAL) and Service Performance (SERVPERF) general service measurement tools require modification for specific applications. SERVQUAL has been in use since the 1980s as a simple method of measuring the difference be-

tween a customer's perceptions and expectations of the service received. SERVQUAL measures service and expectations based upon 22 items from each perspective across five dimensions: reliability, responsiveness, assurance, tangibles, and empathy. Performance is subtracted from expectations to derive quality gaps, grouped into seven areas (Adil, Mohammad Al Ghaswyneh, & Musallam Albkour, 2013). Criticism of the tool includes the potential for misinterpretation of the "difference scores" used to calculate the quality gaps, as well as theoretical and operational criticism of its dimensional structure (Galeeva, 2016, p. 329).

SERVPERF uses the SERVQUAL 22 items across the same five dimensions for measuring the performance of services delivered and compares the ratings to ideal features—it does not include expectations (Adil, Mohammad Al Ghaswyneh, & Musallam Albkour, 2013; Galeeva, 2016; Mahmoud & Khalifa, 2015). SERVPERF has been found to be a better measure of service in general than SERVQUAL (Adil, Mohammad Al Ghaswyneh, & Musallam Albkour, 2013, p. 70).

Higher education also uses modified versions of SERVQUAL and SERVPERF. There is some evidence SERVPERF and HEdPERF outperform SERVQUAL within higher education (Adil, Mohammad Al Ghaswyneh, & Musallam Albkour, 2013; Galeeva, 2016). Additionally, Ganić, Babić-Hodović, and Arslanagić-Kalajdžić (2018) researched the dimensions of satisfaction and loyalty to the SERVPERF and found a direct, positive, and significant relationship satisfaction, whereas loyalty had no significant relationships.

The HEdPERF service measurement instrument was developed specifically for higher education. The tool consists of 41 items and six dimensions: nonacademic aspects, academic aspects, reputation, access, program issues, and understanding. It also has high reliability and criterion-related validity; discriminate validity is not demonstrated (Abdullah, 2005; Abdullah, 2006a).

Modified five-dimension HEdPERF (e.g., understanding dimension dropped) comparisons to SERVPERF and a HEdPERF-SERVPERF integrated tool demonstrated HEdPERF as superior to the other two instruments for unidimensionality, reliability, validity, and explained variance (Abdullah, 2006b). Several researches validated or partially validated the early work with HEdPERF, determining it outperforms SERVQUAL and SERVPERF in the higher education context, and the access dimension (Abdullah, 2006a; Abdullah, 2006b; Silva, Moraes, Makiya, & Cesar, 2017).

Word of Mouth (WOM) is another proposed measure for overall satisfaction (Sivadas & Jindal, 2017). WOM is considered a substitute for attitudinal loyalty resulting from tremendously satisfied customers. Loyalty in this context represents the customer's intent to once again use this service over other options (Tripathi, 2018). In the age of public social media, there has been an exponential growth in the use of WOM (Pruden & Vavra, 2015). Antecedents to customers making WOM recommendations include a positive or negative message of content, motivation, and opportunity to share the attitude. WOM is considered an

extremely high level of satisfaction because it means customers are making unsolicited recommendations for a service or product (Pruden & Vavra, 2015). WOM recommendations also exhibit a halo effect that moderates the negative attitudes that arise from one bad experience (Shi, Tang, Zhang, Gao, & Zhu, 2016). The goal for LEAP is to expand across all centers and schools based upon the perceived value of the program, as measured by WOM.

Program Future

LEAP is gaining in popularity and demand, which is in turn leading to an expansion of the program's workshop offerings. Schools are already requesting multiple same-year visits and spreading out visits to ensure a larger portion of their workforce can benefit from each workshop. Our customers have also shown interest in a workshop reach-back refresher capability. LEAP is expected to outgrow the ArmyU capability and funding required to provide all services in only on-site, face-to-face settings by FY 2020. In a time of budget constraints, a blended learning solution solves both these challenges.

Blended learning is a design approach that may leverage a mix of technologies, pedagogical approaches, and instructional technology with face-to-face instruction (Bliuc, Goodyear, Ellis, 2007). As Yu Zhonggen and Zhejiang Yuexiu (2015) noted in "Blended Learning over Two Decades," blended learning can take many different forms: "The technology aided activities attempted to improve learning effectiveness through integration of active learning approaches and/or extensive use of working experience" (p. 6). The literature is mixed in findings of the blended learning advantages and disadvantages compared to face-to-face and completely online courses (Bliuc, Goodyear, Ellis, 2007, p. 233; Chen & Jones, 2007; Means, Toyama, Murphy, & Baki, 2013). Advantages of blended learning may include effective and flexible delivery, convenient learner access, and increased efficiency compared to traditional resident instruction (De George-Walker & Keeffe, 2010). A primary concern of transitioning to blended learning course design is the potential of not fully achieving desired learning outcomes, lower learner satisfaction, and lower development of classroom community (Bliuc, Goodyear, Ellis, 2007; Lim, Morris, & Kupritz, 2007).

A blended learning format can provide a more adaptive learning and instructional approach, allowing for more interaction between workshop participants and the instructor than an online-only format (Hockly, 2018). Delivering LEAP content online can be used by the student before, during, and after the workshop. Students would have access to the workshop content for future reach-back and research-based self-instruction. The goal for the future is developing blended learning strategies derived from the 2019 LEAP visits to implement in the 2020 LEAP and beyond.

Conclusion

Driving innovation across the learning enterprise is a critical function for ArmyU. ArmyU established the Learning Enterprise Assistance Program as a service to the TRADOC centers of excellence and schools. LEAP is a unique initiative for fostering innovation because of its customer service approach to learning within a military context. The initial response to the voluntary LEAP by the TRADOC centers of excellence and schools has been very positive: at least 11 LEAP visits will be performed in FY 2019, primarily because of positive word-of-mouth recommendations. Two of the FY 2019 LEAP visits are scheduled to support non-TRADOC schools.

ArmyU will improve LEAP in the future by expanding workshop offerings in response to customer requests. The LEAP customer-service approach is rare within the military. The goal is to measure customer service within LEAP using an empirically validated customer service tool and word of mouth. It is critical that LEAP is effective in two areas: (1) the learning of the individual student (i.e., accurately and satisfactorily) and (2) the effectiveness of meeting the hosting center of excellence or school goals (i.e., dependability and value).

The future viability of LEAP also relies upon ArmyU's ability to develop an effective blended learning strategy. Delivering LEAP content online allows student access before, during, and after the workshop and supports reach-back and research-based self-instruction. The goal is to implement the blended learning design in FY 2020. ☞

References

- Abdullah, F. (2005). HEDPERF versus SERVPERF: The quest for ideal measuring instrument of service quality in higher education sector. *Quality Assurance in Education: An International Perspective*, 13(4), 305–328. Retrieved from <https://eric.ed.gov/?id=EJ801769>
- Abdullah, F. (2006a). The development of HEDPERF: A new measuring instrument of service quality for the higher education sector. *International Journal of Consumer Studies*, 30(6), 569–581. <https://doi.org/10.1111/j.1470-6431.2005.00480.x>
- Abdullah, F. (2006b). Measuring service quality in higher education: HEDPERF versus SERVPERF. *Marketing Intelligence & Planning*, 24(1), 31–47. [doi:10.1108/02634500610641543](https://doi.org/10.1108/02634500610641543)
- Adil, M., Mohammad Al Ghaswyneh, O. F., & Musallam Albkour, A. (2013). SERVQUAL and SERVPERF: A review of measures in services marketing research. *Global Journal of Management and Business Research Marketing*, 13(6), 65–76.
- Berry, L. L., Wall, E. A., & Carbone, L. P. (May 2006). Service clues and customer assessment of the service experience: Lessons from marketing. *Academy of Management Perspectives*, 20(2), 43–57. <https://doi.org/10.5465/amp.2006.20591004>

- Bliuc, A., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *The Internet and Higher Education*, 10(4), 231–244. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S1096751607000516>
- Brown, R. B. (2015). The Army University: Educating Leaders to Win in a Complex World. *Military Review*, July-August, 18–28. Retrieved from https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20150831_art008.pdf
- Carlzon, J. (1987) *Moments of truth: New strategies for today's customer driven economy*. New York: Harper Business.
- Celuch, K., & Robinson, N. M. (2016). How the customer feedback process contributes to perceived customer orientation and affective commitment in the higher educational service context. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 29, 53–76. Retrieved from <https://www.questia.com/library/journal/1P3-4308938011/how-the-customer-feedback-process-contributes-to-perceived>
- Chalcraft, D., Hilton, T., & Hughes, T. (2015, January). Customer, collaborator or co-creator? What is the role of the student in a changing higher education servicescape? *Journal of Marketing for Higher Education*, 25(1), 1–4. doi:10.1080/08841241.2015.1044790
- Chen, C. C., & Jones, K. T. (2007). Blended learning vs. traditional classroom settings: Assessing effectiveness and student perceptions in an MBA accounting course. *The Journal of Educators Online*, 4(1), 1–15. Retrieved from <https://files.eric.ed.gov/fulltext/EJ907743.pdf>
- De George-Walker, L., & Keeffe, M. (2010). Self-determined blended learning: A case study of blended learning design. *Higher Education Research & Development*, 29(1), 1–13. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/07294360903277380>
- Galeeva, R. B. (2016). SERVQUAL application and adaptation for educational service quality assessments in Russian higher education. *Quality Assurance in Education*, 24(3), 329–348. <https://doi.org/10.1108/QAE-06-2015-0024>
- Ganić, E., Babić-Hodović, V., & Arslanagić-Kalajdžić, M. (2018). Effects of SERVPERF dimensions on students' loyalty -Do you know what is behind the scene? *International Journal of Business and Social Science*, 9(2), 215–224. Retrieved from http://ijbssnet.com/journals/Vol_9_No_2_February_2018/24.pdf
- Hockly, N. (2018). Blended learning. *ELT Journal*, 72(1), 97–101. Retrieved from <https://academic.oup.com/eltj/article-abstract/72/1/97/4812363>
- Lim, D. H., Morris, M. L., & Kupritz, V. W. (2007). Online vs. blended learning: Differences in instructional outcomes and learner satisfaction. *Journal of Asynchronous Learning Networks*, 11(2), 27–42. Retrieved from <https://eric.ed.gov/?id=EJ842695>
- Lira, L. L., & Beurskens, K. R. (2017). An engine for Army learning: Army University's Center for Teaching and Learning Excellence. *Journal of Military Learning*, 1(2), 44–55. Retrieved from <https://www.armyupress.army.mil/Portals/7/journal-of-military-learning/Archives/jml-october-2017-Whole-book.pdf>
- Mahmoud, A. B., & Khalifa, B. (2015). A confirmatory factor analysis for SERVPERF instrument based on a sample of students from Syrian universities. *Education and Training*, 57(3), 343–359. doi:10.1108/ET-04-2014-0038
- Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, 115(030303), 1–47. Retrieved from http://www.academia.edu/download/43209482/study_online_and_blended_learning.pdf

- Parasuraman A., Zeithaml V. A., & Berry L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40. Retrieved from https://www.researchgate.net/publication/225083802_SERVQUAL_A_multiple-Item_Scale_for_measuring_consumer_perceptions_of_service_quality
- Pruden, D., & Vavra, T. G. (2015). An experiment in managing word of mouth. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 28, 104–110. Retrieved from <https://www.questia.com/library/journal/1P3-3936717991/an-experiment-in-managing-word-of-mouth>
- Shi, W., Tang, L., Zhang, X., Gao, Y., & Zhu, Y. (2016). How does word of mouth affect customer satisfaction? *The Journal of Business & Industrial Marketing*, 31(3), 393–403. Retrieved from https://www.researchgate.net/publication/302064955_How_does_word_of_mouth_affect_customer_satisfaction
- Silva, D. S., Moraes, G. H. S. M., Makiya, I. K., & Cesar, F. I. G. (2017). Measurement of perceived service quality in higher education institutions: A review of HEDPERF scale use. *Quality Assurance in Education*, 25(4), 415–439. doi:10.1108/QAE-10-2016-0058
- Sivadas, E., & Jindal, R. P. (2017). Alternative measures of satisfaction and word of mouth. *The Journal of Services Marketing*, 31(2), 119–130. Retrieved from https://www.researchgate.net/publication/316358293_Alternative_measures_of_satisfaction_and_word_of_mouth
- Teeroovengadam, V., Kamalanabhan, T. J., & Seebaluck, A. K. (2016). Measuring service quality in higher education: Development of a hierarchical model (HESQUAL). *Quality Assurance in Education: An International Perspective*, 24(2), 244–258. Retrieved from <https://eric.ed.gov/?id=EJ1094457>
- Tripathi, G. (2017). Customer satisfaction and word of mouth intentions: Testing the mediating effect of customer loyalty. *Journal of Services Research*, 17(2), 1–16. Retrieved from <https://search.proquest.com/openview/c7b8c1e03f53f86463c57d8b68f72950/1?cbl=28391&pq-origsite=gscholar>
- U.S. Department of the Army. (2012). *Mission command* (Department of the Army Doctrine Publication 6-0). Washington, DC: U.S. Government Printing Office.
- U.S. Department of the Army. (2018a). *Fiscal year 2018 (FY18) Training and education development (TED) workload management site assistance visits (SAV)* (U.S. Army Training and Doctrine Command Tasking Order IN180525). Washington, DC: U.S. Government Publishing Office (GPO).
- U.S. Department of the Army. (2018b). *FY 19 center and schools request for Learning Enterprise Advisory Program site assistance visits* (U.S. Army Training and Doctrine Command Tasking Order IN181571). Washington, DC: U.S. GPO.
- Zhonggen, Y., & Yuexiu, Z. (2015). Blended learning over two decades. *International Journal of Information and Communication Technology Education*, 11(3), 1–19. doi:10.4018/IJICTE.2015070101

The Institutional Research and Assessment Division of Army University

Research About and for the U.S. Army Training and Doctrine Command

Alice J. (Sena) Garven and Wade R. Elmore

Army University

Abstract

Institutional research provides invaluable feedback about an organization's products and performance. Although there is a wealth of institutional research occurring throughout U.S. Army Professional Military Education and Training (PMET), this research largely remains in stovepipes, thus limiting the visibility of insights and innovations identified. To fill this need, the Army University (ArmyU) has created the Institutional Research and Assessment Division (IRAD) to conduct research, manage research programs, and provide expert technical assistance to the U.S. Army Training and Doctrine Command (TRADOC). IRAD has developed the ArmyU's institutional research plan (AIRP) to fill the gap in enterprise-level institutional research in PMET. The AIRP describes research activities on a continuum with research *about* ArmyU on one end and research *for* ArmyU on the other. IRAD has developed two lines of effort (LOEs): LOE 1 is to work with those conducting research activities to coordinate, synchronize, and integrate research that is currently being conducted; and LOE 2 is to investigate independent research questions to benefit PMET and the Army. The level of success for both LOEs depends on cooperation and collaboration throughout PMET, and it will require IRAD to develop a federated network of organizations that value research and can contribute to an enterprise level of understanding, insight, and innovation.

Why Does Army University Need an Institutional Research and Assessment Division?

Institutional research is a vital resource to traditional colleges and universities as it provides valuable research expertise and feedback to the institution in order to improve, innovate, and adapt education to meet the needs of the students, and in the case of Army University (ArmyU), the Army. While the term institutional research covers a breadth of topics, and there is no standard set of research conducted by an institutional research department or division, there are several forms of feedback that these units can provide to their institutions. Evaluations can provide actionable feedback on courses, classes, curriculum, instructors, programs, and technologies or techniques to both identify what is unsuccessful and needs to be modified as well as what is successful and should be promulgated throughout the institution. Reporting of student success also provides an overall metric of the success of an institution.

As Army Professional Military Education and Training (PMET) has developed and evolved to meet the needs of the Army, the number of schools and centers of excellence responsible for education and training has increased and become geographically dispersed. While the training and education has remained world class-integration, synchronization, and innovation across the enterprise has not been fostered. ArmyU was created to modernize PMET to better prepare soldiers and Army civilians for the complex 21st-century security environment. To achieve this goal, ArmyU's mission is to increase academic rigor and relevance; increase competence, character, and commitment of soldiers, Army civilians, and leaders; expand the prestige of Army learning organizations; identify and promulgate best practices in education and management; and increase the agility of PMET to adapt to the changes needed by the operational force (Army University, 2017, p. 2). ArmyU connects PMET across cohorts within a unified educational system organized like the best colleges and universities in the United States. This organization allows for synchronization of education and training while sharing resources across the learning enterprise and cultivating innovation through the sharing of information.

Alice J. (Sena) Garven, PhD, is the chief of the Institutional Research and Assessment Division of Army University. She received her PhD in social psychology from the University of Nebraska, Lincoln, and spent 13 years with the Army Research Institute. She has been a researcher for the Army for over 15 years.

Wade R. Elmore, PhD, received his PhD in psychology from the University of Missouri–Kansas City in 2014. Previously, he worked with the Army Research Institute for Behavioral and Social Sciences (2011) and the Center for Army Leadership. He is a research psychologist in the Institutional Research and Assessment Division of Army University.

The creation of ArmyU also allows for the development of the first enterprise-wide institutional research division to synchronize research and assessment being performed across the enterprise and to help to decrease the stovepipes of research that exist within the schools and centers.

What Is the Institutional Research and Assessment Division?

The Institutional Research and Assessment Division (IRAD) was established in 2017, as ArmyU's primary staff section to conduct research, manage research programs, and provide technical assistance to the U.S. Army Training and Doctrine Command (TRADOC) to support decision-making for innovative learning, leading to improved tactical and technical expertise and increased readiness of our soldiers. The research IRAD supports exists on a continuum anchored by what is described as research *about* ArmyU on one end and research *for* ArmyU on the other, as depicted in the figure (on page 76). Research efforts on the *about* end of the continuum are more descriptive in nature and include programmatic efforts to maintain and improve existing systems. Research *for* ArmyU is more exploratory in nature and is undertaken with the intent to discover and test innovative solutions, which may be promulgated throughout PMET. Just like ArmyU is not designed to perform education throughout PMET, but rather to support and provide technical expertise to the schools and centers, IRAD is not intended to perform all of the institutional research done within the schools and centers but to synchronize, coordinate, and empower schools and centers with the tools to effectively conduct their own research. IRAD will initiate and retain control of much of the research done *for* the ArmyU end of the continuum, and success will largely rely on partnerships throughout the institutional and operational Army. The work being done on the *about* ArmyU end of the continuum is largely already being done throughout PMET, and IRAD will serve as the synchronizing and unifying role, which will require collaboration with the organizations within ArmyU and TRADOC who are collecting the institutional data. This model is generally referred to as a federated network model and gives the Army an advantage over the traditional model by preserving the autonomy and authority of the individual organizations (Swing & Ross, 2016, p. 8). This is a break from the traditional model used in most colleges and universities, where institutional research is centralized into a single department or division responsible for conducting all institutional research. The traditional model would present many difficulties to ArmyU and ultimately would not fit within its mission of supporting and assisting the schools and centers. Additionally, the federated network model fosters a climate of collaboration and mutual responsibility toward the goal of improving the enterprise.

and analysis to evaluate programs, techniques, and technologies by request as an additional duty. Unlike traditional colleges and universities—the breadth of institutional research is occurring in PMET without a coordinating body.

The level of institutional research being conducted throughout PMET demonstrates there is value for the feedback it generates, but the innovation and insights generated by this research are limited to those who are aware of it. The gap that IRAD fills is lack of a unifying organization to help share that information across schools, centers, and other organizations to facilitate adaptation and innovation at the organizational level. In the same way that ArmyU was designed to modernize, synchronize, and integrate PMET, IRAD is uniquely suited to coordinate, synchronize, and integrate institutional research throughout PMET, filling the identified gap. The existing information being collected could be standardized, compiled, and synchronized across the enterprise by IRAD to feed into a Learning Common Operating Picture providing decision information for all levels of leadership throughout the PMET system. IRAD also has the technical expertise to help build the capacity of the schools and centers to gather feedback from sources that may be more difficult to reach, such as the operational force. IRAD has been staffed to have the expertise to both draw together the institutional research currently conducted throughout the enterprise to answer larger questions about the enterprise, as well as conduct and coordinate enterprise-level research to evaluate techniques and technologies.

What Is IRAD Going to Do?

IRAD has developed a plan to coordinate, synchronize and integrate the research occurring throughout PMET. As IRAD laid out the plan for bringing together the information being collected throughout PMET, it kept in mind the principles of the mission command philosophy and the service and support orientation of ArmyU (U.S. Department of the Army, 2012). While it is clear that IRAD is not in command of any of the organizations they support, IRAD does hope to provide leadership in the efforts to coordinate, synchronize, and integrate research across PMET. While developing the ArmyU institutional research plan (AIRP), IRAD was presented with the opportunity—and frankly, the necessity—to break from the traditional model for institutional research found in most colleges and universities. The traditional model relies on a centralized institutional research division that controls the research and feeds the results and recommendations to the subordinate organization and the organizational leadership. The break from the traditional model is a shift away from a centralized model toward a decentralized model with IRAD supporting the independent units conducting their own research while IRAD performs the duties of synchronization, compiling, analyzing, and reporting the findings at the enterprise level. IRAD respects the autonomy and

expertise of the schools and centers to identify what feedback would be most useful to them while maximizing the benefits of creating an enterprise-wide feedback system.

The AIRP can be broken down into two major lines of effort (LOE) that lay on different ends of the IRAD research continuum, as seen in the figure (on page 76). LOE 1 exists within the *about* ArmyU end of the IRAD research continuum and includes the coordination, synchronization, and integration of the institutional research conducted by the independent institutions within PMET. The tasks within this line are focused on working with organizations throughout PMET to bring together the relevant information they are collecting to be aggregated up to the enterprise level. LOE 2 is IRAD-conducted research, which falls on the *for* ArmyU end of the IRAD research continuum. The efforts in LOE 2 are internally and externally driven research focusing on innovation and evaluation of techniques and technologies relevant to PMET.

LOE 1, in the AIRP, fills the gap in PMET enterprise-level institutional research by assigning IRAD the duties of coordinating, synchronizing, and integrating research across PMET. In this role, IRAD will identify all of the sources of institutionally relevant data and begin a dialogue with those organizations. The existing information being collected could be compiled and synchronized across the enterprise by IRAD to feed into a Learning Common Operating Picture providing decision information for all levels of leadership throughout the PMET system. Communication with each organization may vary depending on what IRAD can offer them as well as the type and amount of institutional research they conduct, but collaboration for mutually beneficial outcomes will always be the goal.

Aligned with our mission to support ArmyU and the organizations it supports, the major goal for AIRP is to assist schools and centers in increasing the quality and utility of information gathered within their internal feedback loops, such as faculty, course, and curriculum evaluations, while simultaneously improving the standardization enterprise-wide so that the information being collected can be compiled and analyzed for enterprise-level feedback. The plan is to leverage the expertise within IRAD to improve the quality of information being collected and to ensure that this information is most useful to those collecting it. This assistance could take the form of identifying questions of interest, reviewing items used, or incorporating new survey technology available to streamline information collection and expand the reach beyond those who recently completed the education or training. IRAD can also leverage its enterprise-wide viewpoint to look for commonalities in the questions of interest across organizations so those questions can be standardized providing consistent information at the enterprise level. As LOE 1 matures, IRAD will be able to measure and report enterprise-level advancement and identify schools and centers that excel in certain areas to look for best practices.

In AIRP, LOE 2 encapsulates the research efforts by IRAD to evaluate and investigate techniques, theories, and technologies that might be valuable to the PMET. These efforts will be driven by many factors, but they will generally fall within three major

categories. The first major effort will investigate research questions generated internally within IRAD. These will be enterprise relevant questions based on observations while interacting with both the operational and institutional Army. These projects will generally not require any outside resources and will be conducted concurrently with the LOEs. The second major effort will be answering questions posed by the Learning Sciences Committee (LScC) and the Army Learning Coordination Council. IRAD will likely not have the capacity to answer all of the questions posed by these committees, and thus will need to prioritize and possibly seek additional resources to support this effort on a case-by-case basis. The third major effort will be an ongoing effort working with the schools and centers throughout PMET to identify techniques, tactics, and procedures (TTPs) developed at their institutions. The TTPs collected will be analyzed and tested to identify which meet the criteria of a best practice. The identified best practices will then be disseminated throughout the enterprise.

How Is IRAD Going to Do It?

The implementation of the AIRP is tied to building relationships throughout PMET as the federated network relies on the independent organizations throughout PMET collaborating and sharing information with IRAD. The first step to building relationships is bringing people to the table. IRAD has begun this process by leveraging its role in the LScC by inviting stakeholders and collaborators to be members, where IRAD hopes to work to build a shared understanding of the value of institutional research to the Army learning enterprise, and how the members can contribute and collaborate to build the network. IRAD hopes that this will create momentum from those on the committee to all of PMET through personal and professional connections.

Implementation of LOE 1 from AIRP will rely on creating a network of organizations that see the value of standardized and comparable feedback across PMET, which can be aggregated to the enterprise level. IRAD plans to build this network largely through the relationships established in the LScC, by working with committee members to identify data sources throughout PMET. IRAD has already begun this process by inviting those identified as stakeholders and data sources to be a part of the committee. IRAD will actively work to expand the network as other stakeholder organizations are identified and invited to join the network. IRAD also hopes that the network will expand organically and as members spread the word that participation has benefits.

Another avenue IRAD is using to build relationships and expand the network is through the Learning Enterprise Assistance Program (LEAP), an ArmyU program developed to provide expert assistance from ArmyU to the learning enterprise. IRAD's contribution to LEAP is principally assisting the schools and centers build their capacity to collect actionable feedback about their products and services. This is a win-win-win situation. The schools and centers win through an increased capacity to do institutional

research and gather feedback both from students and faculty and from the operational force. IRAD wins by building the network required for coordinated, synchronized, and integrated enterprise-level institutional research. The enterprise wins by gaining access to the innovation and insights generated throughout PMET.

Progress has been made on all three major efforts within LOE 2. IRAD has progressed within the first major effort by establishing a process for identifying, vetting, approving, and conducting research within IRAD. IRAD is currently working through the process with several research ideas identified in briefings from senior leaders and conversations with other divisions within ArmyU. IRAD expects that two independent research projects will kick off in fiscal year 2019. As IRAD reaches full operational capacity, it should be able to increase the amount of internally initiated research, but this will always need to be balanced with externally generated research, which will generally take precedent over internal research. The second major effort within LOE 2 will be influenced by IRAD's exposure to the organizations that it supports. To fully implement this, IRAD will need to advertise its mission and capabilities within ArmyU, the Combined Arms Center, and TRADOC so organizations will reach out to IRAD to sponsor or suggest research. The first meetings of the LScC have occurred, and there has been good participation with many stakeholders already attending. The third major effort within LOE 2 is also underway and will rely on the same relationships as all of IRAD's other research efforts. As the goal is to establish a system to identify education and training TTPs that rise to the level of a best practice through analysis, which can then be disseminated throughout the enterprise, IRAD will need to work with the schools and centers to create a system that provides information with minimal additional work.

The successful implementation of the AIRP is clearly contingent on the participation of those at the schools and centers. IRAD hopes to play a leadership role in the efforts to collect, analyze, and report enterprise-wide institutional research while helping the schools and centers streamline and standardize their internal institutional research processes. IRAD believes that a focus on developing a federated network model with emphasis on collaboration and productive discourse will benefit all involved.

Conclusion

Institutional research is an extremely valuable way to gain insight and feedback. There is a wealth of institutional research being done throughout PMET, but it is mostly stovepiped within the schools, centers, and other organizations doing the research. This creates a lack of visibility for successful innovation and adaptation resulting in missed opportunities to save time, effort, and resources. As the enterprise-level institutional research organization, IRAD has developed a plan to coordinate, synchronize, and integrate research from across PMET, while

also providing enterprise-level research and support. The key component to the ArmyU institutional research plan is the federated network model for institutional research, which relies on highly autonomous members working together to improve PMET. By implementing a federated network, IRAD can fill the data information gap for ArmyU and TRADOC leadership while facilitating individual components and schools to fulfill their obligations and responsibilities to their specific chain of command.

IRAD will need the schools, centers of excellence, and all other TRADOC organizations conducting research activities to become collaborators in an enterprise-level institutional research federated network. With the understanding that this effort will fail without the participation of the units throughout PMET, IRAD hopes to build trust through transparency and demonstrate the value of the federated network through successful collaborations. This article is the first effort by IRAD to build a shared understanding of institutional research among stakeholders, explain the PMET intent, and establish the purpose, goals, and status of enterprise-wide institutional research in PMET. Enterprise-level institutional research will support those who develop curriculum, faculty, and systems that keep PMET in the U.S. Army relevant and the warfighters ready to win in a complex world. 

References

- Army University. (2017). *Army learning strategy*. Retrieved from <https://usacac.army.mil/node/1720>
- Swing, R. L., & Ross, L. E. (2016). A new vision for institutional research. *Change: The Magazine of Higher Learning*, 48(2), 6–13. doi:10.1080/00091383.2016.1163132
- U.S. Department of the Army. (2014). *Mission command* (Army Doctrine Publication 6-0). Washington, DC: U.S. Government Publishing Office.

School Leaders as Educators

Kyle G. Smith

Fires Center of Excellence

Abstract

Leadership remains at the core of debate and research in determining what makes a successful school/district leader. Much of the research focuses on “internal states” (p. 8), values, beliefs, knowledge or skills rather than observed practice (Leithwood, Day, Sammons, Harris, & Hopkins, 2006, pp. 67–70). Narrowing the scope toward leadership practice, while exploring key ideas and best practices in comparing leadership studies and literature from both civilian and Army leadership development programs, offers a bridge between the two professions. The importance of the study is to address a gap in both practice and literature surrounding how the Army prepares, educates, trains, and stabilizes those leaders selected to run Army schools.

Professional military education (PME) serves to equip graduates with a foundational understanding of core tactical, technical, and operational competencies. Observing graduates performance in the field demonstrates congruence between course outcomes and requirements necessary to perform within an occupational skill or area of concentration at grade. The critical component in correlating education along practice rests upon Army school leaders familiar with educational administration and leadership.

Introduction

Instructional improvement demands that school leadership at the principal or superintendent level (e.g., school brigade commander and branch proponent commander) understand the education system and can guide performance along learning strategies (Guthrie & Schuerman, 2011, pp. 60–61). Considering the school leader as an educator, Joseph Murphy (2002) states that leaders “will need to be more broadly educated in general and much more knowledgeable about the core technology of education in particular” (p. 187). Gen. Martin E. Dempsey summed it well in the foreword of *The U.S. Army Learning Concept for 2015*,

where he stated, “We live in a much more competitive security environment. This means that we have to learn faster and better than our future adversaries” (U.S. Department of the Army [DA], 2011, p. i).

Understanding the Army leadership requirements model, along with how the Army develops leaders, facilitates this paper by allowing the reader to become aware of gaps in leadership requirements associated with implementing Army school change (DA, 2013, pp. 3–9, 2015, chap. 1, p. 3). For it is not in how the Army develops leaders, it is to what purpose the Army develops leaders, which exposes gaps in competencies and behaviors. Exploring these gaps, while knowing how to affect change, is dependent upon knowing precisely what one is faced with and understanding the consequential outcomes associated with educational change (McCauley, Ruderman, & Van Velsor, 2010, pp. 18–26).

Progressing beyond traditional leadership models constrained by institutionalized thinking continues to shape the Army’s attempted efforts in transforming Army education. Winston Churchill offered, “The longer you can look back, the farther you can look forward” (International Churchill Society, n.d., “Looking Backward,” para. 2).

The Army’s leadership development model and policy constructed specifically for developing successful Army schools has long been a neglected practice. The Army continues standing upon an organizational leadership model designed to ensure that those in charge execute missions in accordance with doctrine, orders, and training (DA, 2015, chap. 1, p. 1). For example, the successful district and school leadership preparation element distinguishes itself by offering a critical component to drive and influence institutional change, which requires educational leaders who perform functions congruent with both leadership and management roles (Carter, Glass, & Hord, 1993, pp. 71–83).

Exploring the Learning Environment

Over the course of several years, Army leadership has struggled to implement a new Army learning model, *The U.S. Army Learning Concept for 2015*. Answers to the Army’s struggle may be discovered within associated K-12 studies demonstrating successful education reform and district strategies. Studies further suggest that mak-

Lt. Col. Kyle G. Smith, PhD, U.S. Army, retired, is the academic dean at the Fires Center of Excellence, Fort Sill, Oklahoma. He received his PhD from the Department of Leadership and Policy Studies at the University of Oklahoma. His uniformed career included stints as an observer controller on the Scorpion Team (National Training Center), teaching assignments at both the Captains Career Course, Fort Benning, Georgia, and the Department of Joint and Multinational Operations, Fort Leavenworth, Kansas. As a graduate of the Army War College Strategic Arts Program, Smith served as the strategist (6Z) program manager, integrating the program requirements into the Army’s Command and General Staff College curriculum.

ing informed decisions entails educational leaders acquiring appropriate knowledge and skills through education and experience.

In their report on successful school leadership, Leithwood, Day, Sammons, Harris, and Hopkins (2006) explain that, “what leaders do depends on what they think and feel” (p. 8). This helps explain why branch schools and Army centers of excellence are constructed and run like hierarchical military organizations and not as learning organizations (Webster-Wright, 2009, pp. 2–3). Additionally, this supports an apparent gap in the Army’s leader development process for those selected to supervise centers of excellence and run branch proponent/schools. Considering components associated with what successful school leadership looks like and what it takes to lead successful school change should drive senior leaders to incorporate integral parts of successful school models.

Through partnerships with colleagues situated at other centers of excellence throughout the Army, the Army University staff, and local learning community, we continue to share a vision aimed at improving our products and processes leading to enhanced student performance. In order to accomplish these goals, those supervising the centers of excellence and operating the branch/proponent schools must learn to rely upon their educational leaders. Those educational leaders must expertly navigate Army leaders through the Army training and education budgeting and resourcing policy and systems. Furthermore, a relationship of collective trust (Forsyth, Adams, & Hoy, 2011, p. 13) jointly places transformational leadership and educational experts in a better position to maintain the operational needs of the schools, meet the demands directed by Army policy, and improve accountability requirements. Department of the Army Regulation 600-20, *Army Command Policy*, stipulates that “commanders are responsible for everything that their command does or fails to do” (DA, 2014, p. 6). Yet there remains an absence of deliberate preparation, education, and selection resulting in a fractured purpose of the Army leadership development model.

Conclusion

The Army should take a measured approach to better prepare, educate, and select centers of excellence and branch/proponent leaders. For example, programs should be focused on building specific skills that could help better prepare Army leaders selected to supervise centers of excellence or operate branch/proponent schools and to navigate the hurdles involving educational leadership skills and competencies (Fullan, 2011, p. 91; Kowalski, 2013, p. 22).

The clue to the struggle may be found within the Army’s own prescribed formula for command and supported in its own policy and programs. Thus, it might be appropriate to again state: For it is not in how the Army develops leaders, it is

to what purpose the Army develops leaders, which provides a common place to explore new knowledge. Standing on a new frontier shaped by my previous experiences and knowledge gained through an incredible graduate program led by exemplar faculty, I better understand what Fullan (2011) described as the “most effective leaders use practice as their fertile learning ground” (p. xii). The results of these efforts will be fulfilled when the stakeholders embrace the value of a training and evaluation program that ultimately improves student performance.

The Army should seek a more agile, adaptive approach in its command and key billet policies and processes, and, at a minimum, stabilize those who supervise centers of excellence and operate branch/proponent schools beyond the typical one- or two-year term. There is a need to build a stronger leader preparation course that exceeds the current one-week senior officer orientation program. Finally, the Army should establish a superintendent-like certification process, require a degree in education, and seek those who have demonstrated success serving in Army schools and centers, such as the U.S. Army Training and Doctrine Command. Adopting the *Be, Know, Do* model will better support the achievement of an effective Army educational leadership development program (DA, 2015, chap. 3, pp. 2–4).

Comparing civilian school leadership capacity in terms of education, preparation, training, selection, and sustainability may provide a valuable framework with which to link shared experiences to bridge obstacles constraining professional practice. People know or understand what to do, yet fail to apply it broadly simply because change in organizational practice requires both will and skill (Levin & Fullan, 2008, p. 8). ☞

References

- Carter, D. S., Glass, T. E., & Hord, S. M. (1993). *Selecting, preparing, and developing the school superintendent*. Washington, DC: Falmer Press.
- Center for Creative Leadership. (1998). Our view of leadership development. In McCauley, C., Ruderman, M., & Van Velsor, E. (Eds.), *The center for creative leadership handbook of leadership development* (pp. 1–26). San Francisco, CA: Jossey-Bass.
- Clandinin, D. J. (2013). *Engaging in narrative inquiry*. Walnut Creek, CA: Left Coast Press.
- Forsyth, P. B., Adams, C. M., & Hoy, W. K. (2011). *Collective trust: Why schools can't improve without it*. New York, NY: Teachers College Press.
- Fullan, M. (2011). *Change leader: Learning to do what matters most*. San Francisco, CA: Jossey-Bass/John Wiley & Sons.
- Guthrie, J. W., & Schuerman, P. (2011). *Leading schools to success: Constructing and sustaining high-performing learning cultures*. Thousand Oaks, CA: Sage.
- International Churchill Society. (n.d.). Quotes falsely attributed to Winston Churchill. Retrieved from <https://winstonchurchill.org/resources/quotes/quotes-falsely-attributed/>
- Kowalski, T. J. (2013). *The school superintendent; Theory, practice, and cases*. Thousand Oaks, CA: Sage.

- Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Seven strong claims about successful school leadership*. Nottingham, England: National College of School Leadership.
- Levin, B., & Fullan, M. (2008). Learning about system renewal. *Educational Management Administration & Leadership*, 36(2), 298–303.
- Mattingly, C. (2007). Acted narratives: From storytelling to emergent dramas. In Clandinin, D. J. (Ed.), *Handbook of narrative inquiry: Mapping a methodology* (pp. 405–424). Thousand Oaks, CA: Sage Publications.
- Murphy, J. (2002). Reculturing the profession of educational leadership: New blueprints. *Educational Administration Quarterly*, 38(2), 176–191.
- U.S. Department of the Army. (2011). *Army learning concepts* (U.S. Army Training and Doctrine Command Pamphlet 525-8-2). Washington, DC: U.S. Government Printing Office.
- U.S. Department of the Army. (2013). *Army leader development strategy (ALDS)*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of the Army. (2014). *Army command policy* (Department of the Army Regulation 600-20). Washington, DC: U.S. Government Publishing Office.
- U.S. Department of the Army. (2015). *Leader development* (Department of the Army Field Manual 6-22). Washington, DC: U.S. Government Publishing Office.
- Webster-Wright, A. (2009). Reframing professional development through understanding authentic professional learning. *Review of Educational Research*, 79(2), 702–739.

Being in Uncertainty

Cultivating a New Sensibility in Military Education

Peter J. Denning and Susan L. Higgins

A version of “Being in Uncertainty: Cultivating a New Sensibility in Military Education” was previously published in Ralph Doughty, Linton Wells II, and Theodore Hailes, eds., Innovative Learning: A Key to National Security (Fort Leavenworth, KS: The Army Press, 2015), 133–54.

Abstract

We consider the question: Is military education keeping pace with the task of preparing military people for effective leadership in the emerging highly networked, highly unpredictable world? We examine the nature of the changing environment for military operations. We speculate about leadership identity needed in this environment, possible ways to cultivate the required sensibilities, and the possible role of technology in achieving it. We call for a conversation about how military leadership education might be re-designed and how we might get a new design in place.

Today’s global security environment is the most unpredictable that I have seen in 40 years of service.

—General Martin Dempsey, U.S. Army Chairman, Joint Chiefs of Staff¹

If we were the best of the best, why were such attacks not disappearing but in fact increasing? Why were we unable to defeat an under-resourced insurgency? Why were we losing?

—General Stanley McChrystal, U.S. Army²

We are in the midst of a transformation from a machine age to a network age. The machine age taught us to aspire to predictability, control, and efficiency; the network age confronts us with massive, ever-increasing, intractable uncertainties. Possibilities change rapidly and outcomes are unpredictable. Our military leaders were brought up in a machine age of operations planned and executed in a strongly hierarchical, rule-based, and technology-dominated tradition.

The network age breaks the old rules and demands new ones: it integrates billions of humans and machines into an ever-shifting, semi-intelligent organic system. Effective leadership is challenging because there are no fixed rule sets in the network age. Our education systems, designed in the machine age, do not adequately prepare our military for the emerging new world. Our adversaries, who are not subject to our institutional constraints, are moving into the new age faster than we are. It is time for a new conversation about the design of military education.

The now-famous story of Lieutenant Colonel Christopher Hughes in Iraq in April 2003 gives a glimmer of thinking that should become the norm of the Network Age.³ He was leading a battalion from the U.S. Army's 101st Airborne Division toward the Shia mosque in Islamic holy city of Najaf, Iraq. Suddenly, they were surrounded by an angry mob, increasingly agitated as the rumor spread that the Americans were there to forcibly take the mosque. Hughes' military training gave him clear rules—protect his men by raising their firearms toward the crowd, fire a warning shot, and be prepared to fire to kill if needed. Hughes recalled later “If somebody shot a round in the air, there was going to be some sort of massacre.”⁴ Instead, Hughes bucked his training. He ordered his men to drop to one knee, lower their weapons, and smile. Then he ordered them to back away. The crowd parted and he and his men left. No shots were fired on that street that day. Not only did he duck disaster, Hughes won a strategic victory by building trust that the Americans were not trying to take over mosques.

Our Naval Postgraduate School colleague Commander Zachary Staples had an assignment in Iraq in which he got to observe first-hand the devastating effects of improvised explosive devices (IEDs). Up to that point, the military had tried a variety of technology fixes including improved vehicle armor, early detection of explosive chemical residues, and jamming of radio signals that detonated IEDs. These technologies had an effect on reducing IED casualties, but the troops still sustained major injuries because many were not wearing their helmets when an IED hit. Staples asked the men why they did not wear their helmets or the headsets that protected their eardrums from blast overpressure effects. They told him that most convoys were long, hot, and boring—taking off their helmets and their headsets enabled them to listen to their iPods and remain a little cooler. As an engineer, he built a small adapter that gated iPod signals into the helmet headphones so that soldiers could listen to their music with helmet and headsets on, but it automatically switched to the radio channel when needed. Men who used the adapter wore their helmets and sustained far fewer IED injuries. Staples traveled across Iraq offering an IED training seminar in which the graduation token was a free adapter. In the seminar, he showed how to avoid injuries by wearing helmets and using the adapter. He said, “I was able to achieve this innovation and get the buy-in by understanding what was important to them in their everyday culture, and giving them a protective technology that blended into their worlds.”⁵

What made Hughes and Staples buck their training? We think they had a sensibility about the social cultures they came in contact with, enabling them to anticipate people's assessments and moods, and find better alternatives than permitted by the existing rules. They followed their sensibilities instead of the published procedures and coped with unexpected contingencies. We think that such sensibility can be cultivated within a new approach to military education. We will speculate about the shape of that approach in this chapter.

Mindful of Albert Einstein's saying, "We cannot solve our problems with the same thinking we used when we created them," we might ask how we can change our thinking for the new age.⁶ This is the wrong question for our situation because it implicitly assumes thinking will solve the problems that thinking caused. Instead, we will examine here what kind of human beings we need to become so that we will be effective in the new age. Certainly, we need to think differently, see the world through new perspectives, and make new interpretations. But that is far from enough. We also need to embody new practices of sensibilities toward history, culture, moods, emotions, power, and possibilities—for this is how we will be able to act effectively even when there is no time to think. We will examine in depth what this new way of being looks like and how we might cultivate it.

We use the term "network" frequently in this chapter. We are not referring to a machine-age view of a large network of connected computers but rather to a network-age view of billions of people and machines interacting with each other. The emerging network is both social and technological. The network age brings together computing networks and human networks in a way unseen at any time in history,

Peter J. Denning is a distinguished professor of computer science at the US Naval Postgraduate School, Monterey, California. He is chair of the computer science department and director of the Cebrowski Institute for Information Innovation. He has published extensively on computing and education subjects. His most recent books are *The Innovator's Way* (2010) and *Great Principles of Computing* (2015). He holds twenty-six awards for technical and educational accomplishment. He is a former president of the Association for Computing Machinery and is editor of the online Ubiquity, an ACM magazine devoted to the future of computing.

Susan L. Higgins is a research associate in the Information Science Department and the deputy director of the Cebrowski Institute for Information Innovation at the Naval Postgraduate School. She is a retired Navy commander and a plank owner in the Navy's information professional community. While on active duty she held numerous leadership positions in commands with missions focused on information technology, space systems, and communications. At the Naval Postgraduate School she led the development of the distance learning program and has designed and taught courses for executive education as well as graduate level courses in command and control and military transformation.



Figure 1. The IBM Blue Gene/P supercomputer installation 10 December 2007 at the Argonne Leadership Angela Yang Computing Facility located in the Argonne National Laboratory in Lemont, Illinois. (Photo courtesy of Argonne National Laboratory)

creating the ever shifting, semi-intelligent organic system we now experience as “the network.” The network age has the computational power of the machine age, plus publishing, information sharing, global communications, coordinating, social networking, sharing economies, crowdsourcing, mobility, cheap cloud computing, and more. And it includes a new dark side of cyber crime, identity theft, cyber attacks, dark networks, and black-market “network exploits.”

Role of Computing Technology

Computing technology is a transformative influence behind the changes in our world. We have developed machines of vast computational power and connected them into a vast network. Today’s computers are a million times faster and a thousand times smaller than those of fifty years ago. Today’s internet has grown to over fifteen billion machines and four billion people. The network of machines and people has acquired a sort of intelligence—the collective amplified intelligence of all the people participating in it. The semi-intelligent network functions more like a biological ecosystem than a huge supercomputer.

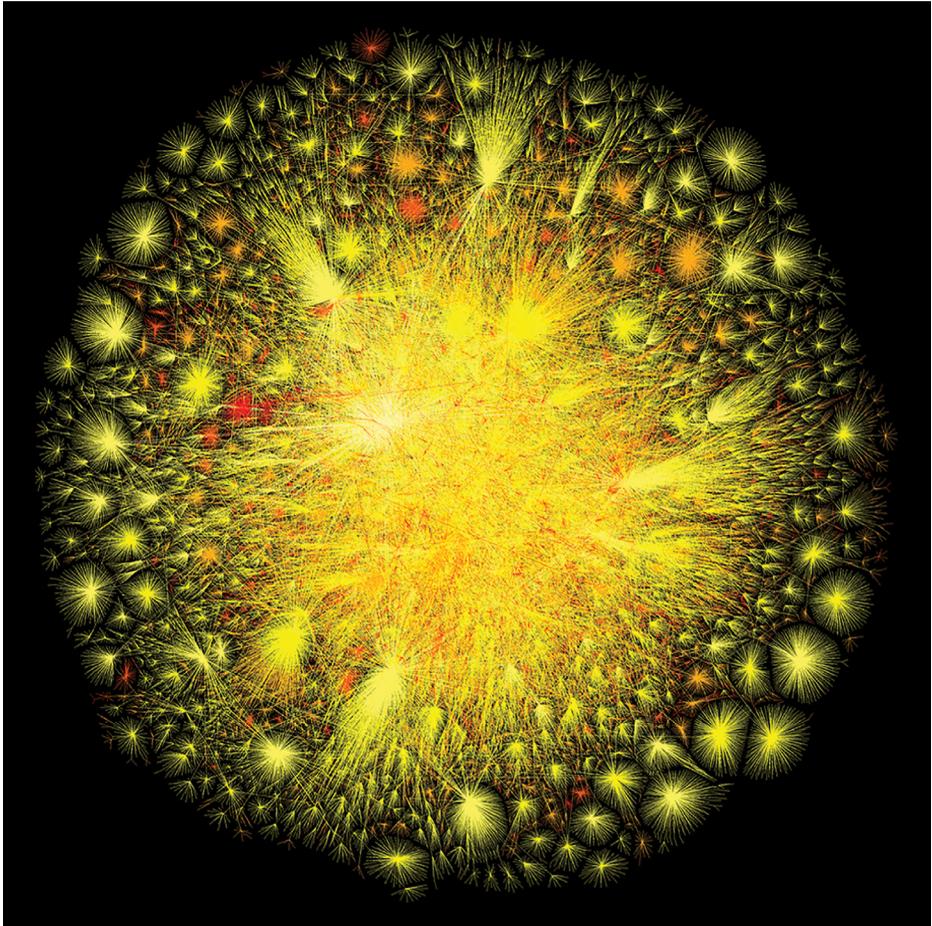


Figure 2. Internet connection graph from border gateway protocol data. (Figure courtesy of Barrett Lyon, The Opte Project)

The first of the two accompanying images (figure 1, page 90) illustrates the computing power we have achieved so far. It is the IBM Blue Gene supercomputer at Argonne Labs. It houses 250,000 processors in 72 cabinets connected by an optical network. It can perform around 10^{15} operations per second—a million times faster than the chip in your smartphone. The second image (figure 2) is a beautiful graph of connections between internet sites collected from data on packet traffic in the internet.

The internet is an organic system of humans and machines in a never-ending dance of interaction altering and amplifying each other's capabilities. We are constantly changing the system's structure. Our collective behavior is unpredictable because there is no way to know how interactions among so many people and machines will turn out. This is the context in which military operations are being conducted.

Table 1
Examples of Problems Induced by Computing Technology

Large scale sensor networks and situational awareness	Massive sensory data easily push operators into information overwhelm and present them with a "situation" too complex for their understanding. The large number of people interacting and making their own choices makes prediction impossible.
Command and control of huge networks	Operators are easily pushed into overload. Great uncertainties are caused by incomplete information and lack of control over adversary actions.
Encryption hides content but not actions	Strong encryption hides content of messages behind unbreakable ciphers. But metadata, including event records of packet movements, allows inferring plans and intentions of those sending secret messages.
Finding dark networks	Adversaries take extraordinary steps beyond encryption to hide their communications and networks. But their actions leave "footprints" in the physical world. Can the footprints be correlated and analyzed to infer the contents of hidden communications, locate hidden actors, and even map their social networks?
Automated weapon control	It seems that the only choice with a very complex system is to develop weapon controllers that decide how and when to use the weapon faster than humans can determine and respond. This is problematic because taking humans out of the loop leaves decision making to machine intelligence that does not understand political and diplomatic nuances. Can we keep humans in the loop?
Cyber attacks	The attacker's intent ranges from nondestructive theft of information without being detected, to disabling our ability to communicate and coordinate. Should we have backup systems? What might they be?
Swarming operations	Drone technology is making swarm tactics cheap, feasible, and effective. An aircraft carrier cannot defend itself against a swarm of autonomous bombardier drones. But we may be able to defend with our own swarms of defensive drones.

Table by authors.

Reinaldo Normand, a Silicon Valley entrepreneur, writes a provocative book about the speed at which digitalization of almost everything, combined with exponential growth of digital technologies in almost every sector, defies our abilities to project what will happen next.⁷ He calls attention to 15 digital technology trends, each growing exponentially, that are causing major disruptions in economies and governments—the cloud, mobility, sharing economy, internet of things, big data, virtual reality, 3D printing, bionic implants, biotech, nanotech, artificial intelligence, alternative energies, bitcoin, and digital crime. Exponential trends foster avalanches that sweep away entire industries, long familiar ways of doing business, and identities. Exponential trends and avalanches, rare in the machine age, are increasingly common in the network age.

Table 2

Contrasts Between Machine-Age and Network-Age Perspectives

1	Innovation as idea creation	<u>Innovation as emergence</u>
2	Knowing more	Exponential uncertainty
3	Diffusion	Mobilization
4	Deterministic	Unpredictable
5	No intelligence	Intelligence
6	Efficiency	Effectiveness
7	Managing toward goals	Navigating
8	Rule sets and end-states	Commitments, moods, power
9	Sustaining innovation, brands	Shifting identities, disruption, avalanches

Table by authors.

Military leaders today are trying to come to terms with new realities of warfare enabled by the network context. Here are examples of problems induced by computing technology, but for which there is no technological solution (see table 1, page 92).

Contrasting Perspectives

There are many contrasts between our machine-age interpretations of our world and the emerging network-age interpretations. We have listed nine examples in table 2, and we will comment on them next.

(1) The first contrast concerns the origins of innovation. Our innovation process models assume that innovation begins with an idea that is then processed through a series of steps until it is embodied into a technology artifact that diffuses through a population. These models make it seem that ideas drive innovation and without ideas there is no innovation; therefore we put great emphasis on creativity and imagination. Yet even with charismatic leadership, our success with creative thinking, strategic plans,

and careful process management is dismal—under four percent of innovation projects make a positive return on their investment.⁸ This has been a scourge for the military, which depends on constant innovation to stay ahead of nimble adversaries.

Through our studies of innovation, we are learning that much innovation does not begin with an idea—it emerges in the practices of communities as people respond to concerns using whatever tools and technologies they find around them.⁹ Whatever we call the “idea” is often a story invented in hindsight to explain the practice that has already emerged. We are also learning that 90 percent of the work to achieve innovation is involved in adoption of the new practice rather than creating ideas. We are likely to become much more successful at innovation if we let go of the “idea idea” and learn how to foster adoption.

(2) The second contrast concerns the promise of “big data.” On the one hand, big data offers vast knowledge of events everywhere in the network and the computational power to locate patterns and causes. On the other hand, the more information we have and the more connected we are, the less we are able to predict. It seems that the increasing numbers of connections and increasing sophistication of automation generate uncertainty faster than they resolve uncertainty.

(3) The third contrast concerns technology adoption. Our machine-age interpretation is that adoption results from information diffusion: people making conscious decisions to use a new technology after receiving information about it through their communication channels and social connections.¹⁰ In the network age, however, we see people unconsciously falling into new practices that attract them by appearing more effective, admirable, or fashionable; leaders foster adoption by mobilizing people in a network to commit to the new practice.

(4) The fourth contrast concerns deep differences between a network of machines and a network of people. Machines are deterministic: they follow definite steps, in definite orders, producing definite outcomes. The network of people and machines on the other hand is non-deterministic: no outcome is certain and it is often difficult even to enumerate all the possibilities available at a given time. Our deterministic rule sets, developed in the machine age, do not work well in the uncertain network age.

(5) The fifth contrast concerns our notions of intelligence. Machines are not intelligent. All you see inside a machine is electronic circuits made of transistors and wires. Whatever we call intelligent behavior of a machine is simply an assessment provoked in us by the machine’s designer. When we connect huge numbers of people and machines, the resulting network behaves with intelligence—the collective amplified intelligence of the people using it. The network can aggregate data about our individual movements and make inferences about our future movements. How do we navigate in such an environment?

(6) The sixth contrast concerns the role of efficiency. With machines, we are concerned to minimize waste of time and energy. In the network age, we often have more computing power and bandwidth than we need and our concern shifts to effectiveness. How do we foster the effective outcomes when the tools we find around us are cheap?

(7) The seventh contrast is that in the uncertain, unpredictable environment of the network age we often cannot describe the end-states we seek. We can speak only of possibilities and we wonder how to move in the network closer to the possibilities that interest us. We cannot readily define a path from where we are to where we want to be. Instead, we must find our way amidst the uncertainty, much the same as navigators have historically found their way across uncertain seas to destinations well over the horizon. Instead of defining a path and managing it every step of the way, we explore and navigate through an ocean of uncertainties. We alter course when we encounter unexpected contingencies.

(8) The eighth contrast is the focus on what is most important for achieving outcomes. The machine-age view is that the world is a complex system and the desired outcome (end) is a state of the system. In this view, we define rule sets for how to move in the system and get to the end state. The network-age view is that the desired outcomes depend on commitments that people make. Their willingness to make commitments depends on their moods. The capacity to induce others to make commitments depends on whether they have personal and social power in the network. Clarity in making speech acts such as requests, promises, declarations, assertions, and assessment is essential for developing personal and social power.

(9) The ninth contrast concerns how organizations, industries, and identities evolve. In the machine age, conditions are relatively stable and predictable; organizations have many years to develop brands and earn trust of generations of customers. In the network age, disruptions of brand and identity are increasingly common; avalanches sweep away entire job sectors in just a few years. How do we rebuild if we are disrupted? Manage our moods?

In these contrasts, we have emphasized that the machine-age framework is heavily technological. It looks for technological and rule-based solutions to problems. It seeks to define rule sets for dealing with recurrent problems. Bureaucracies, which achieve machine-like behavior from human organizations, fall in this category and are notoriously slow to change. The military services are deeply bureaucratic. They have extensive rule sets and instructions to cover almost any imaginable contingency and are constantly producing new instructions to cover new contingencies.

In the network age, leaders must become aware of the social context in which technology is used; its history, stakeholders, culture, dispositions, moods, and power exercised by various groups. Vice Admiral Arthur Cebrowski, a network-age thinker par excellence, frequently gave speeches arguing that the two approaches can be brought together through the military doctrine of “commander’s intent.” He advocated that commanding officers enable forces to organize from the bottom up—or to self-synchronize—to meet the commander’s intent.¹¹ This is similar to McChrystal’s principle to delegate decisions on specific actions to the lowest possible level.¹² The Cebrowski and McChrystal interpretations of command are controversial.¹³ Too many junior officers fear their careers will be ruined if they break the rules or violate

their chains of command. It will be a real challenge to develop organizational rewards that incentivize the development of network age leaders.

Deeper Reflection on the Ideation-Emergence Contrast

Let us examine in more detail the first of the contrasts in the list. This is the contrast between the machine age notion that ideas cause or initiate innovation and the network age notion that innovations emerge in the practices of people in the domain. Our success at innovation and staying ahead of adversaries will depend not on idea creation but on how well we master emergence.

Ideation means imagining and creating new ideas for solving problems. The result is a description of the idea, a prototype, and a plan to implement it. The main work of innovation is seen as invention; the work of gaining adoption is buried beneath the lesser term “implement.” This notion is attractive because our main models of innovation—pipeline, funnel, diffusion, and innovation cell—all show innovation being initiated and driven by ideas. Moreover, these four models are formulated as technologies—an assembly line, a series of funnels, a communication network, a spinning wheel throwing off sparks. The models themselves exemplify machine age thinking and terminology.

The flaws in this framework can be seen in two major breakdowns mentioned earlier: the four percent success rate of innovation proposals and the 90 percent adoption work factor. We need to spend less time on ideation and more on fostering emergence. Many adversaries are using approaches consistent with emergence (discussed next) and are overtaking us in the novelty of their attacks.¹⁴

The fundamental problem with the machine-age framework for innovation is that it views the world as constituted of objects to be described and controlled; innovation looks like a process of manipulating and controlling objects. In this framework, innovators must be skilled at planning, selling, executing, managing, and spinning off.

In contrast, the network age brings the interpretation that the world is constituted by practices. Innovation is the emergence of new practices that displace existing practices. Practices are rooted in human interactions, history, conversations, and skills; objects and technologies are tools and equipment to enable and facilitate practices. Emergence means a marginal practice shows up in a community and spreads as people imitate and improve it. They come to embody the new practice, which means they do it without conscious thought.

In the network-age framework, innovators facilitate emergences by exercising by the skills of appropriating, navigating, offering, and mobilizing.¹⁵ If you are not sure what these terms mean, you are not alone. To innovate in the network age, we need to understand and cultivate these skills—and include them in our education of military officers.

Leadership Identity

McChrystal et al. favor the metaphor of leaders as gardeners, helping people grow their organic networks by tending, caring, watering, fertilizing, and pruning as needed.¹⁶ This metaphor is consistent with our view of network age leaders. Is there a curriculum that teaches in this metaphor? We think it is premature to try to specify a whole curriculum. Let us begin with simple steps, starting with conversations about skills and practices of leaders who will thrive in the network age. Let us also design experiments that help us learn more, as Vice Admiral Cebrowski advised when changing world conditions create new military challenges.¹⁷ We think a good place to start is with a conversation on the identity of a network age leader.¹⁸

Leader as Innovator—The leader understands that missions are accomplished and battles won through innovation. The leader understands innovation as emergence of practices and makes new proposals by responding to concerns and contingencies with new combinations of existing practices and technologies. The leader mobilizes members of the social community to commit to the new practice and bring others along. The leader understands that some pockets of the network will support and others will oppose the proposed change, and helps the team ride with the supporters and seek a turn of mind among the opposers.

Leader as Navigator—The leader helps the group find its way through oceans of uncertainties and fogs of war, without having a map of the territory or knowing a clear path to the goal. The leader is prepared to respond and adapt to unexpected contingencies and has prepared the team with the right competencies and commitment to stick together and support each other. The leader sets the direction, provides necessary context, and allows the individual members to make choices based on local conditions while moving in the general direction. The leader expects them to exercise good judgment and ask for help when they do not know. The leader is constantly open to new contingencies and adapts around them.¹⁹

Leader as Historical Agent—The leader respects that all people grow up in different communities that are parts of different cultures, from which they acquired concerns, practices, interpretations, and distinctions. The leader is constantly entering into community conversations that were going on before the leader came along. The leader is interested in other people's histories and their communities, not only to see what concerns them but also to build trust and credibility with them.

Leader as Opener of Possibilities—The leader realizes the importance of orchestrating moods to create openings for action toward new possibilities. The leader opens new possibilities by making well-grounded assessments of current conditions and on the basis of those assessments offers new possibilities and ways to make them happen. The leader produces a commitment in the group to move toward a possibility.²⁰

Leader as Appropriator—The leader understands that every new mission is likely to encounter new communities. An experienced and capable person confronting a new situation must be willing to be a “beginning learner” in the new context. Finding and listening to the “voices” of a community helps to accelerate understanding. Continuous learning practices help a leader “appropriate” a holistic familiarity of a changing world.²¹

The leader’s identity is a story that blends attitudes, dispositions, commitments, credibility, and skills in these five areas. Network age leaders must be willing to accept rapid change and adapt to emerging new realities. In other words, the leader’s identity is not fixed but is always changing. The leader looks for opportunities in the ever-changing environment and adapts with them. The messiness of this process of adaption may feel uncomfortable. McChrystal notes, “for an engineer educated at West Point, the idea that a problem has different solutions on different days was fundamentally disturbing. Yet, that was the case.”²²

Toward a New Learning Environment

Designing new learning environments that support the cultivation of network age leaders needs an iterative approach that includes both explorative conversations and experimentation. This should begin with a broad conversation about the breakdowns currently experienced by military leaders, the nature of the world in which they will be leading future military operations, and the aspects of a leader’s identity that our education programs should cultivate. At best, we have glimmers and intuitions about these issues.

We might consider speculating about a complete redesign of military schools. Recent examples of redesigned engineering schools are encouraging.²³ The enthusiasm of their graduates is a signal that a bottom-up redesign of engineering curricula might win support and be successful. Given the military’s strong focus on engineering, the military service academies at West Point, Annapolis, and Colorado Springs might well explore experiments in a similarly holistic redesign of their engineering curricula.

However, proposals for complete redesign are likely to meet considerable resistance. We favor the less disruptive approach of experiments with modules on transformative practices that can be added to existing programs. One such possibility comes from Frank Barrett who describes how to teach the skill of improvisation to business and executive students using lessons from jazz masters.²⁴ He proposes an “improvising organization” in which leadership tasks are approached as experiments, routine is deliberately broken in order to encourage serendipity, and everyone has a chance to solo. He suggests that minimal structure and control might maximize autonomy and flow. The WEST program, described in the next section, is another example of a simple educational experiment in cultivating new leadership sensibilities.

The WEST Experiment

Working Effectively in Small Teams (WEST) is a four-month course offered by Pluralistic Networks, Inc. It focuses on effective leadership of small teams. Using a Skype-like group communication tool called Zoom, students participate from global locations, spending approximately three to four hours each week on coursework. The success of this program flows from its careful attention to how students use language and how that affects their moods and willingness to trust each other. The WEST course was designed by Dr. Fernando Flores, who earned a PhD in Philosophy at University of California, Berkeley, and in a long career became an international business leader, entrepreneur, former senator in Chile, and world-recognized leader in language as a means for communication, coordination, and action. WEST applies education principles developed by Flores and his colleagues in Chile to the issues of small teams.²⁵

Flores designed WEST to help people develop and practice skills needed to work in “pluralistic networks”—participants from different backgrounds and cultures must coordinate as members of diverse teams to create meaningful action.²⁶ A recent WEST class included participants from public and private organizations in the United States, Canada, Mexico, Argentina, Chile, Germany, Australia, Singapore, and Nigeria. They were public school administrators and teachers, artists, personal coaches, military officers, financial executives, cyber experts, and professors. Several held senior positions in their organizations as Presidents, CEOs and Vice Presidents; others were mid-level managers and individual entrepreneurs. This emphasis on pluralistic networks intrigued us because military joint international operations aspire to be effective in exactly that type of environment.

In this experiment, we sponsored a team consisting of six U.S. military officers—a Navy and a Coast Guard Lieutenant Commander, a Marine Captain, a retired Navy Captain and retired Navy Commander, and an Army reserve Major as an observer. They were part of a 30-person class led by Flores. They were initially randomly divided into teams of five. For the first two months, each military member was part of a mostly civilian team; for the second two months, the military members formed their own team.

In weekly assignments, teams read and discussed articles and received initial guidance for planning team operations to be conducted inside the platform of the commercial virtual fantasy game World of Warcraft (WoW). WoW is accessible internationally for under \$15 per month and has about 12 million subscribers worldwide. Much like a flight simulator, the WoW virtual world places teams of participants in “quests” that provoke the same moods and reactions as in the real world. WEST uses WoW as a virtual laboratory in which teams experienced challenges with coordination and communication in fast-paced “battles” needed to complete quests. When the challenge was done, each team debriefed in an after-action session and followed up with short written reflections on what they experienced and learned. A coach accompanied them to observe their in-game

actions and conversations and to help them make effective use of the language distinctions in their group debriefings.

An important part of their work together was coordination, not only for in-game operations but also for the team meetings. The basic language element for coordination is Conversations for Action (CFA).²⁷ Team members were guided through weekly exercises in which they practiced CFAs with explicit declarations, requests, offers and commitments.

A key part of team coordination consists of making assertions (verifiable facts) and exchanging grounded assessments (opinions backed by relevant assertions) about each teammate's performance. The coaches repeatedly emphasized that the assessments should be aimed to help the team achieve its goals—not as personal criticisms or attacks. Many found this honesty tough at first and diluted their assessments with unnecessary verbal filters. Yet, it soon became apparent to all teams that their effectiveness depended on each member's skill in making and receiving these honest assessments. The challenge of doing this well was compounded when team members were from different cultures and backgrounds.

In addition to providing an inexpensive platform for conducting team operations without a physical meeting, WoW evokes participant experience of “being a beginner.” Almost all of them are beginners in WoW. Senior people in organizations have often forgotten what it is like to be a beginner. Allowing oneself to be a beginner in an unfamiliar environment and learn how to act effectively is an asset in unpredictable environments. Practicing being a beginner also helps develop a sense of empathy for others, useful as leaders build diverse teams that include members with fresh perspectives.

The participants also joined 90-minute, bi-weekly sessions with Flores held via Zoom. These sessions featured short conversations with each participant about their experiences and provided just-in-time learning opportunities based on participants' questions and concerns.

Preliminary findings include:

- ◆ The challenges and quests within the game of WoW elicit various moods and emotions, which can be discussed in terms of how they promoted or hindered working together.
- ◆ Core skills for teams working in new, uncertain and emerging environments can be developed and practiced in virtual environments.
- ◆ Leadership skills can develop across distance. A common belief is that meeting “in-person” is the only way to develop leadership skills. Developing leadership practices in virtual environments is valuable, especially for organizations where geographically dispersed teams are the norm.
- ◆ Participants re-experienced what it is like to be a beginner—an unusual opportunity for developing empathy among seasoned professionals.
- ◆ Participants practiced building trust in teams. Many realized they often talk about the importance of trust but have little sense of what conversations actually contribute to creating a sense of trust.

CULTIVATING A NEW SENSIBILITY

- ◆ Participants built relationships with each other. This helped develop a sense of commitment among team members to provide honest assessments and stick with the course.
- ◆ Participants created shared understanding by practicing new skills together, further contributing to their mutual trust and team effectiveness.
- ◆ Participants had fun. Their enjoyment of their teams and projects kept them engaged week by week for the full four months.
- ◆ Participants saw broader value for the course as they considered opportunities to provide the course within their own military services and communities.
- ◆ Participants learned to operate across organizational and cultural boundaries.
- ◆ Commercial virtual games can be a very cost effective method for training and is much cheaper than organization-specific games.
- ◆ The course effectively cultivated several aspects of network age leadership including innovation, navigation, and appropriation.

Based on the students' positive recommendations, we set up a second experimental team for WEST sponsored by the Marine Reserve Forces Command. This group had to blend two different cultures—full-time, active duty Marines and reservists who serve one active weekend a month.

Roles of Technology in Cultivating Leadership Sensibilities

In the past five years, there has been a marked increase of discussion about technology advances in learning environments. For example, Massive Open Online Courses (MOOCs) use internet-based platforms to make university lecture courses available free around the world and to employ machine learning to customize its responses to each individual student. They are completely automated learning environments (ALEs). An up-and-coming technology is the Online Competency Based Module (OCBM), which focuses on teaching and testing students for specific skills that make up a domain, and then issuing a certificate of competency when the student passes all required demonstrations. The Clayton Christensen Institute promotes this technology and tracks dozens of private companies offering it as an alternative to a university degree for those seeking employment.²⁸ The OCBM idea is older than MOOCs—it traces back to prediction by Lewis Perelman that a new mode of nonlinear learning, which he called hyperlearning, would gradually become more dominant than the linear syllabi of traditional courses.²⁹

What might the role of automated learning environments be in the kind of education we are discussing here? The philosophy of Hubert Dreyfus gives good guidance. Dreyfus is well known for introducing a learning hierarchy in which people grow through the stages beginner, advanced beginner, competent, proficient, expert, and master in their domains. In *On the Internet*, Dreyfus inquired

how far up the hierarchy an ALE can take a student.³⁰ He argued that ALEs are in effect education expert systems aiming to automate the work of master teachers—and no expert system has ever helped students become more than competent in their fields. The reason is that ALEs are rule-based systems that train conformity to the rule sets in which they were conceived. They are extremely good at training people to become advanced beginners and entry-level competent because those skill levels are highly dependent on rules.

Thus, ALEs could be very useful at teaching the basics of the leadership traits listed earlier. For example, they could provide videos, reading materials, and exercises to help beginners learn basics of coordination. Coordination results from people making commitments to each other. There are only five kinds of commitments—requests, promises, assertions, assessments, and declarations. We have found that most students are not aware of these basic distinctions. When they practice working with them they develop a competence that enables them to bring more projects to completion, detect why projects are falling behind and take corrective action, and develop credibility and trust. We have found that a learning module on coordination is transformative: it helps people in all aspects of their lives, not just in their leadership. We believe it is possible to design ALE technology for a coordination basics module. We suspect that there are modules of basics for supporting leadership development in each of the leadership identities listed earlier.

However, the military asks its senior leaders to go beyond basics and develop a skill level of proficiency or higher. Dreyfus advises that ALEs are not up to the task of bringing people to proficient, expert, or master skill levels. Senior leaders work in environments where the rule sets are constantly changing, whereas an ALE is designed within a given rule set. Master teachers foster learning environments with traditional practices of apprenticeship, conversation, immersion, mentoring, and coaching—practices that cannot be automated. Our challenge in military education is to go beyond technologies when seeking the higher skill levels of leadership.

With a team of colleagues, Dreyfus is featured in a movie, *Being in the World*, which shows six masters from diverse fields and proposes language that allows us to talk about what they do and how they became masters.³¹ It is hard to go away from this movie with any impression that any automated learning environment can possibly cultivate mastery.

Conclusions

The spread of digital technology is transforming jobs, the world, the way we see the world, and the way we interact effectively in the world. The emerging world is more like a constantly-changing ecosystem than a distributed supercomputer built from the network of machines. When a new practice spreads through the system in

exponential growth, the disruptions often seem like avalanches to the large groups of the network whose identities are swept away.

Our future leaders will need to engage and resolve exceedingly complex and unpredictable security challenges. General Dempsey has warned:

Global disorder has significantly increased while some of our comparative military advantage has begun to erode. We now face multiple, simultaneous security challenges from traditional state actors and trans-regional networks of sub-state groups—all taking advantage of rapid technological change.³²

Complexity and rapid change, he says,

characterize a strategic environment in which individuals and groups have access to more information than entire governments once possessed, and can swiftly organize and act on what they learn, sometimes leading to violent change.³³

The National Military Strategy calls for learning environments that can “build creative, adaptive professionals who are skilled at leading organizational change while operating in environments of great complexity and uncertainty.”³⁴

In this chapter, we described the skills needed to move effectively in this emerging, shifting, unpredictable world. The skills encompass new ways of thinking and interpreting. They embody new sensibilities about people’s moods and possibilities in fast-changing networks. They cultivate moods that facilitate actions. They define a new way of being in and navigating an uncertain and unpredictable world. The new way is not obvious from the machine age in which we grew up and designed our education systems.

We outlined six essential aspects of a leadership identity we think are needed in the new world. We are learning and refining these distinctions through ongoing conversations with an international group and are extracting the ideas that are most relevant for our situation in military education. The need for these skills stems from a change in human dynamics as our world transforms with the help of dramatic advances in digital technology.

At the Naval Postgraduate School’s Cebrowski Institute, we have been exploring how to create new learning experiences to meet these needs. We are encouraged by an experiment with WEST that immerses students into practice for effective small teams using virtual worlds. We speculate that by adding a few well-designed WEST-like modules to existing military curricula, we could take significant steps toward the desired transformative effect.

The emerging network age presents profound implications for global security and for the sensibilities that we can cultivate as we design new approaches to military education. We welcome collaborators in our explorations and experiments as we seek to better understand the unfolding of a new era.

Acknowledgments

We are grateful to John Arquilla, Frank Barrett, Douglas Bissonette, Fred Disque, Hubert Dreyfus, Fernando Flores, Pablo Flores, David Goldberg, Stanley McChrystal, Scot Miller, B. Rousse, and Mitzi Wertheim for conversations and inspirations that helped shape the framework and proposals discussed here. ☞

Notes

1. Joint Chiefs of Staff, *National Military Strategy 2015*, accessed 26 August 2015, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.
2. Stanley McChrystal, Tatum Collins, David Silverman, and Chris Fussell, *Team of Teams: New Rules of Engagement for a Complex World* (Portfolio, 2015), Kindle Location 380.
3. Christopher Hughes, *War on Two Fronts: An Infantry Commander's War in Iraq and the Pentagon* (Philadelphia, PA: Casemate, 2007).
4. Tricia McDermott, "A Calm Colonel's Strategic Victory," *CBS News*, 15 March 2006, accessed 26 August 2015, <http://www.cbsnews.com/news/a-calm-colonels-strategic-victory/>.
5. Zachary Staples, Commander, US Navy, in personal discussion with the authors 29 August 2015 at Naval Postgraduate School, Monterey, CA.
6. Albert Einstein, BrainyQuote.com, Xplore Inc., 2015, accessed 21 September 2015, <http://www.brainyquote.com/quotes/quotes/a/alberteins121993.html>.
7. Reinald Normand, *Innovation Squared*, 2015, accessed 26 August 2015, <http://www.innovation2.com>. An e-book about the exponential growth of digital technologies and the new markets they create.
8. Peter Denning and Robert Dunham, *The Innovator's Way* (Cambridge, MA: MIT Press, 2010), Kindle Location 63.
9. Denning and Dunham, *The Innovator's Way*, Kindle Location 4225; Fernando Flores, "Report of Consejo Nacional de Innovación para la Competitividad," *Surfing Towards the Future: Chile on the 2025 Horizon*, 2013, accessed 26 August 2015, <http://chile-california.org/surfing-towards-the-future-in-to-counselor-fernando-flores-vision-for-innovation>; Peter Denning and Fernando Flores, "Emergent Innovation," *Communications of ACM* 58, 6 (June 2015), 28–31.
10. Everett Rogers, *Diffusion of Innovations* (New York, NY: Free Press, 1962, 5th edition 2003).
11. Arthur K. Cebrowski, Vice Admiral, U.S. Navy and John H. Garstka, "Network Centric Warfare," *U.S. Naval Institute Proceedings Magazine* 124/1/1 (January 1998): 139.
12. McChrystal et al., *Team of Teams: New Rules of Engagement for a Complex World*, Kindle Location 3887.
13. John Arquilla, *Worst Enemy: The Reluctant Transformation of the American Military* (Chicago, IL: Ivan R Dee, 2008).
14. John Arquilla, *Insurgents, Raiders, and Bandits: How Masters of Irregular Warfare Have Shaped Our World* (Chicago, IL: Ivan R Dee, 2011); McChrystal et al., *Team of Teams: New Rules of Engagement for a Complex World*, Kindle Location 380.

15. Flores, "Report of Consejo Nacional de Innovación para la Competitividad."
16. McChrystal et al., *Team of Teams: New Rules of Engagement for a Complex World*, Kindle Location 3984.
17. Ubiquity Staff, "Arthur K. Cebrowski on Transformation of Defense" *Ubiquity*, ACM Digital Library, August 2004, accessed 27 August 2015, <http://ubiquity.acm.org/article.cfm?id=1022362>.
18. Flores, "Report of Consejo Nacional de Innovación para la Competitividad"; Denning and Flores, "Emergent Innovation," 28–31.
19. Denning and Flores, "Emergent Innovation," 28–31.
20. Fernando Flores and Maria Letelier, *Conversations for Action and other Essays* (Charleston, SC: Create Space Independent Publishing Platform, 2012).
21. Denning and Flores, "Emergent Innovation," 28–31.
22. McChrystal et al., *Team of Teams: New Rules of Engagement for a Complex World*, Kindle Location 136.
23. David Goldberg and Mark Somerville, *A Whole New Engineer* (Douglas: Three Joy, 2014); Peter Denning, "The Whole Professional," *Communications of ACM* 57, 12 (December 2014), 24–27.
24. Frank Barrett, *Yes to the Mess: Surprising Leadership Lessons from Jazz* (Boston, MA: Harvard Business Review Press, 2012), Kindle Location 3193.
25. Flores, "Report of Consejo Nacional de Innovación para la Competitividad."
26. Peter Denning, Fernando Flores, and Peter Luzmore. "Orchestrating Coordination in Pluralistic Networks," *Communications of ACM* 53, 3 (March 2010), 30–32; Peter Denning, Fernando Flores, and Gloria Flores, "Pluralistic Coordination," in *Business, Technological, and Social Dimensions of Computer Games*, eds. Maria Manuela Cruz-Cunha, Vitor Hugo Carvalho, Paula Tavares (Hershey, PA: IGI Global, 2011), 416–431.
27. Flores and Letelier, *Conversations for Action and other Essays*.
28. Clayton Christenson Institute, accessed 26 August 2015, www.christenseninstitute.org; Peter Denning, and Daniel Menascé. The website of the Hyperlearning center (1993–2000), which began as the Center for the New Engineer at George Mason University, is archived at <http://denninginstitute.com/oldcne-home-archive.html>. Accessed 26 August 2015.
29. Lewis Perelman, *School's Out* (Avon, 1992).
30. Hubert Dreyfus, *On the Internet* (London: Routledge, 2001), 33–49.
31. *Being in the World*. Movie (81 minutes) directed by Tao Ruspoli and produced by Mangusta Productions. (Documentary video released 2013), accessed 26 August 2015, <http://beingintheworld-movie.com>.
32. Joint Chiefs of Staff, *National Military Strategy 2015*, accessed 26 August 2015, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.
33. Joint Chiefs of Staff, *National Military Strategy 2015*, accessed 26 August 2015, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.
34. Joint Chiefs of Staff, *National Military Strategy 2015*, accessed 26 August 2015, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.

Upcoming Conferences of Note

April 5–9, 2019: Higher Learning Commission Conference

Chicago, Illinois · <https://www.hlcommission.org/Programs-Events/conference.html>

The theme of the 2019 Higher Learning Commission Conference is “Roadmaps for Student Success.” The conference will provide forums for discussion of innovative programming and support services that meet students where they are and help them achieve success.

June 6–9, 2019: Adult Education Research Conference

Buffalo, New York · https://newprairiepress.org/aerc/conference_events.html

The Adult Education Research Conference (AERC) is an annual North American conference that provides a forum for adult education researchers to share their experiences and the results of their studies with students, other researchers, and practitioners from around the world.

August 8–11, 2019: American Psychological Association Convention

Chicago, Illinois · www.apa.org

The American Psychological Association (APA) is the leading scientific and professional organization representing psychology in the United States, with more than 115,700 researchers, educators, clinicians, consultants, and students as its members.

October 8–11, 2019: American Association for Adult and Continuing Education

St. Louis, Missouri · <http://www.aaace.org/page/2019SOE>

The American Association for Adult and Continuing Education’s (AAACE) annual conference is one of the nation’s largest forums dedicated to adult and continuing education. AAACE is the publisher of three leading adult education journals, including the *Adult Education Quarterly*, *Adult Learning*, and the *Journal of Transformative Education*.

October 14–16, 2019: Association for Continuing Higher Education

Denver, Colorado · <http://www.acheinc.org/>

The Association for Continuing Higher Education (ACHE) is dedicated to promoting lifelong learning and excellence in continuing higher education. As an organization of colleges, universities, and individuals, we encourage professional development, research and exchange of information for its members and continuing higher education as a means of enhancing and improving society.

October 14–16, 2019: Association of the United States Army Annual Meeting and Exposition

Washington, D.C. · <http://ausameetings.org/2019annualmeeting/>

The Association of the United States Army’s (AUSA) annual meeting is the largest land power exposition and professional development forum in North America. The annual meeting is designed to deliver the Army’s message by highlighting the capabilities of Army organizations and presenting a wide range of industry products and services. AUSA accomplishes this task throughout the entire event by providing informative and relevant presentations on the state of the Army, panel discussions and seminars on pertinent military and national security subjects, and a variety of valuable networking events available to all that attend.

Author Submission Guidelines

Manuscripts should contain between 3,500 to 5,000 words in the body text. Submissions should be in Microsoft Word, double-spaced in Courier New, 12-point font.

Manuscripts will use editorial style outlined in *The Publication Manual of the American Psychological Association*, sixth edition. References must be manually typed. (The automatically generated references employed by Microsoft Word have proven to be extremely problematic during conversion into final layout format for publication, causing delays and additional rekeying of material.) Manuscripts that arrive with automated references will be returned to the authors for compliance with endnote submission requirements. Bibliographies will not be used and should not be submitted with manuscripts.

Submissions must include a one-paragraph abstract and a biography not to exceed 175 words in length for each author. Such biographies might include significant positions or assignments, notes on civilian and military education together with degrees attained, and brief allusions to other qualifications that establish the bona fides of the author with regard to the subject discussed in the article. Do not submit manuscripts that have been published elsewhere or are under consideration for publication elsewhere.

Authors are encouraged to supply relevant artwork with their work (e.g., maps, charts, tables, and figures that support the major points of the manuscript. Illustrations may be submitted in the following

formats: PowerPoint, Adobe Illustrator, SVG, EPS, PDF, PNG, JPEG, or TIFF. The author must specify the origin of any supporting material to be used and must obtain and submit with the article permission in writing authorizing use of copyrighted material. Provide a legend explaining all acronyms and abbreviations used in supplied artwork.

Photo imagery is discouraged, but will be considered if it is germane to the article. Authors wanting to submit original photographs need to do so in JPEG format with a resolution of 300 DPI or higher. Each submitted photo must be accompanied by a caption identifying the date it was taken, the location, any unit or personnel in the photo, a description of the action, and a photo credit specifying who took the photo. Captions should generally be between 25 and 50 words.

The *Journal of Military Learning* (*JML*) will not consider for publication a manuscript failing to conform to the guidelines above.

The editors may suggest changes in the interest of clarity and economy of expression; such changes will be made in consultation with the author. The editors are the final arbiters of usage, grammar, style, and length of article.

As a U.S. government publication, the *JML* does not have copyright protection; published articles become public domain. As a result, other publications both in and out of the military have the prerogative of republishing manuscripts published in the *JML*. ❧

Call for Papers

The *Journal of Military Learning (JML)* is a peer-reviewed semiannual publication that supports efforts to improve education and training for the U.S. Army and the overall Profession of Arms.

We continuously accept manuscripts for subsequent editions with editorial board evaluations held in April and October. The *JML* invites practitioners, researchers, academics, and military professionals to submit manuscripts that address the issues and challenges of adult education and training, such as education technology, adult learning models and theory, distance learning, training development, and other subjects relevant to the field. Submissions related to competency-based learning will be given special consideration.

Submissions should be between 3,500 and 5,000 words and supported by research, evident through the citation of

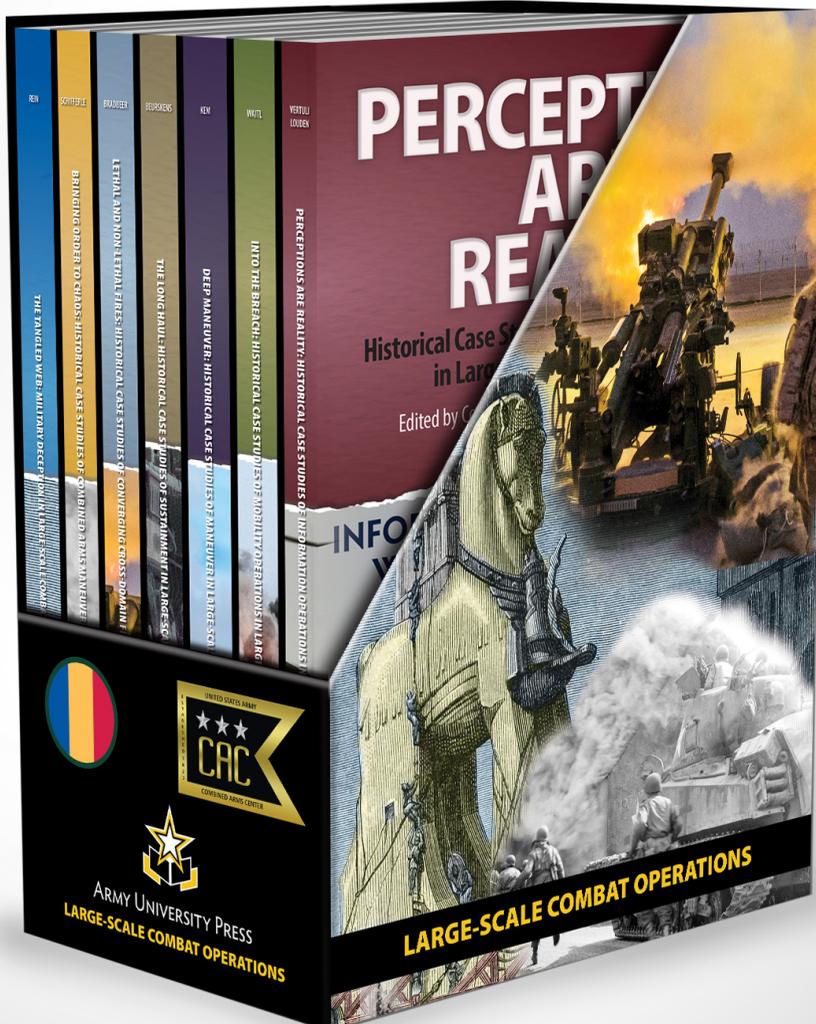
sources. Scholarship must conform to commonly accepted research standards such as described in *The Publication Manual of the American Psychological Association*, 6th edition.

Do you have a “best practice” to share on how to optimize learning outcomes for military learners? Please submit a one- to two-page summary of the practice to share with the military learning enterprise. Book reviews of published relevant works are also encouraged. Reviews should be between 500 to 800 words and provide a concise evaluation of the book.

Manuscripts should be submitted to usarmy.leavenworth.tradoc.mbx.journal-of-military-learning@mail.mil by 1 April and 1 October for the October and April editions respectively. See previous page for detailed author submission guidelines. For additional information call 913-684-9331 or send an email to the address above. ✉

LARGE-SCALE COMBAT OPERATIONS

The Army University Press is proud to present the complete seven-volume Large-Scale Combat Operations Historical Case Study book set. The downloadable version of the book set is available at <https://www.armyupress.army.mil/Books/Large-Scale-Combat-Operations-Book-Set/>. Three additional volumes to the Large-Scale Combat Operations Historical Case Study series will be coming soon!





ARMY UNIVERSITY PRESS