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Brig. Gen. Scott L. Efflandt, U.S. Army
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Welcome to the second edition of the *Journal of Military Learning*. I have the privilege of inheriting the great work done by Maj. Gen. John Kem, who I replaced as the Army University provost in September.

Now, perhaps more so than any time in recent Army history, we face peer challengers who seek to reshape the world order in asymmetrical and unpredictable ways. Our single biggest deterrent to thwart malign influence abroad is producing agile and innovative leaders who can think their way through these challenges and, if necessary, fight and win. I view the *JML* as a tool to bring current adult learning, writing, and research from the field for the development of leaders.

Our purpose is to imbue soldiers and Army civilians with the critical-thinking skills that enable them to succeed in the most ambiguous conditions. The formula is simple and time-proven; better-educated soldiers and leaders increase force readiness, and force readiness translates into mission success. We seek to improve our forces readiness through increased rigor and efficiency in all our training and educational endeavors by adopting, and promulgating throughout the Army's educational enterprise, the most cutting-edge techniques available. This is the most efficient way for us to prepare our soldiers for life on and off the battlefield.

The peer-reviewed articles in this edition range from how we might utilize emerging theories to enhance cognitive performance, to advocating for a competency-based approach in Army education. It is via hard work, resulting in creative articles like these, which further us in our mission to examine and implement creative learning innovations.

I encourage educators, researchers, and military professionals, both uniformed and civilian, to submit articles to this journal. Only through challenging old paradigms, examining and evaluating alternatives, and then incorporating the very best will we be able to deliver the education and training which our soldiers and civilian professionals deserve, and which an increasingly complex world demands. A detailed call for papers and the submission guidelines can be found at http://www.armyupress.army.mil/Journals/Journal-of-Military-Learning. ☙

Answering the Hottest Question in Army Education
What Is Army University?

Maj. Gen. John S. Kem, U.S. Army
Brig. Gen. Eugene J. LeBoeuf, U.S. Army
James B. Martin, PhD

Abstract

The most common question heard by senior members of Army University is always, "What is Army University?" The newest education institution in the U.S. Army was created to unify the training and educational institutions of the Army, making the large learning organization more effective and efficient for its soldiers, bringing together thirty-seven different institutions in twenty-three states, with an annual student throughput of five hundred thousand. Encompassing two different degree-producing schools, the University seeks to improve opportunities for soldiers in credentialing and licensure, along with exploring the ability to grant a limited number of military-focused undergraduate degrees. Just as critical, the University has the responsibility to grow relationships with civilian learning partners in the educational and corporate communities to aid active Army, National Guard, and Army Reserve soldiers while in service and in thousands of cities and towns throughout the United States.

On 9 April 2011, Mark Milliron stepped to the podium as a plenary speaker at the annual meeting of the Higher Learning Commission in Chicago. He was there representing the Gates Foundation, and as part of his presentation, he introduced the phrase "end-to-end learning pathway." Milliron was talking about a continuum in American education that would join secondary schools, community colleges, and our university system into a single pathway to best serve American

students and American society. While this type of pathway proved to be nearly impossible across countless local school districts, fifty different state bodies, and a multitude of colleges and universities, it was an idea that resonated with the U.S. Army. While the civilian version of such a multischool, multistate pathway proved elusive, with active Army, Army Reserve, and National Guard soldiers geographically spread across the Nation and overseas, the idea of a holistic learning pathway continuum as the central foundation of the Army learning community is not only intriguing, it is essential. Properly organized, the Army can enable and manage the common learning pathway for all service members, whether they are enlisted or commissioned officers, and whether they will serve for three years or for thirty.

A pathway similar to Milliron's idea found its way into the Army learning lexicon as the Career-Long Learning Continuum originally laid out in the *U.S. Army Learning Concept* in 2011.[1] Recognizing that each soldier took a learning pathway tied largely to his or her rank and specialty, the Army saw the possibility of creating a process by which the training and education required could be built in a sequential and progressive fashion. This process would combine the best of technical and military specialty education with the necessary critical and creative thinking skills that are so important in any endeavor. Though our enlisted soldiers generally enter service without an undergraduate degree, our officers almost universally hold at least an undergraduate degree, and our civilian employees enter at many different points with many different levels of educational achievement. The Army has the ability to build processes that meet the needs of everyone and contribute to everyone's intellectual achievement.

A major challenge inside the Army to such a learning continuum framework is the relationship between training and education. By far, the largest portion of the early part of an Army career is consumed with specific training for specific skills. At the training end of the continuum, the Army has to prepare truck drivers to drive trucks and combat medics to take care of wounded soldiers. It must train infantry and artillery soldiers to execute their combat tasks and work cohesively as a team. It must give young officers the troop-leading skills necessary to effectively lead their units. At the educational end of the continuum, the Army must improve intellectual habits of mind—commonly identified as the abilities to think critically and creatively—within an ethical framework, to help prepare Army leaders for the uncertainty and complexity of future missions around the world.

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The first part of this learning continuum is similar to the training requirements of the skilled trades outside the military world. Army truck drivers receive training and education similar to that received at a community college truck-driving academy, with the major difference likely being that the Army and the soldier invest more time than the civilian student due to the need to prepare Army drivers for much more diverse terrain and road conditions. In the same way, Army welders are well trained in their skill set, much as the student at an equivalent civilian trade school.

A major identified difference is that while the civilians can work toward a specific career certification, the Army student often cannot. While Army training matches some of the best civilian training in the world, it often does not result in the same trade-based certifications as its civilian counterparts. Similarly, many of the Army's enlisted soldiers strive to improve themselves educationally, only to be frustrated by their inability to coalesce their coursework into an identifiable degree from an accredited college or university.

A web of diverse state regulations and certifying bodies frustrates the training portion of the continuum, while continuing problems caused by repeated deployments, short-term assignments, and transferability of academic credit from one institution to another frustrate and often inhibit educational outcomes and successful completion.

What Is Army University?

In 2015, the U.S. Army Combined Arms Center at Fort Leavenworth, Kansas, examined the landscape of training and professional military education in the Army and perceived an opportunity. The training and education portions of the enterprise were related but functioned separately, and while effective in their individual functions, they were not as efficient as they could have been. Learning institutions at all levels were performing their tasks well, but the structure to make the Career-Long Learning Continuum a reality simply did not exist. Striving to be effective, the two critical portions of the enterprise missed out on opportunities to improve efficiency and to collaborate with civilian institutions in a way that would meet the challenges its soldiers were facing. The Army had a history of excellence, but it needed to figure out how to leverage the best of the Army training and educational efforts with the dynamic opportunities in the U.S. public and private higher education arena. The solution identified was to create a single entity within the Combined Arms Center, responsible for governing both the training and education activities.

Army University, also located at Fort Leavenworth, was chartered by then Secretary of the Army John M. McHugh and then Chief of Staff of the Army General Ray Odierno on 7 July 2015. Its stated mission is to educate and develop Army professional leaders who are ready to fight and win in today's complex world, are

prepared to shape solutions for tomorrow's battlefield, and are armed to succeed for life.[2] Encompassing an expansive training base, with thirty-seven separate learning institutions across twenty-three states, the University is responsible for training and educating more than five hundred thousand students in any given year. The extent of the physical range of the University is borne out in the fact that it manages learning activities in the footprint of all of the regional accrediting bodies in the United States.

Most consist of institutions that house both training and education activities but are not degree producing—more in line with what civilian institutions would consider to be continuing education. While the majority of its students are involved in continuing education activities, the University does house two regionally accredited entities, the graduate degree-producing Command and General Staff College (CGSC) and the associate degree-producing Defense Language Institute (DLI). The CGSC, which is located at Fort Leavenworth, is accredited by the Higher Learning Commission, while DLI, located in Monterey, California, is accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges.

What Is Army University Intended to Do?

The Army's training and education system exists to create professionals who have the ability to operate in complex environments that feature a wide range of allies and adversaries and are able to prevent, shape, or (when necessary) fight and win the Nation's wars. The extended conflicts in Afghanistan and Iraq brought clarity to the need for soldiers and an Army civilian workforce to be intellectually agile and able to adapt to ever-changing conditions.

While the Cold War had allowed the Army to focus on a single enemy in a single region, today's Army must be prepared to excel in any corner of the world against an ever-increasing variety of foes. Senior Army leaders identified the need for intellectual improvement to meet this mission and provided a road map with the publication of the *U.S. Army Learning Concept for 2015*. In many ways, Army University is the next step toward achieving the goals of the *Army Learning Concept*. The concept stresses the habits of mind mentioned earlier, seeking to create an Army learning system that would improve and optimize intellectual performance. While the Army must continue to have the best technical and combat training in the world, it also needs to continue to improve its soldiers' abilities in respect to these habits of mind. Included in this focus on creating intellectually more agile, adaptive, and innovative service members was the ongoing responsibility to create soldiers who are lifelong learners, always continuing to improve themselves in their profession. Thus, Army University, in effect, is charged with leading a culture shift in the way the Army approaches learning from an institutional, school-house-based approach to a continuum of training and education experiences spanning classrooms, the workplace, and self-directed learning.

Analyzing the need to improve these intellectual habits of mind while continuing to maintain a world-class training base brought the university to focus on multiple avenues to meet the challenge. Most educators agree that the most important factor to improve student learning is increasing the quality of instructors facilitating the learning environment, followed closely by improving the quality and rigor of the curricula. Army University set out to build on the Army's already extensive faculty and curriculum development efforts in order to create and support a world-class faculty dedicated to military learning.

The creation of the Center for Teaching and Learning Excellence (CTLE) at Fort Leavenworth served to integrate and synchronize faculty and curriculum development in a single enterprise institution to aid the various schools and colleges in these two areas. CTLE does not house all of the Army's faculty and curriculum developers but serves as the hub that facilitates the program within these communities of practice. Working with faculty and curriculum developers across the learning enterprise, CTLE develops programs that support all of the University's various schools and colleges.

While the Army considers faculty and curriculum development the most critical aspect of a learning environment, the physical and digital components of such an environment must also be addressed. The Army has, for the past decade, invested in learning facilities and data pipelines that would be the envy of all but the wealthiest educational institutions. With this excellent foundation, Army University continues to focus on how we can further improve and innovate to meet future learning challenges.

While always mindful of cybersecurity concerns, the University champions the Army's need to make their learning platforms more easily available to their students and viable on the mobile devices that are so much a part of today's students' lives. It is important to remember that the Army's students are reflective of the same generational themes as their counterparts in the civilian world. As such, they are exposed to today's digitally connected world just as everyone else in our society. To meet their needs and to stay at the forefront of educational technology requires that Army University focus significant energies and resources on this issue.

Another key to Army University's success is focused on creating an environment in which Army schools and colleges are brought in line with recognized educational best practices as represented in various accrediting and credentialing bodies. These groups have for years laid out best practices and standards that are the hallmark of high-quality training and education. Within the University, the Army has created an office that is focused on regional and national accrediting and certification standards. This group of professionals will spend the next few years identifying the correct standards to apply to various Army training and educational programs and building relationships to effect change in Army practices. The end result will be improved recognition of soldiers' learning through professional credentialing and furthering opportunities for attainment of academic credit.

All quality educational institutions have a focus on improving the body of knowledge representative of its disciplines. The Army's professional body of knowledge is the domain of Army University and, with the assistance of the Army University Press, the University has the task to improve the quantity and quality of scholarship directed at the profession of arms. In addition to its focus on national security and military scholarship, Army University is well positioned to make significant contributions and help drive and proactively ride at the forefront of the dynamic learning curve of other fields of study, to include leadership and adult education. The Center for Army Leadership, though not a part of the University, has long been a leader in the study of leadership and is closely aligned with the University and various leadership teaching departments throughout the Army to improve the Army's contribution to the discipline.

The field of adult education, the theoretical foundation of the Army's faculty development efforts, is an area in which CTLE has been tasked to add scholarship and expanded educational collaboration. Most of the members of the faculty development portion of CTLE possess adult educational degrees and a section of CTLE is dedicated to contributing to the research in adult education and returning that scholarship to the Army's classrooms.

In order to make these improvements, Army University is tasked with creating new business practices to implement policies and new governance models to improve assessment practices and learning performance. Organized with a policy and guidance responsibility under the vice provost for learning systems and academic responsibilities under the vice provost for academic affairs, the University is structured much like other educational institutions to provide the best possible governance of the very large U.S. Army enterprise learning structure outlined previously.

Focused on improving the educational preparation of soldiers along the Career-Long Learning Continuum and creating an Army of lifelong learners will require Army University to create partnerships with a wide variety of civilian entities. Whether state governments, corporate partners, or educational institutions, the University must pursue relationships that will improve its ability to secure what soldiers require to improve throughout their Army career. Making the most of Army opportunities is critical to the development of soldiers, but the creation of quality partnerships will allow soldiers to develop beyond what is possible with the Army alone.

How Will Army University Interface with Civilian Educational Institutions and Other Partners?

Army University is responsible to Army leadership to identify and create the necessary relationships to move Army learning and soldiers forward in all fields. Credentialing programs represent one of the first focal areas addressed by Army University, which seeks to provide soldiers in each military occupational specialty the opportu-

nity to link their specialty to civilian credentialing such as licenses and certification. Such programs cover a wide variety of specialties, ranging from commercial drivers' licenses for Army vehicle drivers to national certification for Army welders, and involve certification authorities in state governments, continuing education units in various community colleges, and private certification authorities that represent the communities of practice they monitor. These trade certifications represent preparation that will make these soldiers better while in service, but will also follow them into civilian life and prepare them for a productive and prosperous career when they leave service. They also can concurrently benefit both military and civilian careers for those in the U.S. Army National Guard and Reserve.

Much has been made of Army University and whether or not it will become an engine for the creation of degrees to be awarded by the Army. Currently, Army University schools grant both master's and associate's degrees as identified earlier. Plans are being matured to potentially create a path for select soldiers to earn baccalaureate degrees in specifically Army-related fields. What the University does not intend to do is create a full degree program and offer general education courses to compete with civilian institutions.

The Army University program, as currently conceived, might include a degree completion program focused on senior noncommissioned officers and granted through the CGSC. It would require cooperation from colleges and universities throughout the Nation to provide general education opportunities and lower division courses that can be used as the foundation for the degree completion program. Prior learning assessment, through partnerships with organizations such as the American Council on Education and the Council for Adult Experiential Learning, will also be necessary to aid soldiers in pursuing their undergraduate degrees. This program will not take students away from Army partners but increase soldiers' needs for additional credits in their educational programs. The University is studying the best practices in competency-based education across the country in order to identify those well-suited to the Army's needs. The flexibility of competency-based education, whether in direct assessment or hybrid mode, has great potential to serve soldiers' educational and professional needs. Additional graduate programs with civilian partners are always a possibility, as the CGSC has created such programs in partnership with local universities for many years. Currently, degrees in various business disciplines, adult education, security studies, supply chain management, and interagency studies are offered by civilian universities at Fort Leavenworth, in addition to the college's Master of Military Arts and Sciences.

Beyond certifications and degrees, Army University has sought out partnerships with educational institutions and corporate learning organizations that will allow it to identify and incorporate the best new innovations in classroom and workplace learning to move the Army along as a learning organization. Opportunities such as the Learning Innovation Laboratory at the Harvard Graduate School of Education provide the University with a platform to partner with the best America's learning community has

to offer. These public-private partnerships will sustain the Army's learning innovation into the future and allow the Army to intellectually surpass its adversaries for decades to come. The creation of Army University is not, and will never be, a threat to civilian education institutions. On the contrary, it represents the Army's best efforts to improve its learning environment throughout its training and education enterprise by becoming more efficient at our core competencies. It will improve what we do best and create strong partnerships to take advantage of the best of the U.S. higher education system. The combination and diversity of opportunity is powerful and far better than any single centralized solution. As such, Army University creates fertile ground for the learning efforts of everyone associated with soldiers, enabling success for all partners of the Army learning enterprise, while providing the best education experience possible for American soldiers. In the end, the Nation benefits through an improved, more professional, agile, and adaptive Army whose soldiers are best prepared to meet the challenges of today and tomorrow. The Nation also benefits by further preparing soldiers for a career in the civilian world, whether now as members of the Army Reserve and Army National Guard, or in the future upon retirement or departure from active service. ᘓ

Notes

1. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-8-2, *The U.S. Army Learning Concept for 2015* (Fort Monroe, VA: TRADOC, 2011). This pamphlet has been superseded by TP 525-8-2 *The U.S. Army Learning Concept for Training and Education: 2020-2040* (Fort Eustis, VA: TRADOC, April 2017).

2. "Army University Proclamation," Army University website, July 2015, accessed 11 September 2017, http://armyu.army.mil/sites/default/files/documents/ArmyU%20Proclamation.pdf.

Mindfulness as a Method to Enhance Cognitive Performance in Future Strategic Leaders

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Abstract

This article addresses cognitive performance as a current shortfall within the Army strategic leader developmental paradigm as written about by contemporary military senior leaders. Today's cognitive challenges are correlated to the writings of classic military strategists who placed great emphasis on clarity of thought and presence of mind. A recommendation is provided for integrating the scientifically-proven technique of mindfulness into the leader development paradigm to enhance the cognitive performance of future military strategic leaders.

The Army strategic leader development paradigm—the framework that promotes critical thinking, strategic reasoning, and an environmental acumen—is under the microscope of senior leaders who have expressed unease with its current state.[1] Over the course of our nation's involvement in both Iraq and Afghanistan, Army senior leaders expressed various concerns with the state of strategic leadership.[2] The greatest unease involved strategic leaders' ability to address complex problems and pursue strategic objectives.[3] Thinking critically and operating in the realm of strategy are cognitive abilities that continue to be fundamental challenges to the strategic leader development paradigm.[4] As years of conflict have illuminated, the Army needs a modern approach to increase the cognitive performance of strategic leaders.

The current strategic leader development paradigm is an industrial-aged development system that lacks the requisite framework to generate future force strategic leaders, and it must change to address the concerns of senior leaders.[5] Challenges to the current paradigm are with *when* strategic leader development happens and *what* areas of concentration the training emphasizes.[6] Strategic leader development is currently focused on ranks at and above colonel and tends to have an insular academic focus.[7] To be effective, change must emphasize a long-term developmental

approach, meaning strategic leader candidates must be developed over time to place increased emphasis on their own personal cognitive development.[8]

Cognitive development techniques currently applied in business strategy development such as the practice of *mindfulness*—a practice used to focus one's attention to achieve moment-to-moment awareness without judgment—can teach leaders to take a more mindful approach to formulating strategy.[9] Carl von Clausewitz infers that a repeated cognitive examination of this sort, while faced with an ambiguous environment, is requisite of military genius.[10]

Currently, Army strategic leaders are not trained specifically to use mindfulness, a scientifically-proven technique for cognitive enhancement, to develop their mental aptitude for strategy during war.[11] What follows is a closer examination of mindfulness as a potential enhancement to the current strategic leader development paradigm to improve the cognitive performance of Army strategic leaders. The change in the current development paradigm will aid in what senior leaders require most of the modern strategist: a mindful approach toward strategy development to fight and win in a complex world.[12]

Challenging the Assumptions

As alluded to in Ian Goldin and Chris Kutarna's *Age of Discovery: Navigating the Risks and Rewards of our New Renaissance*, the world as we know it is changing around us, and we may be on the fringe of a new global Renaissance period.[13] This period will insist upon change. Gen. Mark A. Milley stated, "Every assumption we hold, every claim, every assertion, every single one of them must be challenged."[14] This assertion suggests that the developmental process for leaders at all levels must catch up to, and evolve with, the changing times. A cultural shift must occur to better develop promising tactical leaders for the transition to strategic leadership.

The cultural shift will require leaders to demonstrate the ability to grasp new concepts like the necessity for "mindful" approaches with the aim to enhance cognitive performance. According to Dr. Ronald D. Siegel, assistant clinical professor of psychology at Harvard Medical School, mindfulness is "awareness of present experience with acceptance, and is a reliable pathway to increased wisdom."[15] Elizabeth A. Stanley, associate professor of security studies at Georgetown University, adds that benefits from the practice of mindfulness include one's ability to still the body and mind and call forth

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the strength necessary to endure harsh environmental conditions and a keen sense of awareness of the wider environment.[16]

Further analysis indicates that mindfulness aligns with Clausewitz's assertion as to what aids in the development of military genius.[17] He emphasizes, "What we must do is survey all those gifts of mind and temperament that in combination bear on military activity, taken together constitute the essence of military genius."[18] Mindfulness is a practice that advances the regulation of one's mind and temperament.[19] Practicing these techniques allows one to achieve emotional regulation and presence of mind. It also aids in identifying the characteristics considered necessary for enhanced cognitive performance, as Clausewitz advocates.[20] Mindfulness is perhaps the requisite approach to enhance the cognitive performance of modern strategic leaders beyond professional military education or other civilian education systems.

Classic Writings on Contemporary Cognitive Challenges

Clausewitz and Baron Antoine-Henri de Jomini, both esteemed military strategic theorists for their research on war, explain mindful approach toward strategy formulation as *coup d'oeil*. Coup d'oeil is the ability of an individual to achieve an acute presence of mind to draw out an almost instinctive conceptualization of the strategic environment through steady cognitive concentration.[21]

Gen. Helmuth von Moltke the Elder, a renowned classic military strategist, possessed the ability for constant cognitive concentration and a keen aptitude for war.[22] Moltke was chief of the Prussian and German army general staffs for thirty years and highly acclaimed for his strategic prowess. He displayed an acumen for swift decision-making and deliberate action while facing potential danger, and an acute understanding of environmental complexities removed from the opinions and attitudes of the time and his own prejudices.[23] Like Jomini and Clausewitz, Moltke was dismissive of environmental influence and demonstrated a very acute presence of mind. Moreover, in a review of Moltke's strategic prowess, Hans H. Hinterhuber and Wolfgang Popp explain that Moltke believed "the highest level of strategic competence is achieved only through a lifetime of work and training."[24] Further, in direct correlation to Moltke's statements on strategic leader development, Winston Churchill alluded to the same. In his 1915 essay "Painting a Pastime," Churchill explains that "one must plant a garden and tend to it so that over the years, it will 'bloom and ripen' and be better cultivated."[25]

The theories of Moltke and Churchill also correlate to the Department of the Army Pamphlet 600-3, *Commissioned Officer Professional Development and Career Management;* all three emphasize that long-term approaches are required.[26] As Churchill explains, "building strategic artists takes time, and so the seeds must be planted well in advance of wanting them to bear fruit, and then must be tended through subsequent assignments."[27]

Given the context of these classical military strategic theorists' thoughts regarding developing mental prowess, one can argue that the modern strategic leader developmental paradigm needs a swift, deliberate change, and that change should place an emphasis on practical approaches toward mindfulness. In most instances, this change will benefit both the mind and temperament, which are two elements that are necessary to manage future complexities and achieve a deeper understanding of war.[28]

The Science of Mindfulness

Nothing has such power to broaden the mind as the ability to investigate systematically and truly all that comes under thy observation in life.[29]

–Marcus Aurelius

Mindfulness, if sincerely and often practiced, promotes an advanced cognitive presence of mind that may alleviate, if not eliminate, reactive approaches to problem solving. Most importantly, it positively impacts the mind by limiting distraction and enhancing a leader's ability to sustain his or her attention.

Presence of mind is a requisite trait for all leaders. Unfortunately, thoughts often become clouded because of the inability to maintain an unwavering attention to what is occurring in the present.[30] Marcus Aurelius, a second-century Roman emperor and esteemed leader, recorded his beliefs regarding the necessity for one to attain an acute presence of mind or awareness in a series of notes written during the many battle campaigns he led.[31] Aurelius's notes, branded as "Meditations," present a common theme, emphasizing that to understand the world better, one must clear the mind of the noise associated with life and its challenges, which as Aurelius wrote, has the "power to broaden the mind." Gaining and sustaining clear presence of mind and awareness for what lies beyond the surface of everyday life requires an active redirecting of one's attention to those specific areas of importance.

William James, considered the father of American psychology, wrote:

Whether the attention come by grace of genius or dint of will, the longer one does attend to a topic the more mastery of it one has. And the faculty of voluntarily bringing back a wandering attention over and over again is the very root of judgment, character, and will. And education which should improve this faculty would be the education par excellence.[32]

In consideration of such a powerful statement, future strategy development will arguably continue to see deterioration unless military leaders are taught practical measures early to begin to focus on advanced cognitive self-development

(i.e., mindfulness). Specifically, military leaders should learn how to balance distractions with reality to attain the clear presence of mind and awareness required of military strategic leaders.

Research for business applications on the necessity of a more mindful approach toward decision-making and strategy development has not been extended sufficiently beyond those circles, meaning that emerging military strategic leaders are not benefiting from this area of concentrated study.[33] As this topic is further researched and examined in the business world, the military and national security enterprise should seek to integrate practical approaches to similarly aid leaders in managing potential irrational mindsets common to the human experience.[34]

Current military strategic leaders do not receive such long-term strategies for their growth and development, especially in methods that train mindfulness to enhance the mental aptitude for strategy.[35] The military strategic leader development paradigm is insular, short-termed, and limited in scope. In contrast, longer-term approaches can help the Army develop strategic leaders who systematically approach situations mindfully.[36]

The Practice of Mindfulness

Mindfulness is not a belief system, religion, or spiritual activity that requires practitioners to adopt new or unusual activities. Mindfulness is the practice of "developing the ability to see what is clearly occurring at any given moment to diminish [former] exaggerated responses and negative perceptions."[37] Dr. Amishi P. Jha, neuroscientist and facilitator of the Department of Defense grant that funded the Schofield Barracks Training and Research on Neurobehavioral Growth project, explains that mindfulness is "a mental mode characterized by attention now experienced without judgment, elaboration, or emotional reactivity."[38] Siegel adds, "Mindfulness practice is also itself a form of empirical inquiry, an investigative tool for a sort of inner science."[39] Under these interpretations, mindfulness is the practice of actively redirecting one's attention to those specific areas of importance.

Empirical research indicates that mindfulness decreases emotional reactivity that is often caused by environmental stimuli. Essentially, mindfulness enhances the brain regions responsible for *executive functioning*, the areas responsible for working memory, mental flexibility, and self-control.[40] Jha and other social scientists explain that mindfulness supports the development of an individual's capacity to mitigate emotion-filled responses to stimulus by cultivating one's ability to limit "ruminating about the past or worrying about the future."[41] When faced with a challenging situation, leaders trained in the practice of mindfulness can address the situation with clear, unemotional insights, reflective of an enhanced cognitive presence of mind.

Mindfulness Changes the Brain

The practice of mindfulness affords the practitioner the ability to train the mind to become less reactive and more *aware* of the current moment by actively redirecting attention to those specific areas of importance.[42] Often misinterpreted, the practice of mindfulness was once considered an old, Eastern religion-based meditative practice. Mindfulness has since transitioned to the Western mainstream as a scientifically sound method used to promote positive effects on the mind and temperament. Scientific findings have found that the practice of mindfulness has profound redemptive qualities such as the ability to "keep important parts of our brain from withering with age."[43]

Extensive research has found that "mindfulness can literally change your brain."[44] Data pooled from over twenty studies have scaled the impact of the practice of mindfulness to eight specific regions of the brain.[45] Two of those eight regions, also indicated as being of interest to business professionals, explicitly relate to developing strategic leaders.[46]

First, the anterior cingulate cortex or ACC, located behind the frontal lobe of the brain, is of interest. The ACC is found to have a direct correlation with self-regulation—the ability to actively redirect attention to specific areas of importance, and mitigate quick, exaggerated, emotion-filled responses—and rigidity, which are essential for developing branches and sequels to strategic plans.[47] Leaders with damage to the ACC may demonstrate limited self-regulation through impulsivity and unchecked aggression.[48] Further, inflexibility and ineffective problem-solving strategies are the results of impaired ACC connections. Practitioners of mindfulness, however, strengthen the ACC through rigorous practice, allowing the practitioner to attain stronger neural connections, an acute presence of mind for better change management, and flexibility in reasoning for dealing with ambiguous threat environments across multiple domains.

Second, the hippocampus (see figure, page 17), located on each side of the temporal lobe of the brain is of importance because of its association with emotion and memory. The hippocampus varies in size and has many receptors that are sensitive to stress, specifically chronic stress, as indicated by research.[49] High-stress levels result in a smaller hippocampus, which has been directly related to lower resilience.[50] The practice of mindfulness reportedly produces positive effects, as it significantly aids in one's ability to reduce stress. Mindfulness has demonstrated its redemptive qualities to the hippocampus with increases of gray matter within the brain of practitioners, and has shown significant improvements in areas involved in emotion regulation, self-referential processing, and perspective taking.[51]

Mindfulness promotes the advanced cognitive state, specifically the presence of mind as advocated for by classic military theorists and strategists. Practiced mindfulness can alleviate reactive approaches to problem-solving and even some forms of leader toxicity caused by absent cognitive faculties, but most important-

Figure. The Hippocampus

ly, it will enhance focus, mitigate distraction, and enhance the strategic leader's ability to sustain awareness and attention to those specific areas of importance in the realm of strategy development.[52]

Conclusion

This article explored and sought to highlight current limitations of the institutionalized practices of cognitive development of future strategic leaders. A need is established for strategic leaders to have developed as advanced practitioners of mindfulness.[53] A recommendation is made for developing strategic leaders using mindfulness as a modern, scientifically-proven and practical approach for enhancing cognitive performance, abilities, and the overall well-being of future strategic leaders. The primary aim of the article is to encourage the Army to consider this as a program enhancement to the present strategic leader developmental paradigm. The analysis of research and existing literature emphasized the importance of developing strategic leaders using long-term approaches. To be effective, mindfulness training must begin early and continue throughout military leader development to later influence the decision-making process at strategic levels of leadership. Cognitive enhancement goes beyond training and coaching, however, as it is highly personal and requires an equally high level of cultural support and individual commitment. ೧

Notes

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Gender-role Socialization and Academic Performance of Female Naval Personnel during Continuing Professional Education

Implications for Security Challenges in Nigeria

Paul Akpomuje

Abstract

This paper reports on a recent study that investigated gender issues in the continuing professional education (CPE) of the Nigerian Navy. Successful participation in CPE determines professional advancement, and only top-ranking personnel take part in decision making about issues of security. That study assumed that women personnel are burdened more by gender roles than their male counterparts, which has potential impact on their academic performance. This assumption justified the investigation of women's performance during the CPE of the Nigerian Navy. Analysis of data obtained through interviews held with eleven female and eleven male personnel showed that despite their gender roles, women personnel performed well academically because they were self-motivated, planned properly, and sought to prove their worth as well as counter hegemonic discourse. The paper recommends that the burden of gender roles, which female personnel described as "tiring," be lessened by the Navy by implementing security sector reforms that focus on "family-friendly" policies and work environments that could enhance women's participation in Naval CPE towards progression to decision-making positions.

Nigeria is faced with a myriad of security challenges—violent insurgent attacks, herdsmen marauding, kidnapping, abductions, ethnic skirmishes, militancy, and armed robbery.[1] It is commonplace in Nigeria to think that

women are softer targets because the majority of security attacks occur at market-places (which are often dominated by women in developing economies), farming and fishing areas (which are common sites of attacks by herdsmen and Niger Delta militants respectively, and also dominated by women), and schools (as in the case of the Chibok girls abducted by the Boko Haram insurgents in April 2014—many of whom are still in the custody of the insurgents). This view constitutes a significant part of Nigeria's security challenges.[2] Resolving these challenges and addressing their root causes will not succeed unless the women who suffer most are empowered.[3]

The fact that women bear most of the brunt of security lapses in Nigeria justifies the need for proper representation of female security personnel in decision making on issues concerning the nation's security, as this could advance issues that are important to women.[4] Men are more represented in decision-making processes about security because they have better access to career advancement opportunities and are more supported by cultural and institutional factors, yet women are more affected by security challenges.[5] Women should not be merely victims, but also agents of security.[6] Women play integral roles in forces (armed and non-armed) that help combat security challenges. This includes women's roles as military personnel and their roles as ordinary members of their respective local communities.[7] Women's inclusion in security sector agencies is therefore critical in addressing security and rights issues, abating hostility between communities and security actors, and ensuring a standard for security provision or service which is accountable and reliable.[8]

In most security institutions, women constitute a small minority, and the unfriendly working environments discourage their recruitment and retention. It is therefore not surprising that women are underrepresented in the more influential senior echelons of the military. This structure is largely a function of the internal selection and development systems that have a substantially masculine, mainstream social and cultural weighting which, in turn, is reflected in both recruitment and retention rates among nonmainstream groups, to include women.[9] The Nigerian military has a low representation of women in leadership positions with only about 1 percent reportedly in senior ranks; women account for 3–10 percent of total personnel.[10] As a result, this underrepresentation of women in security-related leadership and decision-making positions can adversely impact the delivery of security to all, especially women.[11]

Continuing professional education (CPE) allows professionals to stay current and useful; promotion and advancement are contingent on CPE.[12] Through CPE, militaries

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keep personnel up-to-date on matters of security and stability and prepare them to deal with novel situations.[13] Participation and high academic performance in military CPE enhances women's chances of attaining higher ranks and leadership positions. Since it is suspected that gender roles might affect participation in and academic performance during CPE, this study explores how gender roles affect women's successful participation and academic performance in the CPE of the Nigerian Navy.

Theoretical Perspectives: Gender Schema and Role Congruent Theories

Gender schema theory accounts for how people learn stereotypical ideals of masculine and feminine traits, how these shape their thought processes and self-concept, and how they conform to fit within gender roles which are taught through social experiences (from the home, school, mosque, and church).[14] Gender schema theory explains that gender roles are social constructs. They are usually roles individuals perform in informal, religious, community, and natural settings, which are oftentimes different from the work roles they perform in the public sphere.[15]

Role congruity theory explains that social roles have positive or negative values relative to the group to which an individual belongs. It explains how perceptions of roles account for gender bias in perceived leadership abilities of group members.[16] The theory further explains that characteristics attributed to males and females determine the leadership roles they can play in public spheres.

In male-dominated institutions, such as corporate, political, and military institutions, male norms are served; women are often underrepresented in those spaces and leadership has been a predominantly male prerogative.[17] Workplaces are gendered because of the norms and values associated with those spaces.[18] Although the proportion of women in the workplace has increased remarkably within the past few decades, women remain vastly underrepresented at the highest organizational levels.[19]

Women's underrepresentation at the highest organizational levels in male-dominated professions such as the military is connected with the burden of social roles that women bear as well as the paternalistic nature of these workplaces.[20] Given these, how is gender-role socialization impacting naval women's academic performance during CPE in the Nigerian Navy? What does this mean for their roles in decision-making processes about the security challenges in Nigeria? These are the questions addressed in this paper.

Research Method

This study adopted a descriptive case study design because the researcher wanted to explore the influence of gender roles on the academic performance of female

naval personnel during CPE in a detailed, real-life context. The sample consisted of twenty-two naval personnel. Ten female and ten male naval personnel were purposively selected for interviews at the Nigerian Navy School in Apapa, Lagos, Nigeria, based on their enlistment in CPE. Two trainers involved in the administration of the school, a male and a female, were also interviewed. The decision to interview both women and men was informed by the presence of both genders in the Navy. As it is the case in social relationships, the construction of roles and attributes of women and men is undertaken not solely by one gender but by both.

When women enter an androcentric space such as the Navy, they enter as gendered women, not as the equals of the gendered male personnel.[21] The ability of women to access and participate in CPE in order to progress to decision-making positions could depend on several factors: men and women's perception of women's roles in the private sphere and at work, the reality of women's roles in the private sphere, and how this interfaces with their academic performance during CPE. It was therefore deemed appropriate that the researcher should sample and interview female and male personnel. Data were collected through an interview guide. The instrument focused on the question of women's CPE experience in the Navy in relation to that of men. The interviews were tape-recorded with each lasting an average of twenty-five minutes. Participants in the study were coded according to gender: male personnel as M1 to M10, female personnel as F1 to F10, female trainer as FT, and male trainer as MT.

Data Presentation and Discussion

In this section, the author seeks to answer the questions that were raised about the impact of gender-role socialization on naval women's academic performance during CPE and the implications for their participation in decision-making processes about security challenges confronting the country.

Gender roles and naval women's education and learning. Female personnel gave insights into how gender roles pose potential challenges to naval women's continuing professional education and learning. A female participant avowed that it is tiring and puts women under a lot of pressure when a couple return from the same work and the husband sits down while the wife goes into the kitchen to cook and also attend to other domestic chores. The participants pointed out that caregiving and nursing roles pose challenges to women's activeness in learning and other public roles, which are usually not the same for men. Two female personnel shared their thoughts:

Immediately you get married, you won't be as active as before. No way will I be very happy carrying a baby and transferring to another location. Most women don't like coming for courses because of these challenges. But, because courses are attached to promotion, they have no choice. (F2)

Being a woman, family should be first; that's the way we were created. You are supposed to be a support to your husband and mother to your children. The only problem I had during my courses is where to leave my children; who to leave my family with. I don't think the male personnel have much problem; they have their wives of course. (F3)

Another female participant (F4) pointed out that "being a mother, you have to take care of the family, and the Navy too is expecting something from you." Participant F5 affirmed that combining gender roles with CPE is stressful for women and noted that sometimes "you might have a test the next day and your child is sick." Participant F6 revealed that some female personnel married to civilians have lost their marriages or their jobs because of these challenges.

The male participants in the research also noted that gender roles make it difficult for female personnel to participate actively in the CPE of the Navy. A male participant (M1) cited an instance where a female member serving in Port Harcourt (a city in the south of Nigeria) is sent to Lagos (another city in the west of the country) to undergo a professional course. He noted that leaving her husband and perhaps underage children will affect her concentration. Another male participant (M2) was of the view that family responsibilities and natural roles such as pregnancy affect women's access to successful participation in CPE, especially if they are not told of their participation in the course ahead of time. Two male participants mentioned some key roles women play in the private sphere that could possibly affect their concentration in academic work:

Family problems and distress of the work cause psychological problems for women. This can affect their participation in courses. Learning requires the brain; you need concentration to learn. For instance, you're coming for course, and your child is not feeling fine. How will you have full concentration as a mother? (M3)

Majority are mothers; they wake up very early, make food for the kids and husband before coming for the day's activity (M4).

These data reveal that women personnel who undergo the CPE of the Nigerian Navy are burdened by gender roles in the private sphere (the home); in turn, this may negatively impact their academic performance. Data presented in the following section reveals whether female naval personnel allow gender roles to affect their performance.

Performance of women personnel during naval continuing professional education. Female and male participants gave their views about women's academic performance during CPE. Both categories of participants averred that women perform well during courses. A majority of them affirmed that sometimes female personnel perform better than their male counterparts. The FT noted that "women

are showing their worth in the military. They go on courses and even surpass their male counterparts." She also noted that the only female rear admiral in the Navy topped her class in many of her CPE courses. A female participant (F3) revealed that because she was one of the best students during her Command Appointment Promotion Examination, the Navy asked her to teach personnel who were drafted for that same course the following year. Another participant gave the statistics of female performance during one of her CPE courses:

> We perform very well. In my class we were fifty-nine, and at least ten people had first class. Four of them were women, and we had nine women in the class. The school was so impressed. Nothing any male personnel will do that I cannot do (F6).

A male participant (M5) opened up that some of the female personnel challenge him. Like the FT, the MT opined that women do better during CPE because they are more restricted (with respect to socializing) and focused than their male counterparts. The responses of female and male personnel indicate that women personnel perform very well academically during CPE, despite their gender roles in the private sphere. If female personnel are burdened by gender roles in the home and yet perform exceptionally well during CPE, what and how then are they sorting out for themselves in order to be recognized and remain relevant to the Navy? The reasons the naval personnel proffered are presented in the next section.

How and why women achieve academic success during naval continuing professional education. Some female personnel averred that they engaged in proper planning and preparation when they have been scheduled to attend a CPE. One female participant (F2) indicated that she took her babies to the day care center when they were two months old in preparation for her resumption of duty after the third month of child birth. Another female participant (F7) avowed, "If you are up for a course maybe for six months or a year, you let your family be prepared. It will take a whole lot of planning, managing, and juggling to be able to achieve all these." Yet another shared, "I had to contract someone to come home to do the homework for them and take care of the school part while my mother will take care of the domestic duties" (F3). Also, a female participant (F5) noted that women in the Navy motivate themselves to perform well during CPE. She noted, "As female personnel, you are not looking for who will motivate you because you are already determined to do it, so, you have to take the bull by the horn."

These responses clearly highlight how women personnel manage their gender roles in the private sphere in order to fully participate and perform well during CPE. The responses show that, in many cases, women are self-motivated, and engage in proper planning ahead of their participation.

The key reasons that female and male personnel advanced for women's good academic performance in spite of their gender roles is that women personnel are very

often determined and focused, and they have a need to prove their worth and resist hegemonic discourse. They said: "It's not about brawn; it's about brain—being female has nothing to do with that. We are trying and fighting hard so that we'll be recognized for our brainpower" (F7); "I feel I should compete with them and make them know that what they know, I know better. It's a form of showing that you have the intellectual capacity to surpass them" (F8); "I think it can be established that this attitude of academic diligence is a way of also engaging in power play. It is even one of the things that propel them to be focused because the general impression people have is that women are of weaker sex" (MT).

A female participant (F7) mentioned that women in the Navy want to be recognized for their brainpower and for what they can bring to the table. The MT had mentioned that the only female rear admiral of the Nigerian Navy was overall best in her class. He mentioned here again that academic diligence is a way by which women personnel engage in power play. Women have generally been branded as the weaker sex—this is a hegemonic discourse that women personnel who perform very well in the Navy are determined to resist.

Conclusion and Recommendations

This study set out initially to examine whether the burden of gender roles could have a negative effect on the academic performance of female military personnel during their continuing professional education and whether this, in turn, could affect their progress to leadership and decision-making positions within the Nigerian military hierarchy, especially with regard to the country's security challenges. Surprisingly, the analysis of data revealed a more positive tone than expected, showing that women in the Nigerian Navy generally perform well academically, and sometimes, outperform their male counterparts in CPE courses. However, the analysis also highlights that women's success in CPE does not come without a price; they frequently described the whole process as "tiring" and the work environment as "unfriendly" owing to the masculine nature of the Nigerian military.

This study showed that, although female naval personnel are burdened by gender roles in the private sphere, they perform well in CPE through appropriate planning and management of their gender roles. They successfully juggle household and childcare work with continuing professional education because they are intrinsically and extrinsically motivated. These results are in consonance with results of studies that have shown that successful academic performance is one of the pathways women have sought to gain power and assert their personhood.[22]

In spite of the positive tone of the results of this study, the burden female naval personnel bear as a result of their gender roles should not be ignored. The Navy could reduce these burdens by implementing security sector reforms that focus on "family

friendly" policies and work environments, such as having crèches at CPE and training bases for nursing mothers who are drafted for courses, adjusting the time of resumption, and consideration of maternity leave for personnel (which the Nigerian Navy currently does not grant).[23] In the proposed work environment, female naval personnel would be able to progress fast to decision-making positions with limited stress, enhancing the possibility that they would provide a gendered lens on the security challenges the nation is facing and the security measures the military would take in dealing with these security challenges.

The study also highlighted the view that women suffer most from security challenges in Nigeria, as indicated in the literature. Although men are not immune to these attacks, women and girls tend to suffer most from such attacks, including during post-attack situations, because they are more likely to be targets of attacks that occur at marketplaces, farming and fishing areas, and schools (as in the case of the Chibok girls abducted by the Boko Haram insurgents).[24] This paper argued that if more female personnel advance easily to leadership and decision-making positions in the military, their presence would provide more gender perspectives on tackling the nation's security challenges. The study also contributes to the body of literature in this regard.

This paper was based on a study that focused only on the Nigerian Navy. Further studies focusing on Nigeria's Army and Air Force could be conducted to ascertain the impact of gender roles on the academic performance of women personnel in other armed forces and whether their leadership and decision-making opportunities suffer with regard to security challenges in Nigeria. Finally, further study could also be conducted to explore additional gender-sensitive strategies that the military in Nigeria and beyond could employ in tackling security challenges. ☙

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Reengineering Army Education for Adult Learners

David Pierson, PhD

On 7 July 2015, the U.S. Army established the Army University as a single institution for managing, resourcing, and integrating the efforts of seventy separate U.S. Army Training and Doctrine Command (TRADOC) internal school programs as well as synchronizing the instruction of more than one hundred additional TRADOC institutions.[1] These institutions employ a blend of training and education to ensure that soldiers are properly prepared to perform duties within the profession of arms.

Achieving the correct mix of training and education within the framework of professional military education has been the subject of some debate.[2] This debate often results in unnecessary calls for change in approaches to military education. Additionally, there is not a clear approach to military education based upon the requirements of adult learning. While many of the TRADOC schools and institutions are basic-level schools designed to educate and train new recruits and officers, a large portion of the Army's educational structure is devoted to advanced-level schooling populated by adult learners. Based upon experiential and motivational factors, adult learners learn differently than non-adult learners. Therefore, they should be educated, trained, and instructed using educational approaches that account for their greater experience and maturity. Finally, there are inefficiencies in the way that much of the Army's curriculum is imparted, requiring a one-size-fits-all model rather than tailoring instruction to the individual learners where possible.

Competency-based education (CBE) offers a framework for such tailoring, allowing learners to seek out the information they need and opt out of areas in which they are already competent. Therefore, to optimize learning in its advanced schools, Army educators must get past the needless debate about education versus training, adopt a common educational model for adults, properly set the conditions for adult learning in their institutions, and leverage the strengths of CBE.

Learning, Education, Training, and Instruction

Within professional military education, there is a debate concerning whether Army students are receiving education or training. This debate often slows curriculum design and development as educators attempt to eradicate evidence of training and robe it in

the trappings of education. In many advanced schools, training is now a dirty word that implies an endeavor that is unworthy of their efforts. However, education and training are intertwined and are not mutually exclusive. While it may be possible to educate without training, one cannot train without educating.

Education and learning are similarly intertwined. While one may learn without formal education, there is no point to education without learning. It is important to understand the differences and relationships between the concepts of learning, education, instruction, and training in order to better understand the nature of how adults learn and the practice of educating adults.

Learning is a complex concept with evolving definitions. Learning is a process of controlling, shaping, and changing behavior as well as a process of developing competencies; it is "a process of gaining knowledge and expertise."[3] Similarly, education has elusive definitions, particularly as related to learning. When looking at many different definitions of education, a common meaning that emerges is that education is a process for learning.[4] Thus, learning and education are intertwined; their primary difference is their orientation.

The orientation of learning is mainly internal to the learner, focused on how the learner gains knowledge and expertise. Education is largely external, examining the ways that information and concepts are presented to or gathered by the learner. This external process of education leads to an internal process of learning.

Education is concept-based, explaining why and how things work together.[5] It provides the big picture, explaining the art, science, and theory of a phenomenon. Education allows people to examine a problem or issue and devise a different approach. An education in execution and synchronization of indirect fires might cover combined arms warfare and logistics resupply as well as interior and exterior ballistics theory. Education is what allowed leaders of indirect-fire units in World War II to recognize that the complexities posed by massive amounts of artillery on the battlefield required centralized fire direction centers to process and compute the myriad requests for fires.

Education consists of four integrated components: initiation, instruction, training, and induction.[6] Initiation familiarizes the learner with professional values and cultural norms. Instruction is learner-centered, focused on providing the learners with the information they need to think critically and use judgment in problem solving and complex situations.

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Training consists of imparting the skills and procedures required for mastery of a task or competency. It has an external orientation focused on the needs of the profession or vocation.[7] Training results in a learner who is capable of performing specific tasks to a standard specified by the profession or vocation.

Induction puts it all together, allowing the learner to combine their acquired skills, knowledge, and ethical principles and apply them to a unique problem or situation. With respect to the indirect-fire example used earlier, instruction and training gives learners the foundation and skills to integrate fires assets, determine the correct mix of ammunition types, and calculate ballistic solutions. It was the combination of instruction and training that allowed the fire direction centers of World War I to rapidly compute the ballistic solutions required to effectively mass fires. Education provides a foundation for understanding, while training provides the skills to take action and complete tasks.

We should not think of learning in the military in terms of education or training. Rather, we should understand that they both exist simultaneously with instruction and training as subsets of education. If you are instructing and/or training, you are also educating. Both education and training are requirements of advanced Army schooling; one explains why we do something (theory), and the other explains how (process). The adult learners in Army institutions require some measure of both to succeed in the operational force.

Adult Learning

Adult learners are a unique segment of the student population and comprise a very large portion of the Army's learners. While all soldiers are considered adults, not all soldiers are adult learners. An adult learner is generally considered a student aged twenty-five or older.[8] Adult learners populate almost every advanced learning school in the Army, from the Advanced Noncommissioned Officer Course to the Captains Career Courses to the Command and General Staff Officers Course and the U.S. Army War College. These soldiers, based upon greater experience and maturity, learn differently than younger learners, and it is important to properly set learning conditions in order to motivate these adult learners.[9]

Many of the principles associated with adult learning are derived from the theory of andragogy, a learning theory first proposed in 1968 by Malcolm Knowles.[10] Andragogy asserts that adults, defined as independent, responsible, self-directed individuals, learn differently than non-adults. The theory is based upon six underlying assumptions that differentiate it from pedagogical learning: (1) adults need to know why they need to learn something, (2) adult learners need to be self-directed, (3) adults draw heavily upon previous experience when learning, (4) adults are ready to learn in order to cope with real-life situations, (5) adult learning is task-centered or problem-centered in order

to deal with life situations, and (6) adults are motivated to learn.[11] These assumptions explain the internal characteristics of adult learners. Knowles redirected the focus of andragogy onto educators by proposing four principles that could be applied to adult learning: (1) adults need to be involved in the planning and assessment of their instruction, (2) experience forms the basis of adult learning, (3) adults are most interested in learning that has clear relevance or impact on their job, and (4) adult learning is problem-centered rather than content-oriented.[12] Thus, andragogy is a learner-focused theory in which learners are internally motivated to construct knowledge by drawing upon previous experience in order to solve real-world issues.

Andragogy is not a perfect theory and has its criticisms. It does not completely explain how adults learn, nor does it fully allow for the context of learning that shapes how each adult is unique and learns differently.[13] The theory tends to explain what the adult learner may be like, rather than how adults actually learn. This tends to make andragogy a list of principles rather than a learning theory.[14] Despite these shortcomings, andragogy provides a solid framework for designing and executing adult education in the Army.

To encourage the sharing of experiences in an environment where students achieve understanding of phenomena while solving relevant, complex problems, it is important to use an appropriate learning model. The Experiential Learning Model (ELM), in use at the Army's Command and General Staff College, provides a framework that supports adult learning. The model is based upon Kolb's Experiential Learning Cycle in which learners create knowledge by grasping experience and then transforming it into actionable information. Kolb models the cognitive processes of learning through a four-stage cycle of learning that consists of concrete experience, reflective observation, abstract conceptualization, and active experimentation.[15]

The concrete experience introduces a new experience or reinterprets an existing one. During reflective observation, the learners consider similarities and differences between the new experience and their own experiences. In abstract conceptualization, the learners form concepts, analyze them, and form general conclusions related to these concepts; they learn from the experience. Finally, during active experimentation, the learners apply their conclusions to a different situation creating a new experience. By touching on all four of the stages of the learning cycle, learners construct knowledge by experiencing, reflecting, thinking, and acting.

Kolb's cycle provides an internal sequence of stages describing how adults transform experience to create knowledge and learn. Kolb's internal learning process needs to be supported by an external teaching process that leads the adult student through these stages of learning. The ELM, which is actually an educational or teaching model, provides a five-step framework that guides adult learners through Kolb's cycle.[16] The ELM touches on the four stages of Kolb's model by progressing through five steps: concrete experience, publish and process, generalize new information, develop, and apply. The first step, *concrete experience*, introduces the students to a new situation that causes them to consider or be a participant in an event. This

induces Kolb's first stage by introducing the student to a situation or event. In the second step, *publish and process*, students discuss the situation or event and attempt to dissect what happened as well as understand the significance of the experience. Often students will call upon past experience when analyzing what happened. In the third step, *generalize new information*, the students are introduced to new learning content, which is related to the concrete experience. This is followed by a discussion of how this new information is relevant and might be applied by them in future situations in the *develop* step. Finally the students participate in a practical application or exercise that allows them to *apply* their newfound knowledge.

The ELM is based upon Kolb's Experiential Learning Cycle, which relies heavily upon the previous experience of the learner. Critics of Kolb's cycle point to experience as an interpreted stimulus and not an actual real-world occurrence that the learner must encounter. In Kolb's model, experience is phenomenon that can be easily identified and named, but other educational theorists view experience as a felt encounter or a way of knowing about a phenomenon. This expanded theoretical perspective places greater emphasis on understanding the felt sense of others' experiences rather than reflecting on one's own experiences.[17] The ELM attempts to mitigate this difference in perspectives through the sharing of experiences during the publish and process step. Ultimately, the five-step approach of the ELM leads students through Kolb's cycle, allowing them to create knowledge through the creation and sharing of experience coupled with analysis and collaborative application.

Facilitating Adult Learning

Not everyone learns in the same manner, and motivating students to learn—even Army students—can be problematic based upon the individual nature of learning. While the concept of self-directed learning may imply that adults require little, if any, direction and guidance from a teacher, the reality is much different. Because adults have different levels of maturity and self-direction, there is no "one-size-fits-all" solution to their education. Some may be very independent and able to direct their own learning, while others may be very dependent upon the teacher for structure and guidance.[18]

Adult learners exist on a continuum with varying levels of self-direction. The teacher serves as a guide to students providing a means of structuring their learning. This process expands the boundaries of traditional, content-based learning, by allowing learners to establish their own direction based upon their potential.[19] Self-directed learning is not wholly internal to the student; it is a combination of student autonomy coupled with teacher guidance and resourcing.

The role of the teacher in adult learning is to guide students through a process of learning that provides them with the procedures and resources for acquiring knowledge and skills.[20] In establishing a process that guides students through learning, it is

important that the teacher set the conditions to motivate students. Adults are both internally and externally motivated to learn.[21] While internal pressures provide the most motivation, external motivators in the form of reward or support can also be important.[22] Thus, as part of the establishing an adult learning process, instructors can create conditions and remove barriers that facilitate adult learning. Instructors can motivate adults to learn by establishing relevancy, facilitating student control over learning, and creating an adult learning environment.

Relevancy

Course subject matter and individual situation both influence the relevancy of the adult learning experience. While the focus of teaching adults is based on providing a process rather than content, the content and subject matter play an important role from the learner's standpoint.[23] Student perceptions of content relevancy are an important aspect of student motivation noted in online learning.[24] Relevancy is directly linked to a principal andragogical assumption concerning a readiness to learn, in which learners are prepared to learn those things that help them cope with real-life tasks.[25] Adult learners have little patience for activities that they see as irrelevant to their situation.[26] Adult learners desire a personal payoff from their learning and are motivated by the potential to improve their employability skills.[27] Thus, soldiers who are adult learners are motivated to learn when they understand that the skills they are developing will directly lead to success in their future jobs.

The relevancy of learning to one's own life situation is considered one of the most crucial motivational factors for adult learners and a key factor shown to affect retention in master's level online courses.[28] Relevancy of material can also be established outside of real-life application, particularly if it is an essential part of career progression or clearly linked to some other aspect of their education.[29]

There are a number of ways that instructors can increase the relevancy of learning in the adult classroom and increase student motivation to learn. One of the simplest ways is to prepare the students for learning by explaining the relevance of the learning and, if necessary, "convince learners of the value of the new learning."[30] This can be done by having students point out the potential payoffs of the learning or the applicability to real-life tasks and situations. Relevancy can also be established through learning activities that are clearly tied to real-life situations. This can be done through the use of authentic assessments in case-based or situated instructional modules such as teaching cases or planning exercises.[31] Linking relevancy to graduation requirements is an obvious technique that the instructor can employ. Most importantly, establishing relevancy to students requires that the instructor understands the students' backgrounds, capabilities, and goals. Without understanding their perspectives and directions, establishing relevancy can be extremely challenging.

Facilitating Student Control

An underlying assumption about adult learners is that they are self-directed to learn. Adults also have the need to independently organize their learning around their life experiences and problems.[32] As self-directed learners, adults desire some level of autonomy over their learning experience as well as shared ownership of the outcomes.[33] Learner control, including control over topics, sequencing, pacing, and access to supporting resources, has been shown to be a major factor affecting student motivation.[34] Learner control over the acquisition of knowledge as well as the process for acquiring it is an important aspect of self-directed learning and strongly tied to motivation.[35] Thus, adults desire some level of control over their access to learning resources, the learning process, the learning objectives, and the process for evaluating whether the objectives have been met.

There are a variety of ways that the instructor can support self-directed learning and facilitate student control over learning. One method of facilitating some level of student control over learning is through the practice of contract learning in which the learner and instructor agree on what will be learned, how it will be learned, and how the learning will be measured.[36] Knowles singled out contract learning as the "single most potent tool" in adult education.[37] While this practice is administratively intensive, it clearly supports the principles of andragogy and self-directed learning. Control over pace and timing of requirements is also very important to adult learners. Instructors should allow some flexibility in due dates and deadlines but also recognize the need for pace and rigor to overcome potential student inertia and procrastination.[38] Offering students choices in their requirements also facilitates student control. Allowing them to choose between project topics or allowing some latitude in picking their own essay topics can motivate them. Giving adults some level of control over their learning motivates them and expands their inquiry and learning.

Establishing an Adult Learning Environment

Special attention should be taken when creating an adult learning environment. Studies have shown that the climate of the learning environment is a major factor in the motivation and retention of adult learners.[39] Knowles talks of establishing an "atmosphere of adultness" within the classroom climate.[40] Creating the right learning environment for adults involves the proper presentation and organization of materials, an emphasis on problem-based learning activities, and a framework for teaching that supports collaboration and leverages student experience.

Organization of the classroom and the materials contained within it should be based upon the learners using it. Instructors should try to create an informal classroom setting where no single seat dominates the room. The classroom should be

arranged in a manner that supports discussion with students seated so that they can face one another. Since adults learn best when they apply their learning to real-life situations, their learning activities should have clear links to real-life problems and allow them to apply their experiences.

Instructors should encourage such activities in discussions and assessed requirements. Collaboration among students is also an important component of adult learning. By first reflecting on their own experiences and then sharing experiences with others, adults are able to solve problems and learn collaboratively.[41] Employing collaborative learning activities allows for exchange of experiences among adult learners. Instructors must actively participate in discussions, provide in-depth and timely feedback, and guide group activities as part of establishing both a social and instructor presence in the classroom.

Leveraging Competency-Based Education

Understanding that adult learners are self-directed, draw heavily upon their experience, and prefer task-centered learning that deals with real-life situations, it makes sense to use a learning approach focused on these factors. CBE is a learning approach that is seeing a resurgence in popularity and offers promise in some aspects of Army adult education. Rising education costs coupled with the need to positively link learning outcomes with job readiness have created the need for an educational experience that prepares students to master the complex array of tasks they are expected to perform in the working environment.[42] CBE has been hailed as the approach to education that addresses these issues and delivers a student who is ready to perform in the workplace.

The principal difference between CBE and traditional education is how learning is measured. Traditional education is largely process-focused, concentrating on what and how learners are taught over a specific period of time, specifically the credit hour. CBE is learner-focused, centered on demonstrated mastery of competencies—the ability to solve problems, perform procedures, communicate effectively, or make sound decisions—without regard for how long it takes to achieve such mastery.[43]

CBE is not a new approach; it has been around for over fifty years, used primarily in medical education.[44] Based upon well-defined competencies and measurable learning objectives, CBE requires students to prove mastery of competencies by demonstrating not only knowledge but also the ability to apply that knowledge.[45]

A competency is the ability to do something successfully. Competencies are personal qualities or attributes that are required by the associated profession or job. These are expressed in terms of measurable behaviors based on integrating knowledge and skills.[46]

In order to measure knowledge and skills, competencies are further broken down into precise activities, or learning objectives, which describe student behaviors that must be demonstrated as well as the level or degree of demonstrated competence.[47]

CBE tends to use binary assessments—both the learning objectives and the associated competencies are either mastered or not mastered. Students continue working at competencies until they master all associated learning objectives.

Because CBE often draws upon experience, it is often linked to prior learning assessment (PLA), a term describing learning that a person has acquired outside a traditional academic environment.[48] The four generally accepted approaches to PLA include: national standardized exams such as advanced placement or college-level examination program tests, challenge exams for local courses, American Council on Education evaluations of corporate and military training, and individualized assessments such as portfolio-based assessments. PLA can be incorporated into CBE programs to further streamline the pathway to degree completion by granting course credit or competency credit for prior learning.

CBE is a good approach to use for adult learners because it allows learners to move at their own pace, leverage previous experience, and rapidly get credit for competencies as they demonstrate mastery of them. Additionally, students do not have to relearn material they already know. Because CBE is focused on demonstrating student mastery of competencies, it tends to be focused on the individual learner. This makes it well suited to demonstrating understanding of foundational principles or expert skills associated with one's military specialty or functional area. Thus, it is well suited for certifying an individual in his or her area of expertise.

Implementing CBE in any institution is not easy. Institutions of higher education have historically experienced sustaining innovations such as enhanced teaching technology, classroom improvements, and increased faculty research.[49] CBE represents a disruptive innovation, moving education away from traditional time in classrooms and instead focusing on flexible, cost-effective, career-oriented learning. It represents a major change in the way education is conducted. To implement a CBE program requires analysis of the current curricula to identify competencies from learning objectives and designing a curriculum that provides credit based on demonstration of competencies rather than successful completion of a set period of study.[50] It is challenging to develop valid and reliable competencies that are uniform in terminology and understood across a profession.[51] While many institutions focus on the upfront task of identifying the competencies associated with their programs, they fail to develop competencies that are easily understood and transportable outside of their institutions.[52] Any competencies developed within Army institutions should be commonly understood across the Army University system, and thus, must be managed in some way by Army University. Ideally these competencies would also be understood and transportable to other military educational institutions and even civilian universities and colleges.

Another area where CBE falters, particularly in military adult education, is in application to seminar-based learning and collaborative events where students must integrate and share their knowledge to complete complex activities. Such events require the mastery of group competencies. Because of the many persons involved in

these activities, pace and mastery of group competencies is often subject to being determined by the slowest or least competent in the group. In such situations, those students with more experience and greater mastery of related competencies tend to lead the others toward the group mastery, which is a hallmark of experiential learning. Groups that advance rapidly and demonstrate mastery of enabling learning objectives may actually be allowed to progress beyond the scope of course terminal learning objectives, moving into advanced aspects of learning. For use in advanced Army education, CBE must take an approach focused on attainment of group competencies to have utility in seminar-based education. Demonstration of a competency by the group relies upon all members appropriately contributing to the process, and not all members will operate at the same levels of competency. This may slow the pace somewhat, but ultimately it allows for group learning leveraging the ELM and can lead to even more advanced learning as group competencies are mastered.

Final Thoughts

The Army has an extremely robust educational system—arguably the largest and most complex associated with any nonacademic organization. This system blends training and education in an environment made up of a large component of adult learners. These adult learners possess diverse experiences which create unique learning requirements to further develop them. To optimize this system, the Army needs to merge its mindset concerning training and education, understanding that both exist simultaneously and complement, rather than undercut, one another. To address its large adult learning population, the Army should adopt an adult-learner instructional model, such as the ELM, as well as establishing environments conducive to adult learning. Finally the Army should better facilitate the unique requirements of individual learners by taking advantage of many of the flexible and tailored learning opportunities made possible by CBE. By staying at the forefront of educational theory and design and recognizing the unique education requirements of its force, the Army will foster a learning organization capable of meeting all challenges posed in the future operational environment. ☙

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An Engine for Army Learning
Army University's Center for Teaching and Learning Excellence

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Abstract

To develop adaptive and innovative professionals that can maintain focus on readiness in the near and far terms, the Army institutionalized learning by establishing Army University (ArmyU). The engine of this institutionalized learning is the Center for Teaching and Learning Excellence (CTLE). Modeled after similar centers of learning from civilian institutions of higher education, ArmyU's CTLE facilitates learning in the Army in three ways. First, by "professionalizing" the core curriculum of its "profession." Second, by developing a cadre of faculty through programs that go beyond the rhetoric of the label "world-class." Lastly, CTLE facilitates an internal learning network with Centers of Excellence, the Army Research Institutions and Army Research Laboratory, as well as externally to other organizations leading innovations in adult learning. It uses this network to keep the Army abreast of the latest in learning sciences which consistently fuels the engine of learning innovations throughout the Army. This article describes these three functions and the tension in uniting competing views of professional military training and education into one unified learning philosophy. It concludes with lessons that will serve to sustain Army learning through the progress of CTLE and ArmyU.

Introduction

The U.S. Army's culture values current pragmatic needs and actions to achieve near-term requirements over the intellectualism and theory necessary to prepare for the future. For example, William Skelton provides a splendid glimpse of an-

ti-intellectualism within the ranks of the Army in the 1850s in the following excerpt from his study of the American profession of arms:

> Crossing the plains on an expedition to Utah [in the 1850s], Major Charles A. May searched the wagons in an effort to reduce unnecessary baggage. When he reached the wagons of the light artillery battery, Captain Henry J. Hunt proudly pointed out the box containing the battery library. "Books?!" May said in astonishment. "You say books? Whoever heard of books being hauled over the plains? What in the hell are you going to do with them?" At that moment Captain Campbell of the Dragoons came up and asked permission to carry a barrel of whiskey. "Yes, anything in reason Captain, you can take along the whiskey, but damned if these books shall go."[1]

Despite the open disdain of learning exhibited among the average officer in the ranks of the Army during that era, the Army was simultaneously establishing several institutions of professional military education. Notably one of those institutions was the School for the Application of Infantry and Cavalry, established in

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1881 and later named the Command and General Staff College, at Fort Leaven-worth, Kansas, on the edge of the same frontier that May was about to embark in the excerpt above.[2]

This dichotomous relationship persists to the present day. Although they are two sides of the same coin of learning, the tension between training and education has been one of practicality versus theory, and action versus contemplation. The tension has had real impacts on the development of the Army learning enterprise. Both ideas compete for resources in terms of time, money, and workforce to implement their goals in the hierarchy of military education and training. The distinctiveness of these philosophies of learning are best expressed by the quotation: "Train for certainty, but educate for uncertainty."[3]

Gen. Martin E. Dempsey, while serving as commanding general of the U.S. Army Training and Doctrine Command (TRADOC) from 2008 to 2001, embarked upon transforming how the Army views learning by introducing the Campaign of Learning in response to the ambiguous future of conflict described in the *U.S. Army Operating Concept*.[4] Dempsey asserted, "There are no crystal balls that can predict the demands of future armed conflict. That is why I believe our ability to learn and adapt rapidly is an institutional imperative."[5] This initial concept resulted in the development of the *Army Learning Concept for 2015* to "improve our learning model by leveraging technology without sacrificing standards so we can provide credible, rigorous, and relevant training and education for our force of combat-seasoned Soldiers and lead-ers. It argues that we must establish a continuum of learning from the time Soldiers are accessed until the time they retire."[6]

To deal with the nature of the contemporary operational environment and re-alize the goals of the *Army Learning Concept*, the Army created Army University (ArmyU). "The Army Operating Concept outlined the challenging, complex nature of armed conflict in the future. Preparing leaders for this complexity demands an improved approach to education. The Army University embodies this improved approach and serves as the intellectual foundation for Army leaders to win in this complex world."[7] In doing so, the Army acknowledged that it needed to create an enterprise of learning consisting of one culture for training and education. To drive the new culture, ArmyU required an engine for institutional learning.

Army University's Center for Teaching and Learning Excellence (CTLE) serves as that engine of learning. The CTLE does this through three primary functions. First, it develops and maintains a framework that captures what the Army wants its professional force to know about its profession. It expresses this knowledge through a core professional curriculum that spreads this knowledge throughout the Army. Second, it develops the Army's multi-organizational cadre of instructors, trainers, course/training program designers/developers into a holistic faculty competent in the science and art of adult learning. Third, it facilitates innovation across the Army enterprise supporting institutional adaptation.

Founding the Center for Teaching and Learning Excellence

The founders of ArmyU developed the concept for a CTLE from a growing best practice among civilian universities and colleges. The idea for such a center sprouted in the 1990s, known as the decade of teaching and learning in the higher education field.[8] During this decade, research in both teaching and learning blossomed with findings that promised to improve the practice of adult education and training. It did so by following a tripartite focus on incorporating faculty's general liberal education, providing a study of educational practices, and developing teaching skills with experiential exercises of the art, science, and skills of teaching.[9] Thus, centers for teaching and learning, though often called by different names, emerged in institutions across the nation and the globe.

Originally these centers were intended as focal points on campus for student learning and to provide support to faculty in their efforts to meet that need.[10] Institutions of higher education realized that the bulk of the professoriate, freshly graduated doctoral students, had extensive knowledge of their field of study and the research methods required to create new knowledge in those areas. Nonetheless, they lacked in-depth knowledge and experience in teaching theory and practice based on empirically sound findings stemming from education research.[11] The centers for teaching and learning provided new faculty with the pedagogical theory and methods needed to teach their disciplines at both the graduate and undergraduate levels. As more universities and colleges started refocusing their priorities from research to student learning, these centers took on consultation services for teacher support, funding incentives, workshops, and some developed into institutes for faculty, instructional, and organizational learning and development.

ArmyU's eight Centers of Excellence (COEs) faced a similar issue as civilian higher-education institutions regarding how to prepare its seasoned and experienced cadre to teach what they knew to their students.[12] While famous for its historic Army War College (AWC) and Command and General Staff College (CGSC), the vast bulk of the ArmyU faculty consists of cadre who are experts in their particular military field, such as artillery, infantry, or cyber but are not necessarily prepared to teach adult learners.[13] Additionally, advanced civilian degrees are not common within the preponderance of Army faculty at its COEs and schools, let alone advanced degrees in education and training. Further, all faculty, including those from the AWC and CGSC, lack a consistent enterprise method to stay abreast of the latest in adult learning sciences and to disseminate to, share with, and learn from other faculty regarding how to better educate or train the Army's student population. In evaluating how civilian institutions of higher learning developed centers to tackle such problems, the founders of ArmyU determined that it required a center of learning, like the University of Texas's Institute for Transformational Learning, if ArmyU was to realize its potential fully.

Subsequently, ArmyU created CTLE by re-organizing existing organizations within the enterprise into three divisions. The first division—the Instructional Design Division (IDD)—evolved from the School of Advanced Leadership and Tactics, which served TRADOC's proponent of the common core for select professional military education (PME) courses. IDD expanded its curriculum development functions and took on the mission to frame and maintain the Army's PME General Learning Outcomes. In doing this, IDD drives new Army professional core curricula as well as ensures the development of common competencies across the Army's officer, warrant officer, enlisted, and civilian cohorts.

A second CTLE division focused on faculty and staff development. This division integrated the Staff and Faculty Division Office from the Army Training Support Center within TRADOC, and the Faculty and Staff Division within the CGSC. This organizational integration combined the resources of these two great organizations and united the training and education approaches to facilitating learning into an adult learning model. CTLE's Faculty and Staff Division (FSDD) not only develops cadre to meet the challenges of teaching the variety of generational adults today (from Generation X to millennials) but also new teaching methods to implement the Army Learning Model (ALM).[14] These new approaches help align teaching with the curriculum developed by IDD for the core curriculum, and the branch specific training and education courses developed by the COEs and schools within the ArmyU learning enterprise.

The third division, the lynchpin of Army learning, is the Institutional Research and Assessment Division (IRAD). IRAD assumed the role of implementing, monitoring, and assessing the implementation of the ALM from the Office of Innovative Learning within the staff of TRADOC. This division serves several important functions. It facilitates the discussion and transfer of education and training best practices between IDD and FSDD, and the faculty and staff of the COEs/schools. It also facilitates the exchange of ideas and best practices with other learning-focused organizations within and outside of the Army, such as the Army Research Institute, the Advanced Distributed Learning Office of the Department of Defense's J-7 staff, and centers of teaching and learning in civilian higher education institutions.

In structuring these three learning divisions within the CTLE, ArmyU gained an engine to articulate the requirements the Army wants its professionals to learn and to provide a way to translate the requirements into an outcomes-driven and competency-based framework Army schools can use to teach their courses and programs. There is an integrated process to develop a cadre who can both train and educate the Army's professionals by facilitating the adult learning principles inherent to the ALM. CTLE is an organization developed with the capacity to not only assess current practices but to maintain the foresight to adopt and integrate new learning practices. This essay now turns to describe CTLEs three core functions in further detail.

Articulating and Teaching the Army's Professional Requirements

As a learning institution, one of the biggest challenges the Army has is identifying and articulating the professional requirements and necessary proficiency for all its members based on their experience, training, and education levels. Modern military phenomena in war such as "other-than-war operations" and counterterrorist operations made the Army question its core identity, given it still saw that identity as fighting the conventional land battle.[15] Army doctrine encapsulates leader requirements in the Army Leader Requirements Model (ALRM) as one way of articulating those professional competencies.[16] However, confusion still exists as to who is a "leader" and if the ALRM applies to all Army professionals. For example, it leaves open the question whether the ALRM applies to those in the Army Civilian Corps who provide critical professional support roles, or it if applies to the entry-level soldiers who are at the lowest rung of the hierarchical chain of command. When looking at the Army profession from a holistic perspective, these questions present a gap between what the profession practices and what the profession's education systems teach. The publication of *The U.S. Army Learning Concept for 2015*, which includes a list of nine twenty-first-century "soldier" competencies further illustrates this gap between describing what Army professional requirements are and how to teach them to all Army professionals in and out of uniform.[17] This gap became most visible in the 850-plus disaggregated general learning outcomes generated across school systems for officers, noncommissioned officers, warrant officers, and civilians to develop the nine twenty-first-century "soldier" competencies.

With the reformation of the School of Advanced Leadership and Tactics into the Instructional Design Division of CTLE, IDD addressed the divide in learning and filled in the gap of how to teach a core set of professional competencies by following the example of other professional higher education institutions. First, it conducted an environmental scan to identify all stakeholders and their various views of the problem. The stakeholders included PME course proponents from all echelons of training and education. These stakeholders included TRADOC's Initial Military Training for the Basic Officer Leaders Course, the Warrant Officer Career College, IDD for the Captains Career Course, the U.S. Army Sergeants Major Academy, the Army Management Staff College, the Institute for Noncommissioned Officer Professional Development, CGSC, and the AWC. IDD facilitated the integration of stakeholder views into four learning areas known as Army learning areas (ALAs), which led to the development of fourteen united and agreed upon general learning objectives (GLOs).[18] The GLOs translated the Army professional learning requirements into a teachable vernacular that allowed COEs/schools to develop program, course, and learning outcomes.

Further efforts by IDD to professionalize the Army's common core curriculum and integrate training and education under one learning concept included the development of the Curriculum Analysis and Development Initiative (CADI). CADI's main idea is to integrate the three learning domains (cognitive, affective, and

psychomotor), a learning rigor and relevance model, and rubrics to assess equivalent credit credentialing opportunities into a lesson plan framework. This combination allows developers of Army training and educational plans and programs to analyze, design, and develop training and education that meet the learning needs of Army professionals. The utilization of the ALA/GLOs and development of CADI help the Army learning institutions and organizations express what the Army already does well in a manner that other civilian learning institutions can recognize. In short, these initiatives serve to establish an outcomes-based and competency-driven professional curriculum for all the COEs/schools within the Army University construct.

Building a World Class Faculty: The Main Effort to Implementing the ALM

To build a world-class enterprise, ArmyU founders recognized that the Army learning institutions and organizations required a world-class faculty consisting of instructors, instructional designers, trainers, and training developers that met professional standards. In fact, one of the key strategic initiatives of ArmyU specifies to build a world-class faculty. However, saying one has a world-class faculty and having a world-class faculty are two separate things.

In universities and colleges, the quality of their faculties is determined by the production of quality research if they are designated a Carnegie Research Institution, or the relative ranking of their undergraduate and professional graduate degree programs if their mission primarily focuses on teaching. The assumption is, if its program is good at producing research and or delivering a highly ranked program of study, then by association its faculty are considered to be excellent as well. Arguably, ArmyU falls into the latter category as it is primarily focused on teaching versus research. However, no category of a professional graduate degree in the military arts and sciences exists with typical rankings such as those issued by the *U.S. News & World Report* on best degree programs.

To fulfill the action implied by the rhetoric in the faculty initiative, CTLE created an Army faculty development program that equally focused on all members of Army faculty based on their level of experience, education, and type of curriculum they taught. It integrated nationally and internationally recognized standards of teaching competencies for adult learning environments.[19] It provided a mechanism to recognize and reward its faculty. It also implemented a process for continued professional development for permanent faculty (consisting mostly of general schedule [GS] civilian members of Career Program 32) and temporary faculty (comprised of longer-term, but still temporary, Title 10 civilians and uniformed military personnel who serve faculty tours of two to three years).

To develop this program, the FSDD followed IDD's approach collaborating with all the relevant stakeholders on how to reform the current staff and faculty development process. The FSDD established various working groups to address each aspect of the Army faculty development program. Through this process, the lead members from FSDD discovered instructors received a good amount of content about adult learning, whereas designer/developers did not. In addressing this shortfall in the Army's faculty development program, one working group developed a foundational instructor course, and another working group developed a foundational curriculum/training developer course. The combination of both courses provided a holistic faculty development program that provides the principles of adult learning to both instructors and curriculum developers. This was a different approach than FSDD initially pursued, which was to build one foundational program that both instructors and designers/developers would attend. However, by listening to the field of experienced faculty and staff developers from the COEs, the working group leaders recognized that while the content had to be similar for both functional types of faculty, the content could not be the same for the two functional cohorts.

Additionally, through this integrative process of including all relevant stakeholders, the leaders of the FSDD working groups found that the application of continuing professional development, rewards, and recognition programs were not consistent throughout Army. For example, both enlisted and civilian instructors can earn badges or certificates (later certified by the American National Standards Institute), while instructors from the warrant and officer cohorts did not. The FSDD worked with the stakeholders to rewrite the Noncommissioned Officer Education System Instructor Development and Recognition Program and worked with the Career Program 32 proponent to develop a new Faculty Development and Recognition Program expanding it to all instructors.[20] Further, while opportunities existed for recognition of excellent instructing, such as the TRADOC Instructor of Year Award, no such recognition existed for instructing and training designers and developers. At the writing of this article, CTLE is developing the standards to recommend a TRADOC Designer/Developer of the Year Award. With IDD focused on developing the "what" for Army Professional Education, and the FSDD focused on the "how" to teach those requirements, the last aspect of CTLE's mission was to enhance the Army Learning Enterprise through a program to ensure innovation in learning.

Staying Ahead of the Latest in Learning Sciences and Innovations

To drive continually adaptive and innovative approaches to both faculty and professional curriculum development, the Institutional Research and Assessment Division (IRAD) of CTLE engages the field of learning science by networking externally with civilian institutions of higher learning and internally to the Army. It networks in-

ternally with Army agencies like the Army Research Institute, which researches leader development; the Office of Economic and Manpower Analysis, which researches talent management, and, the Army Research Lab, which researches the latest in military application of the cognitive sciences. IRAD's primary function is to develop a learning sciences and innovation research program to promulgate best practices and identify innovation that informs the development of learning solutions to capability gaps. IRAD's other functions include overseeing the ArmyU research assurance program, conducting learning program assessments, and acting as a proponent for the *Army Learning Concept* and Army Learning Strategy.

IRAD provides the Army learning requirements perspective to the Army Talent Management Task Force, thus ensuring talent measures include assessments of learning along the career-long learning continuum. In a related initiative, IRAD is supporting The Center for Army Leadership development of the Captains Cognitive Assessment Test (CCAT) as a validated tool for assessing officers at the grade of captain in the areas of cognition and learning motivation. Officers will use the results of the CCAT as a self-assessment for areas in which they can improve aspects of cognition and also learn new techniques to increase their motivation to learn. IRAD has also been at the forefront of ArmyU's involvement in assessing competency-based education as a strategy for improving the quality and relevance of learning across the enterprise.

In short, IRAD serves as both an evaluator of how the Army Learning enterprise is implementing the Army Learning Model and as the conduit, or network manager, that connects and facilitates the exchange of the latest in learning sciences among organizations within the Army, and between the Army and external agencies. IRAD provides the critical and necessary forethought and strategic analysis and planning, and networking required to enable CTLE to help ArmyU manage an adaptive and innovative learning enterprise that will support the Army in solving the problems identified by its operating concept.

Lessons Learned in Founding a Center for Teaching and Learning

In establishing the CTLE, its faculty and staff determined several lessons about the elements that support institutionalizing learning organizations and operating principles that such centers can rely on to foster the success of the Army learning enterprise. These lessons that members of ArmyU's CTLE identified are like those learned from other ventures in establishing centers of learning at civilian institutions. Learning is a "process of enculturation into a community of practice using social interaction among learners and between learners and teachers."[21] Given that, colleges and universities use their centers of learning to address teaching and learning strategies that most assist the learner in a specific learning environment rather than developing tools that instructors should use to manage a particular lesson or course.[22] Members of CTLE

realized that this was the same goal underlying the ALM. Those goals consist of developing the faculty-to-student and student-to-student relationships as a means of learning regardless if the classroom is within four traditional walls, a shady spot under a tree in the field in front of a butcher block of white paper, or in the digital domain of an online and distributed learning environment. Additionally, the goal includes assisting faculty to master not only content (since they are practicing experts already) but also the style and delivery of that content. Thus, ArmyU faculty are less the cause of learning within the learner but rather more the facilitators of that learning.

Another lesson identified is that the rate of innovation and their sustainability in the curriculum of Army COEs/school are enhanced if faculty develop networking connections with each other across the whole enterprise rather than view their branch/occupational skill and discipline as their only affinity group. Developing a community of adult learning professionals in the Army learning system not only helps facilitate adult learning best practices regardless of subject taught but also further professionalizes the training and education communities. This makes for better performance in the classroom and training environments and eventually makes for better learning in the Army overall.

The inverse to the last lesson is that there is no one-size-fits-all learning process. Since one of the principles of adult learning is that each adult learner is responsible for his or her learning, and the focus centers on the learner, the standards of teaching and learning become more important than standardizing the process of learning across several institutions whose context, students, and faculty are vastly different. For an institution steeped in an organizational culture that values standardization due to a belief that standardization is key to winning on the battlefield, this last lesson is probably the hardest to incorporate. Nonetheless, the move toward a learner-centric pedagogical model necessitates that the Army learning enterprise balance the individualized approach with the mass production requirements of running courses with large populations of students.

A final lesson learned is to build stakeholders in the learning process by listening to all perspectives. IDD's and FSDD's efforts in developing the GLOs and the Army's faculty development program demonstrate the value in this lesson. The CTLE occupies a unique place in the structure of the Army's learning enterprise because its mission is to address the learning requirements of the entire Army training and education community. This means that it holds a central position within the enterprise to help manage and facilitate network connections among faculty and staff offices in the Army's COEs/and schools, but more importantly, these network connections provide an indirect conduit to provide feedback from lower teaching echelons to the higher administrative echelons of ArmyU. To facilitate both future innovations to the field and feedback to policy and administrative leaders in the upper echelons of the Army learning enterprise, CTLE needs to continue to address the concerns of all constituencies-faculty from both the education and training communities, upper echelon staff and administrators, and Army civilian and military students.

Conclusion

The founding of the CTLE constitutes not only organizational change, but it also exemplifies institutional development. The CTLE will refashion the norms of Army training and education into norms of Army Learning. With the rewrites of TRADOC Regulation 350-70, *Army Learning Policy and System*s, and TRADOC Pamphlet 528-8-2, *The Army Learning Concept for Training and Education 2020-2040*, the rules for how the Army learning enterprise will operate and develop the Army's agile and adaptive leaders will change to keep Army professionals on top of the latest training and education practices.[23] By creating a center for teaching and learning, the Army took a vital step toward institutionalizing learning not only within resident education and training systems but also throughout the Army. ଔ

NOTES

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Enhancing Learning using Multimedia in Professional Military Education

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Abstract

In 2013, the Army's senior leadership published the *Army Leadership Development Strategy* (*ALDS*), which placed renewed "emphasis on developing Army leaders to meet the security challenges of tomorrow." The *ALDS* outlined a comprehensive approach to implement the strategy outlining an "ends, ways, means" methodology. Within the *ALDS,* the Army Leadership Requirements Model identifies attributes and competencies expected of all Army leaders as the "ends" piece of the methodology.

This article describes the development and evolution of an elective course on organizational leadership conducted at the U.S. Army Command and General Staff College titled Organizational Leadership Case Studies, which uses the Army Leadership Requirements Model as its foundation. Intended to create an innovative learning environment between faculty and students, the course uses a multimedia methodology to enhance the learning of midgrade military officers. Using popular military films as leadership case studies, it requires the officers to analyze and evaluate the leadership attributes and competencies of organizational level leaders that influenced their decision making in combat. Students then deduce implications that relate to their future roles as more senior organizational leaders and commanders engaged in unified land operations. As part of the evolution of the elective, a critical reflection process is described that further enriches this multimedia approach.

For the past decade, the Department of Command and Leadership at the United States Army Command and General Staff College has offered an advanced application course (elective) to the students attending the Command and General Staff Officer Course (CGSOC) that uses military-themed films

as a method to analyze and study organizational leadership. The official title of the course is A724: Organizational Leadership Case Studies, but unofficially it is known as the "Movies for Majors" course. The students who have completed the course have found it both demanding and challenging. In course after-action reviews, it is common to hear from several students that it was the "capstone" leadership course for their entire year at CGSOC.[1] According to both student and instructor survey comments and after-action reviews, the course has proven to be very successful in achieving its stated learning objectives and has also become one of the most popular electives offered at CGSOC during the academic year.[2] The purpose of this article is to describe the development and evolution of Organizational Leadership Case Studies and its use of a multimedia methodology to create an innovative learning environment and enhance the learning of midgrade military officers attending the CGSOC.

The elective builds on the two leadership blocks the students receive earlier in the academic year: L100, Developing Organizations and Leaders, and L200, The Art of Command. The intent of all three blocks is to assist in the student's professional development and prepare them for the organizational leadership challenges they will face in their future. CGSOC students, consisting primarily of junior field-grade officers (majors) and senior company-grade officers (captains) from the five services along with several interagency civilians, spend the first eight months of CGSOC analyzing and discussing a myriad of organizational leadership topics. The two blocks focus on preparing leaders to meet the challenges of the complex, ambiguous, and uncertain world of organizational leadership. Topics include using power and influence to gain commitment in large organizations, leading change, developing an effective climate and managing a culture that solves problems and improves the organization, developing learning organizations, developing ethical organizations, and extending influence through negotiations, to name just a few.

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The students who enroll in the Organizational Leadership Case Studies elective use military films focusing specifically on organizational leaders preparing their units for combat or on their actions and decisions in combat. The case studies and the subsequent focused discussions in class reinforce and enhance their understanding of the many themes and topics analyzed in L100 and L200. The course also increases student self-awareness by assisting them in their ability to interpret the events in the case studies and increase personal understanding as to who they are as military leaders. In the last ten years, educators around the globe have begun to recognize the power that films have as teaching and learning tools within adult education.[3] Numerous articles advocate the effectiveness of using movies to increase student learning in disciplines as diverse as history, English, ethics, medicine, and multicultural studies.[4]

The Development and Evolution of A724: Organizational Leadership Case Studies

Organizational Leadership Case Studies evolved out of another elective that was created in 2000 titled A715: Leadership in Battle. The purpose of the course was to have students "evaluate the competencies and attributes that foster behaviors of organizational-level commanders that weighed heavily on the outcomes of selected battles with the intent of deducing implications that relate to your [the students'] future roles as an organizational-level leader in combat."[5] In 2003–2004, the demand for the course was so high, with over six hundred students signing up for the elective, twelve of the twenty leadership instructors within the department had to teach at least two and usually three iterations of the course.[6]

The instructor paired students together on the first day of the course. Students selected a military operation as a case study to research and analyze. Each pair of officers would have between one and four weeks (depending on order of presentation) to develop a thirty-minute briefing focused on the organizational leaders actions that influenced the outcome of the operation, either positively or negatively. The case studies consisted primarily of twentieth-century battles. Examples included "Meuse-Argonne, 1918," "Tarawa, 1943," "Arnhem, 1944," "Dien Bien Phu, 1954," and "TET, 1968."[7]

To prepare students to be active learners for each case study, the instructor assigned two articles or chapters, providing the historical perspective of the battle. The readings offered depth and breadth that could not be covered in a short briefing and gave the students multiple perspectives to enable them to actively participate in the discussion following the presentation. Upon completion of the briefing, the instructor and the two student briefers would facilitate a more-detailed discussion as to how the organizational leader's competencies and attributes led to behaviors that influenced the outcome of the battle. The discussion would

Figure 1. The Army's Leadership Requirements Model

use the U.S. Army's Leadership Requirement Model (LRM) as a start point (see figure 1). The LRM is the foundational cornerstone of the Army's leadership doctrine and was introduced in Field Manual 6-22, *Army Leadership,* in 2006.[8] The model's purpose was to identify specifically "what a leader is and what a leader does" using the attributes of character, presence, and intellectual capacity, along with eight core leader competencies and their supporting behaviors to convey expectations for all Army leaders.[9] One of the primary intents of A715: Leadership in Battle was to assist in the improvement and development of the leader attributes and competencies as identified in the Army LRM.

Upon completion of the large group discussion, the instructor would break the group into smaller groups of four students each. The instructor would provide each group different leadership questions. The questions were aimed at achieving both depth and breadth of the students' understanding of the case study. Examples include, "How did Col. David M. Shoup, commander of the 2d Marine Regiment, demonstrate mental agility during the initial beach assault against Betio Island?" ("Tarawa, 1943" case study), and "What core leader competencies did Lt. Col. John Frost, commander of the 2d Battalion, Parachute Regiment, demonstrate during his unit's attempt to capture Arnhem Bridge?" ("Arnhem, 1944" case study).[10]

Each student group then briefed the other small groups, generating further debate and discussion. During the last twenty minutes of the class, the instructor would transition to the "so what?" of the lesson by asking several questions such as, "How will you use what you have learned from this case study in your future duty assignments?" or "As an organizational leader, you are responsible for the development of your followers and to prepare them to lead and conduct combat operations in the future. With this in mind, what can you do to develop them from what we examined today?"[11]

To synthesize the information, the students wrote a two-page précis, identifying three attributes or competencies displayed by the organizational leaders analyzed from the case study. More importantly, they had to address how the knowledge they gained from their analysis would be applicable in the future. The students had to submit the précis within forty-eight hours after completing the lesson. This allowed them time to reflect, not only on their perspective but also their peer's perspectives and points of view shared during the large- and small-group discussions in class. Initially, during the first two weeks of the course, students identified that writing the précis was the "toughest" requirements they had to contend with during their entire year at the CGSOC. For the majority of students, their perspective on the value of the written précis changed by the time of the course after-action review. When asked by their instructors if the requirement for a précis should be dropped, almost unanimously they insisted that it remain part of the curriculum, arguing that they found value in being able to take the time to reflect on what they had discussed and learned and then presenting their thoughts in writing as part of their meaning making.[12]

The Evolution of A715: Leadership in Battle into A724: Organizational Leadership Case Studies

The Leadership in Battle elective continued to evolve.[13] Realizing the value of a leadership course that analyzed military organizational leaders and their actions in a combat environment, the A715 course author drafted a proposal for a new course and provided it to the director of the Department of Command and Leadership and the deputy director of the Command and General Staff School. Both were interested in the concept for a new elective but were concerned about the methodology, especially because of the increased emphasis on improving both speaking and writing skills in each course. The A715 course author would not show a two-hour movie in a two-hour class without any instruction or discussion taking place, so he presented a methodology that would embrace a multimedia approach.

The senior leadership of CGSOC approved the concept for the new elective. The first course was taught in the spring of 2008 and was made up of twelve lessons presented over a five-week period with sixteen students in each iteration. A

Step 1: Assumption analysis
It involves thinking in such a manner that it challenges our beliefs, values, cultural practices, and social structures in order to assess their impact on our daily proceedings. Assumptions are our way of seeing reality and serve to aid us in describing the order of relationships.

Step 2: Contextual awareness
Realizing that our assumptions are socially and personally created in a specific historical and cultural context.

Step 3: Imaginative speculation
Imagining alternative ways of thinking about phenomena in order to provide an opportunity to challenge our prevailing ways of knowing and acting.

Step 4: Reflective skepticism
Questioning of universal truth claims or unexamined patterns of interaction through the prior three activities—assumption analysis, contextual awareness, and imaginative speculation. It is the ability to think about a subject so that the available evidence from that subject's field is suspended or temporarily rejected in order to establish the truth or viability of a proposition or action.

(Figure by authors)

Figure 2. Four Essential Steps in Critical Reflection

new process for teaching the course continued to evolve into what is now known as the critical reflection process.

The Critical Reflection Learning Process for Organizational Leadership Case Studies

From 2008 through the spring of 2017, the Organizational Leadership Case Studies course has evolved the use of multimedia to ensure that it continues to create an innovative learning environment and enhance student learning. It incorporates several of the adult learning theories developed by Benjamin S. Bloom and Stephen D. Brookfield.[14] The success of students at achieving the course's learning objectives is based upon a critical reflection process developed by Scott Porter, a CGSOC faculty member who has also taught A724 for nearly a decade. This critical reflection process is a key factor in the student's ability to attain all of Bloom's cognitive learning levels (knowledge, comprehension, application, analysis, synthesis, and evaluation) for each lesson.[15]

These learning objectives, along with recommendations from student feedback, drive the course author's choice for the most suitable military case studies. Material for each case is presented in multiple-media method; typically through scholarly readings, a full-feature historically correct film, PowerPoint presentations, use of white boards, and

3G
Learning objectives and case documentation. (e.g., instructors make adjustments for next term)

3F
Student valuation and feedback on the lesson (e.g., lesson after-action reports [AARs], course AAR, and written survey)

Evaluation

3E
Written individual proposition (e.g., précis)

Synthesis

Instructor assessment and feedback

3D
Reflective skepticism (e.g., meaning-making)

Analysis

3A
New information presented in multiple forms (e.g., readings and film)

Knowledge

3B
Assumption analysis and contextual awareness (e.g., preparation for class)

Comprehension

3C
Imaginative speculation through academic argument and discourse (e.g., contributions to group learning)

Application

(Figure by Scott A. Porter; concepts first presented by Stephen D. Brookfield)

Figure 3. A Critical Reflection Learning Process for Case Method Instruction (Bloom's taxonomy noted in gray boxes)

briefings. As identified by the Committee on Developments in the Science of Learning, led by John D. Bransford, Ann L. Brown, and Rodney R. Cocking, the use of technology to support learning and create new curricula that brings "real-world problems into the classrooms for students to explore and solve" is a primary goal of the course. Furthermore, each of these multimedia methods complement one another by presenting a more dynamic case that appeals to multiple learning styles.[16]

Students attain the Bloom's cognitive learning level of "knowledge" by completing and remembering the assigned readings and watching the film. Because no film can be 100 percent accurate, the readings not only provide the historical facts but also greatly enhance the student's depth of knowledge on the case. Listed in the course's advance

sheet are the learning objectives, leadership themes and topics, and questions to focus on in preparing for each lesson (see figure 3, step 3A, page 62). This focus enables students to prioritize and later recall specific information from the case.

Because CGSOC students already have between eight and twelve years of military experience when they arrive at the start of the course, they can better internalize the case's various leader's actions and decisions. In other words, these CGSOC students, who are field-grade military officers, use their critical reflection skills to leverage past experiences to better examine each case. The course authors of A724 wanted to utilize what the students had learned about critical thinking throughout the entire course and include it within the learning process. Educator and teacher Stephen D. Brookfield identified four essential steps in critical reflection: *assumption analysis*, *context awareness*, *imaginative speculation*, and *reflective skepticism* (see figure 2, page 61).[17] These steps can be aligned to Bloom's cognitive learning levels, especially within the framing, analysis, and discussion of a case (see figure 3, page 62).

Assumption analysis and contextual awareness occurs for the student during his or her preparation for class, and is the first step in critical reflection. (These steps are closely aligned and combined into a single step in figure 3 [on page 62] and in this discussion.) It takes the student from the knowledge level to the comprehension level of cognitive learning (see figure 3, step 3B, page 62). This is because the student understands the information from the case readings and film, and combines this understanding with the student's past experiences. With this combination, students begin to think in such a manner as to have a deeper understanding of the material. This is when they also begin to practice metacognition, or "thinking about thinking," to intentionally question, challenge, and ultimately analyze their own personal and past organizational beliefs, values, and practices. These assumptions are the first step to help understand, in an analytical way, why leaders within the case made certain decisions.

The first and second steps Brookfield states are inevitably connected at the hip, especially when using case method instruction. Besides assumption analysis, students must also understand the case based upon contextual awareness.[18] As noted previously, one's own experiences are valuable but realizing also that one's assumptions must be placed within the broader historical and cultural context of the case. Understanding the context of the case, especially how it is different from the present-day environment, enables students to interpret the case and acquire a better awareness to develop their point of view on a leader's actions (see figure 3, step 3B, page 62). However, the reflection has thus far only been a cognitive process within the individual student. An individual's reflection needs to be verbally shared in interaction with others. Although the other students have been provided with the same information about the case, their experiences and points of view usually are markedly different.

Adult learners within the CGSOC are responsible for their own personal and intellectual growth as well as that of their peers. This includes sharing their own experiences and points of view in an open forum that encourages academic freedom to express

one's thoughts without fear of attribution. This type of classroom environment lays the foundation for Brookfield's third step in critical reflection, imaginative speculation. This occurs in class when a person considers another's alternate way of thinking or point of view alongside their own or the organization's prevalent ways of thinking. In this course, imaginative speculation is conducted through one's reflective thoughts and applied through academic argument and discourse (see figure 3, step 3C, page 62). This is Bloom's cognitive learning level of "application," whereby students use their knowledge and points of view to argue possible solutions to the case's dilemmas and other problems. Through the instructor's facilitating skills to frame the case and stay within the learning objective's limits, students argue their points while also practicing their active learning skills to comprehend other's arguments. When divergent points of view are expressed, students rigorously challenge each other's reasoning and assertions. This application of imaginative speculation provides students the opportunity to improve their active-listening skills, use critical thinking to consider alternate ways of thinking, and practice using their moral courage to assertively verbalize and debate their own and others' perspectives. In Bloom's "application," students practice active-listening and critical-thinking skills to participate in an academic argument and, at times, a healthy discourse. In this way, students learn from the perceptions and informed opinions of others.

At this point in the reflection development, a certain "meaning making" occurs whereby the students move from one experience into the next with a deeper understanding of relationships and the connections to other experiences and ideas.[19] Because meaning making occurs after interaction with others, Brookfield's last step of reflection, reflective skepticism, is where the student reaches Bloom's "analysis" level of cognitive learning by breaking the material down into component parts to determine structures and relationships. This occurs after class, and thus it is important to note that this occurs after assumption analysis, contextual awareness, and especially imaginative speculation, whereby others' ways of thinking are examined (see figure 3, step 3D, page 62).

Turning critical reflection into action, the course authors require students to reach the synthesis level of cognitive learning by integrating these structures and relationships from analysis into a new whole (see figure 3, step 3E, page 62). This is done in the form of students writing an individual proposition or précis for a specific case. The précis for this course is a one-page, single-spaced paper that encapsulates the results of the entire critical reflective process. There are two parts to the process. First, students must concisely assert their suppositions on the competencies and attributes of the case study's key leader(s). Second, and more importantly, students must internalize how this case will be useful to them in the future. This last part is written in the first person as the expectation is that the student will also practice being a forward thinker—that is, how meaning making can be part of lifelong learning in both concept and application in future decisions. Typically, the last reflective part of the student's précis is based upon the major attributes and competences listed in the first part of the paper concerning a key leader in the case study. Instructors provide detailed written (and verbal feedback as

Table. A724: Organizational Leadership Case Studies, AY 17

Movie title	Topic(s)	Time frame
The Crossing	The American Revolution	December 1776
Glory	U.S. Civil War	1861–1865
Zulu Dawn	Anglo-Zulu War	1879
Rough Riders	Spanish-American War, 1st U.S. Volunteer Cavalry in Cuba	1898
Breaker Morant	Anglo-Boer War	1899–1902
The Lost Battalion	First World War, Meuse-Argonne Campaign	1918
Paths of Glory	French Army, First World War	1916–1917
Lawrence of Arabia	British Army in Palestine	1917–1918
The Court-Martial of Billy Mitchell	Inter-War period	1919–1925
Midway	Second World War, U.S. Navy in the Pacific	June 1942
The Bridge on the River Kwai	Second World War, Pacific theater	1942–1943
The Devil's Brigade	Second World War, Special Forces in Italy	1943–1944
The Enemy Below	Second World War, U-Boat Campaign	1943–1944
A Bridge Too Far	Allied Airborne Operations, European Theater	1944
MacArthur	Second World War and Korea	1942–1951
Patton	Second World War, Africa and European Theater	1942-1945
Merrill's Marauders	U.S. Special Operating Forces in Burma	1944–1945
IKE: Countdown to D-Day	Second World War, Normandy Invasion	1944
Valkyrie	German attempt to assasinate Hitler, Second World War	July 1944
The Battle of Algiers	Algerian War of Independece	1954–1962
Lost Command	French Army in Indo-China and Algeria	1954–1962
A Bright Shining Lie	American Advisors in Vietnam	1962–1972
K-19	The Cold War, Soviet submarine operations	1957–1962
We Were Soldiers	U.S. Army in Viet Nam	1965
Bloody Sunday	British Army in Northern Ireland	1972

(Table by authors)

well) to the students on their paper before the next class meeting. In this way, students can use the instructor's feedback to improve on subsequent précis.

At this point of the academic year, the students are knowledgeable enough to judge each lesson using the learning objectives and standards as criteria. Likewise, the students reach the highest level of cognitive learning, evaluation, in this course, evaluating each case against the course standards. Multiple instructors teach the course, so each instructor provides the data in a prescribed format to the course author who then consolidates the data for an instructor after-action review prior to submitting the results and recommendations to the director of the Department of Command and Leadership. This course has proven that by analyzing the attributes and competencies of military organizational leaders from the past, learning from others experience can be accomplished through the use of the critical reflection process.

From the start of the course in 2008 to the present, twenty-five case studies have been developed for the instructors to choose from and then apply the above described methodology to achieve the course learning objectives (see table, page 65).

The Way Ahead

As successful as the course has become for both students and faculty, Organizational Leadership Case Studies will continue to evolve as new techniques in the use of multimedia are reviewed, experimented with, and incorporated into the course. The course has been effective in enhancing the learning of military officers attending CGSOC through the use of an effective multimedia-based methodology. Feedback from both instructors and students supports this assertion.[20] Faculty and students believe that this multimedia approach can be used as part of the leader-development process inherent in every military unit and not just the classroom.[21]

The purpose of this article was to describe the development and evolution of an elective course that uses a multimedia methodology to enhance the learning of midgrade military officers attending the U.S. Army CGSOC. Building upon the two leadership courses the students receive earlier in the academic year—L100, Developing Organizations and Leaders, and L200, The Art of Command—the elective integrates military films as case studies to effectively analyze and study organizational leadership. The students achieve the stated learning objectives through the use of a critical reflection learning process nested with case method instruction. The students who completed the course found it challenged them with rigorous academic requirements, refuting any previous concept they may have had that the elective was nothing more than "Movies for Majors." The last ten years has shown that the Organizational Leadership Case Studies course can and does assist in the student's professional development and will assist in preparing them for the challenges they will face in the future as more senior organizational-level leaders and commanders. ଔ

Notes

1. "Student after-action review and course survey comments," A724: Organizational Leadership Case Studies, academic year (AY) 17 course archives, Department of Command and Leadership (Fort Leavenworth, KS: U.S. Army Command and General Staff School [CGSS]).

2. "Student after-action review and course survey comments," A724: Organizational Leadership Case Studies, AY08–AY17 course archives, Department of Command and Leadership (Fort Leavenworth, KS: U.S. Army CGSS).

3. Pablo Gonzalez Blasco et al., "Using Movie Clips to Foster Learners Reflection: Improving Education in the Effective Domain," *Family Medicine* 38, no. 2 (February 2006): 94–96; Zalika Klemmenc-Ketis and Janko Kersnik, "Using Movies to Teach Professionalism to Medical Students," *BMS Medical Education* 11 (2011): 60; Peter Gallagher, Nick Wilson, and Richard Jaine, "The Efficient Use of Movies in a Crowded Curriculum," *The Clinical Teacher* 11 (2014): 88–93; Syed Hani Abidi, Sarosh Madhani, Aamna Pasha, and Syed Ali, "Use of Cinematic Films as a Teaching/Learning Tool for Adult Education," *The Canadian Journal for the Study of Adult Education* 29, no. 1 (2017): 25–30; Harriet Swain, "Film Can Have a Leading Role in Education," *The Guardian*, 19 November 2013, accessed 14 September 2017, https://www.theguardian.com/teacher-network/2013/nov/19/film-education-learning-tool-inclusion.

4. Ibid.

5. "A715: Leadership in Battle course description," *Advanced Applications Program Method of Instruction Guidebook* (Fort Leavenworth, KS: U.S. Army CGSS, 2008), 77.

6. "A715: Leadership in Battle enrollment numbers," AY04 course archives, Leadership Instruction Division (Fort Leavenworth, KS: U.S. Army CGSS). The CGSOC class for AY04 was 1,475 students.

7. A715: Leadership in Battle enrollment numbers.

8. Field Manual 6-22, *Army Leadership* (Washington, DC: U.S. Government Publishing Office, October 2006), 2–4.

9. Ibid.

10. "Instructor teaching notes, 'Tarawa' case study and 'Arnhem' case study," A715: Leadership in Battle 2003–2004 course archives, Leadership Instruction Division (Fort Leavenworth, KS, U.S. Army CGSS).

11. "Advance Sheet, A715: Leadership in Battle," Appendix B, Leadership Instruction Division (Fort Leavenworth, KS: U.S. Army CGSS, 2005), 7.

12. "Student after-action review and course survey comments," *A715:* Leadership in Battle, AY03–AY06 course archives, Leadership Instruction Division (Fort Leavenworth, KS: U.S. Army CGSS).

13. *Advanced Applications Program Method of Instruction Guidebook* (Fort Leavenworth, KS: U.S. Army CGSS, 2004–2006).

14. Benjamin S. Bloom, *Taxonomy of Educational Objectives Book 1: Cognitive Domain*, 2nd ed. (Boston: Addison Wesley, 1984); Stephen D. Brookfield, "Developing Critically Reflective Practitioners: A Rationale for Training Educators of Adults," *Training Educators of Adults: The Theory and Practice of Graduate Adult Education* (New York: Routledge, 1988).

15. Bloom, *Taxonomy of Educational Objectives*, 62–201.

16. John D. Bransford, Ann L. Brown, and Rodney R. Cocking, eds., *How People Learn: Brain, Mind, Experience and School* (Washington, DC: Naval Academy Press, 2000), 206–13.

17. Brookfield, "Developing Critically Reflective Practitioners," 317–38.

18. Ibid.

19. Ibid. For an excellent description of meaning-making as a process, see Carey W. Walker and Matthew J. Bonnot, "A Better Approach to Developing Leaders," *Military Review* online exclusive, 29 April 2016, accessed 14 September 2017, http://www.armyupress.army.mil/Journals/Military-Review/Online-Exclusive/2016-Online-Exclusive-Articles/A-Better-Approach-to-Developing-Leaders/.

20. "Faculty After-Action Review," A724 Organizational Leadership Case Studies, 1 June 2016; see also David G. Cotter, "Leader Development at the Organizational Level," *Infantry* 104, no. 1 (October 2014-March 2015): 47–49, accessed 15 September 2017, http://www.benning.army.mil/infantry/magazine/issues/2014/Oct-Mar/pdfs/Cotter.pdf.

21. Ibid.

Using Blackboard Learning Management System to Improve Writing Skills

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We teach an elective at the U.S. Naval War College called "Foundations of Moral Obligation" that was developed by Vice Adm. James B. Stockdale almost forty years ago. The course is a primer for different philosophers and schools of thought. It provides an opportunity for students to read, write about, and discuss several classic works of philosophy and literature including original texts by Aristotle, Plato, Kant, Mill, and other contemporary philosophers. The purpose of this essay is to illustrate how we use the Blackboard Learning Management System in the elective to improve student writing and critical thinking skills.

We discovered that a majority of incoming students in both the joint professional military education senior- (JPME II) and intermediate-level (JPME I) courses have not written in an academic environment since their undergraduate years. Most are comfortable with public speaking, and their briefing skills are adequate. However, their writing skills are often lacking simply because they do not write on a regular basis. As staff officers, they are encouraged to cut and paste excerpts from regulations and directives into coherent policy letters. Yet, they are not writing original ideas. It is difficult and even terrifying for many to put their thoughts on paper during a graded exercise for the first time in several years. Tensions mount and apprehension sets in as written requirements are due. Nonetheless, it gets easier the more students actually write and receive feedback on their work.

In the past, students submitted a fifteen-page essay at the end of the trimester, usually about one of the philosophers they studied. The instructors carefully read the essays and provided written feedback after classes were done at the end of the trimester. What is the problem with this model? It is the same process used at many colleges and universities throughout the United States, so it must be considered a best practice.

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However, we implemented a better model to improve students' critical thinking and writing skills. Our students actually write a weekly one- or two-page posting about what they have read using Blackboard. Students post at least one page of questions, comments, criticisms, or points to be explored further to Blackboard two days before class. Students are also required to read each other's comments and to provide a written response to at least two of them. This enables both students and faculty to come to class prepared to engage on the points raised by their colleagues. We actually hit the ground running in class because the discussions have already started. If students find the reading particularly difficult on some point, their posting may ask for clarification—that, too, is a useful contribution in terms of steering our discussion to the points we most need to take up in class. Instructors review and print the weekly postings. Each student receives written feedback and comments on their writing style and the content of their posting prior to class.

A best practice to improve one's writing skills is to write more often and get immediate feedback on your work. As Adm. Jim Stavridis wrote, "Publishing your thoughts for others to see, however, extends the reach of your ideas and sparks a larger discussion, a larger professional conversation."[1] Additionally, each student receives feedback from their peers who comment on the content of the postings made on Blackboard. Peer feedback is often more relevant and valuable to students. Moreover, providing peer feedback allows students to continue to hone their writing skills. In fact, we have seen that some students are often more concerned with the peer feedback than the instructor's comments.

Over the course of the ten-week trimester, we have seen a substantial improvement in the quality of student postings. Errors in grammar, syntax, and style are minimized, and the students' ability to convey their thoughts clearly and succinctly is much improved. The Blackboard model also enables students to spread the workload for written work across the ten-week trimester.

Repetitive writing combined with instructor feedback is clearly a "best practice" to help military learners at both the senior and intermediate levels improve their writing and critical thinking skills. The Blackboard Learning Management System is an excellent tool to accomplish this. ❧

Notes

1. Jim Stavridis, "Read, Think, Write, and Publish," *Proceedings 134*, no. 8/1.266 (August 2008): 16.

The Reflective Military Practitioner
How Military Professionals Think in Action

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We shall not cease from exploration
And the end of our exploring
Will be to arrive where we started
And know the place for the first time.

—"Little Gidding," T. S. Eliot

Volatility, uncertainty, complexity, and ambiguity characterize the contemporary operational environment (COE), requiring military professionals to continuously reflect on the roles, norms, and values of their craft.[1] An apparent accelerated rate of change in the security environment makes it increasingly difficult to predict national security opportunities and threats, and the skills and capabilities needed to address both.[2] Operations Iraqi Freedom and Enduring Freedom have demonstrated the need for rapid change in tactics, techniques, and procedures and our overall approach to campaigning. They have proven that the more complex the COE, the more the body of professional military knowledge must remain in a state of purposeful instability.

One can define "professional knowledge" as information that members of the profession believe provides meaning and value in promoting understanding of how things work in their field.[3] A profession constructs and shares its unique body of abstract knowledge through social processes. Over time, the existing body of knowledge and the ongoing socioprofessional processes that create and maintain it come to constitute paradigmatic thought, a model of effectiveness.[4] As theorist Donald Schön has observed, the network of experts and organizational leaders and the clients they serve who accept this model believe the paradigm to be so unique that laymen can neither understand nor apply it.[5]

Don Snider of the U.S. Military Academy deserves credit for renewing interest in the notion of the Army as a professional institution. Snider rightly raises a number of questions about the state of the profession. In two editions of *The Future of the Army Profession*, Snider and his coauthors express concern over the degree to which bureau-

cratic hierarchy is supplanting professionalism.[6] Through these edited works we are re-acquainted with the essential elements of professions, specifically, that they are "exclusive occupational groups applying somewhat abstract knowledge to particular cases."[7] It is hard to overemphasize the importance of abstract knowledge to professions. Snider argues that healthy professions deliberately control and develop their bodies of knowledge to service their clients and to compete for dominance in a professional jurisdiction.

If the military were to lose society's trust in its ability to apply its unique form of knowledge, or if it should fail to differentiate itself from other groups that provide similar services, it would also lose some of the autonomy granted to it as a profession. In one of the classic works on professions, Andrew Abbott calls abstract knowledge the "currency of competition between professions."[8] Snider confirms this when he says, "The coins of the professional realm are expertise and the knowledge underlying it."[9] Reflective practitioners and good stewards of professions encourage habits in themselves and subordinates that develop and improve a profession's underlying body of knowledge. In this article we examine the means by which the Army develops, maintains, and judges its body of abstract professional knowledge. Our conclusion is that practitioners and good stewards of the profession apply what Schön describes as "reflective practice."[10]

The military contributes to, and draws upon, several traditional repositories of professional knowledge, including doctrine, journals, magazines, published assessments, and various meetings and conferences. The advent of web-based knowledge forums and electronic mail has opened up both formal and informal collaborative opportunities. Robust interaction with peers, subordinates, and superiors engaged in training and operations, or in research and education, ensures the professional military body of knowledge remains in an ongoing state of flux and transformation.[11]

Yet, despite these visible signs of flux and transformation, few have written about how the knowledge process works. How is a professional body of knowledge transformed? How should professionals reflect on their knowledge? How should they judge the quality of the professional body of knowledge? What are the implications for the profession's senior leaders and clients? Answers to these questions are important to military professionals and senior leaders, to research and education institutions, and to Congress in its oversight role.

How Professional Knowledge is Transformed

Educational theorist David A. Kolb developed one of the most intuitively appealing theories of knowledge to assess students' learning styles. Today, the U.S. Army Command and General Staff College uses his archetype to promote professional military education.[12] Kolb's "experiential" learning model presents a complex view of knowledge formation. Although Kolb developed his model to provide insights into how normal individuals learn from experience, his theory has clear application as a vehicle for think-

ing about professional knowledge development. His four-stage framework recapitulates how bodies of knowledge are continuously grasped and transformed.[13] At various levels of internalization—from a tacit state of apprehension to a consciously knowing state of comprehension—knowledge transforms through *active experimentation, concrete experience, reflective observation,* and *abstract conceptualization.* The last phase constitutes a generalization of technique to be applied to future experience.

Kolb describes four forms of knowledge that appear at various stages in the process of professional knowledge formation and reformation: *divergent, accommodative, convergent,* and *assimilative.*[14] Let us examine Kolb's theory and consider how social processes contribute to changes in the professional body of knowledge over time.

Divergent knowledge. Divergent knowledge is gained from reflective observations of experiences by participants who come from an assortment of disciplines, professions, and occupations. They bring diverse roles, norms, and values together for a common interest, usually motivated by a shared realization that they face complex or chaotic situations where old knowledge is no longer sufficient.[15] In some cases the situation confronted is so different and challenging and the existing perspective is so inadequate that it necessitates a new frame of reference and model of effectiveness—a paradigm shift.[16] In this case, the eclectic participants are linked by their thirst for new knowledge, perceived by them as necessary for setting new conditions, perhaps for an emerging profession. They work to reconstruct reality by developing new, sometimes radical frames of reference.[17]

At this point, new professional roles, norms, and values are only loosely defined because learning categories and their interrelationships are exploratory. Informal groupings of like-minded leaders from varying backgrounds come together, all attempting to grapple with an indefinable state of knowing. For example, the Army's

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Louisiana Maneuvers of 1941 may have been a critical rally point for a group of diverse thinkers who helped transform a cavalry-based Army into a motorized Army.[18] The quality of professional relationships at this stage is important. Nondefensive interpersonal communications, shared trust, commitment, and enduring optimism are critical to offset the stress and anxiety associated with exploratory learning and the ever present risk of surprise and failure.[19] During this period of formation, alternative professional viewpoints emerge.

Accommodative knowledge. Based on shared concrete experiences and active experimentation, accommodative knowledge emerges when newly forming professional networks begin to extend more intuitive kinds of knowledge into forms that entertain new assumptions and beliefs on a broader scale. Professionals begin the process of examining the otherwise unexaminable when they combine concrete experience with *action research* (i.e., dynamic experimentation).[20] This activity requires flexibility of thought (e.g., temporarily suspending disbelief in other ways to frame or make sense of the COE) while accepting more unstructured and intangible ways of active inquiry (e.g., developing awareness about dealing with an active insurgency in Iraq when known technology does not seem to be effective).[21] In this stage, active experimentation is vital to learning. As experience with highly complex and unique situations develops from experimentation and trial and error, a growing sense develops that existing technology is inadequate.

Convergent knowledge. Convergent knowledge is knowledge that coalesces as the emergent network begins to make sense of the world in a collective way and passes this knowledge to other members. Thus, highly abstract concepts transform into realizable knowledge goals and objectives that can be institutionalized as technical comprehension.[22] Institutional performance depends on this more understandable and evaluated professional knowledge about cause-and-effect relationships. The institution begins to formulate rules and structure to gain control over the growing body of knowledge so that convergent knowledge can be more efficiently shared. New specialist categories form or old ones renew.[23] For example, the Army developed its Special Forces (SF) around divergent knowledge about fighting proxy wars in the 1950s, but it did not consider SF worthy of a separate branch until thirty years later.[24] Case studies, readings in theory, and time to reflect on one's current context and recent activity are helpful to test convergent knowledge in education and research endeavors.

A negative aspect of convergent knowledge is that the uncritical or naïve practitioner may help perpetuate a "cultural myth" as dogma rather than facilitate self-correction of the professional body of knowledge.[25] Continuous professional reflection and application of good habits in critical thinking help members sustain the body of knowledge. They also help the profession's societal clients make sense of a rapidly changing environment.

Professionals understand that convergent knowledge is a temporary state and work to prevent the body of knowledge from becoming stagnant, blinding all concerned from

a more insightful future construction of reality that is always around the corner. U.S. Joint Forces Command "pre-doctrinal" pamphlets and Army interim field manuals are examples of convergent knowledge that extends beyond a shared sense of apprehension and emerges as a more interpretable, shared comprehension.[26]

Assimilative knowledge. We see assimilative knowledge when it is transformed into institutionalized technology; for example, in the form of records, rules, doctrine, textbooks, approved lessons learned, programs of instruction, and other structures that begin to modify roles, norms, and values within the community.[27] In the military's case, tasks, conditions, and standards of work technology become routinized; they are enforced by the profession and, eventually, by the institution's bureaucratic hierarchy and rule structure.[28] The irony here is that an inherent inertia develops. An institution often overvalues the overt qualities of assimilative knowledge and creates bureaucratic or mechanistic structures that stifle innovation, thereby crippling professional progress. Aspects of more intuitive divergent and accommodative knowledge explorations go orphaned.[29]

Overly structured training, hierarchically supervised professional military educational programs, extensive procedural rules designed to standardize job performance, and other strictures can create an intractable situation, a procrustean bed that bars divergent and accommodative knowledge from the field and leads to the dismissal of research outcomes. Programmed knowledge appeals to senior managers because of perceived certainty derived from institutionalized metrics frequently associated with technology. Routine and habit are the hallmarks of technocratic bureaucracies. Such comfortable standardization possesses an attraction that devalues divergent alternatives.

There is a way to address this propensity to engineer assimilative knowledge. Professionals should avoid scientizing and reifying assimilative knowledge at inappropriate levels of discourse.[30] When reification occurs, "the way things get done around here" becomes "the only way to do things around here," resulting in a serious obstacle to knowledge production.[31] To put it still another way, professionals must be cautious not to take for granted this seemingly settled body of knowledge about technical cause-and-effect relationships. As they practice the profession, they should continuously uncover and question the unseen underlying apprehension that still exists from the divergent stage and take action to confirm or change their apparent technical comprehension. As implied by the title of this article, this continuous professional inquiry is called *reflection-in-action*.[32]

Reflecting on Professional Knowledge

Effective professionals realize that assimilative knowledge can be the most difficult to challenge because its meaning and use can appear so rational as to be technically unquestionable. Overcoming what amounts to a myopic belief in assimilative knowledge

is even more difficult because intuitive logic (the hallmark of accommodative and divergent knowledge forms) can be nearly impossible to articulate.[33] According to Schön, the apparent validity and infallibility of technical rationality constitute a "competency trap" in which unquestioned belief creates less effective professionals who become the "self-serving elite who use science-based technique" as their "masquerade of extraordinary knowledge."[34] Technical rationality is a perspective that assumes complete knowledge of cause-and-effect relationships based in principles originally derived from Cartesian philosophy.[35] This sense of "rationality" errs by applying Newtonian scientific method to abstractions; in essence shoehorning discourses of physical science into the understanding of conceptual mental processes. George Bernard Shaw once defined this trap as a dangerous façade that can be created by use of assimilative jargon, a phenomenon he described as a "conspiracy against laity."[36] For Schön, the cure for unquestioned belief in technical rationality is professional *reflection-in-action* that is "central to the 'art' by which practitioners sometimes deal well with situations of uncertainty, instability, and value-conflict."[37] In addition,

> a practitioner's reflection can serve as a corrective to overlearning. Through reflection, he can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness, which he may allow himself to experience.[38]

Schön makes a strong case that technical rationality can dominate professions to the point that members lose track of the interdependent complex interactions that make each case unique. Professionals become

> locked into a view of themselves as technical experts, [and they] find nothing in the world of practice to occasion reflection. They have become too skillful at techniques of selective inattention, junk categories, and situational control techniques, which they use to preserve constancy of their knowledge-in-practice. For them, uncertainty is a threat; its admission a sign of weakness. Others, more inclined toward and adept at reflection-in-action, nevertheless feel profoundly uneasy because they cannot say what they know how to do, cannot justify its quality or rigor.[39]

Note the ironic turn in Schön's last sentence, where he suggests a requirement to accept uncertainty while recognizing the call for quality and rigor. Schön speaks to this tendency toward dogmatic simplification as follows:

> When [the professional] is confronted with demands that seem incompatible or inconsistent, [he] may respond by reflecting on the appreciations which he and others have brought to the situation. Conscious of a dilemma, he may

attribute it to the way in which he has set the problem, or even the way in which he has framed his role. He may then find a way of integrating or choosing among the values at stake in the situation.[40]

The complexity of the COE makes each situation contextually unique. Hence, true professionals have to reflect on what the profession may otherwise take for granted and understand how to challenge assumptions. This happens naturally when one sees assimilative knowledge as ineffective; then, the more intuitive divergent knowledge process gains value. In these cases, professionals become researchers-in-action, as professional learning becomes a complex process of adaptation in the midst of epistemic paradox.[41] To Kolb, real professionalism involves considering the value of all types of knowledge simultaneously, no matter how contradictory they seem.[42]

The professional who reflects-in-action pays attention to, and acts on, the environment through paradoxical use of divergent, accommodative, and convergent forms of knowledge, especially when assimilative knowledge does not seem to be working. In that regard, stewards of the profession want the profession's field practitioners and de facto researchers to be able to challenge role assumptions, normative beliefs, and established values in order to determine their relevancy for the reality they are facing. This challenge demands a soft heuristic (rule of thumb) process rather than a hard scientific one since the quality or aptness of a body of knowledge cannot be scientifically deduced in the same way Descartes applied Newton's empirical methods to philosophy. Professional judgment requires the challenging of assumptions, even those behind the paradigmatic Westernized scientific view. It necessitates a philosophical perspective that embraces the possibility of divergence rather than an ideological perspective that seems to enshrine assimilative knowledge as objective certainty.[43]

In that regard, we see the purpose of officer professional development as not only teaching convergent and assimilative knowledge forms, but also creating opportunities for exploring and practicing judgment on divergent and accommodative knowledge.[44] Additionally, we propose that military doctrine should reorient the professional community more on collaborative inquiry and collective judgment and lessen dependence on the convenient mythology of accepted technique or "best practices" passed down by authority with the stamp of "science" on them. Relying on the dogma of received wisdom founded on closed epistemic evaluations ultimately could serve to deprofessionalize the military through chauvinism.[45]

Assessing the Body of Knowledge

In a process that parallels reflection-in-action, professionals ideally judge and make sense of knowledge across a spectrum ranging from an unquestioned belief in the certainty of assimilative wisdom to a radical, divergent form of skepticism
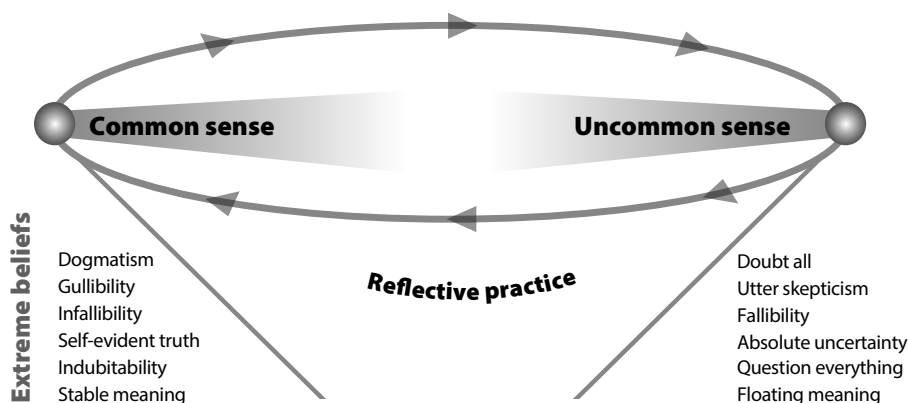
(Figure by authors, based on ideas from Stephen C. Pepper's *World Hypotheses: Prolegomena to Systematic Philosophy and a Complete Survey of Metaphysics* [Berkeley, CA: University of California Press, 1942], 44)

Figure. The Continuum of Judging Knowledge Involves Paradoxical Thinking

(see figure).[46] Professionals appreciate and judge expert knowledge by acting all along the spectrum. At its best, in a process that entails paradoxical thinking while acting, a judgment appreciates opposing perspectives simultaneously.[47]

Professionals and stewards of the profession recognize that practicing the art of professional reflection-in-action is less risky in genuinely collaborative situations where *learning* is more valued than *knowing*.[48] In hierarchical organizations, on the other hand, especially during crises, the pressure to conform to a professionally acceptable body of technical knowledge can be tremendous—we tend to value those who have the temerity to resist such pressures, but only if they are right.[49] In that regard, Aaron B. Wildavsky's concept of "speaking truth to power" can be one of the most heroic things professionals do.[50] The profession should consider as courageous those who speak such truth to those in authority who are not receptive. It should judge as virtuous senior officials who allow and encourage the naked truth to be spoken freely to them.

Successful collaboration in a professional network across the stages of knowledge requires participants to appreciate existing opinions and arguments while striving to understand and appreciate new ones. This can be a challenge when those proposing the new approach have not yet developed sufficient language to fully describe what they are intuiting. Effective collaborative professional communities seek educated, well-thought-out judgments. They are skeptical of dogma characterized by unchallenged and unsubstantiated beliefs and equally suspicious of extreme doubting that bears no possibility of closure. Paradoxically, a professional social system supports both common and uncommon inquiry because they are the lifeblood of the profession's body of knowledge, facilitating its accumulation and maintenance. Professionals should freely admit that they are unable to judge what they have not yet learned. Socratic wisdom rests on the admis-

sion that one does not know when and how the opportunity for learning will arise. The task of collaboratively shaping social interrelationships is anchored in the professional's shared passion for knowledge—revealed in the sociological theory of roles, norms, and values.[51] As repositories of knowledge, human beings (including professionals) develop roles, norms, and values as forms of knowledge through a socially constructed process.[52]

Roles. Roles are the most visible aspect of this social construction. They are standardized patterns describing the behavior required of all persons playing a given part in society. Roles can differentiate one organizational position from another. A role reflects the recurring actions of the individual playing it. It is appropriately interrelated with the repetitive activities of others so as to yield generally predictable outcomes. When individual roles are combined, people create a "social system" or "subsystem." In the case of the military, role-playing is ubiquitous. Titles like commander, staff member, family support group leader, enlisted soldier, and staff college professor all represent visible, descriptive role categories.

Norms. Less visible social manifestations than roles, norms reflect the general expectations of role incumbents within a social system or subsystem. Norms imply or explicitly prescribe ethics that people interactively create and refer to in order to sanction behavior. As such, norms have a specific "ought" or "must" quality. Norms formally (through organizational procedures) or informally (through interpersonal relationships) shape the way roles are performed. Some examples we are familiar with include "commanders ought to be honest and fair;" "all officers are leaders;" "senior NCOs should speak for the enlisted population after getting to know them personally;" and "the military decision-making process (MDMP) is the best way to approach planning for U.S. Army full-spectrum operations."

Values. The least visible of social manifestations, values are generalized ideological justifications for roles and norms. They express aspirations that inform what is required for action.[53] Values are more culturally rooted than roles and norms, and they serve as the often unseen, frequently tacit backdrop that drives criteria for making judgments about knowledge. Like roles and norms, values may be *espoused*—stated deliberately and formally by the institution. The U.S. Army's "Soldier's Creed," for example, is a bluff declaration of the values the Army wants its members to inculcate ("I will never quit. I will never leave a fallen comrade. I am disciplined, physically and mentally tough …") On the other hand, values may be *in use* as cultural phenomena, passed from one generation to another as deeply hidden or tacit forms of assimilated knowledge.[54] If the espoused values approximate or are equal to those in use, the profession can approach a state of social equilibrium among itself, the institution, and clients.

Single- and double-loop learning. Harvard professor Chris Argyris refers to the process of sustaining assimilative knowledge, in which associated roles, norms, and values go unchallenged, as *single-loop learning*. In its worst form, the profession, institution, and clients all firmly believe that they will continue to be successful with the knowledge they have. Faith and certainty feed off each other in a continuous

The Soldier's Creed

I am an American Soldier.

I am a warrior and a member of a team.

I serve the people of the United States, and live the Army Values.

I will always place the mission first.

I will never accept defeat.

I will never quit.

I will never leave a fallen comrade.

I am disciplined, physically and mentally tough, trained and proficient in my warrior tasks and drills.

I always maintain my arms, my equipment and myself.

I am an expert and I am a professional.

I stand ready to deploy, engage, and destroy, the enemies of the United States of America in close combat.

I am a guardian of freedom and the American way of life.

I am an American Soldier.

The U.S. Army Soldier's Creed

loop. Theoretically, in a more stable COE, this may be a successful strategy with which to judge knowledge (i.e., "it works, therefore why look for alternatives?"). However, this strategy is not considered viable in the midst of a perceived unstable COE with inherent fog and friction. As a remedy, Argyris describes *double-loop learning*, the ability to suspend deeply-held beliefs, no matter how successful they have been, in order to value alternative forms of knowledge (what Kolb termed "accommodative and divergent forms of knowledge").[55]

Defensive routines. Even when professionals and institutional leaders embrace double-loop learning as the preferred strategy for judging knowledge, *defensive routines* can inhibit the process.[56] Defensive routines are emotional responses to alternative beliefs, values, and assumptions about assimilative knowledge, and they discourage all but single-loop learning.[57] A few notable examples of defensive routines include

- *Irony of success*, a form of single-loop learning in which a reinforcing cycle of persistence causes leaders to "bask in past successes" and increase their collaboration with those of like mind, rather than recognize the need for change."[58] Psychologist Irving Janis called this like-mindedness and excessive desire for cohesion *group-think*. According to Chamu Sundaramurthy and Marianne Lewis, groupthink is "a pattern of collective defenses aimed at denying or suppressing tensions;" it is associated with a shared comfortable feeling about known technology.[59] Repeated success can help build huge egos and contribute to a situation in which admitting that one can learn is tantamount to admitting weakness. In this case, Argyris concluded through his clinical research that "it can be

especially difficult for smart people to learn not because they have little to learn but because they have a lot invested in appearing not to need to."[60]

- *Faulty attribution*, a process that works two ways: by blaming failure on a mythical belief or a scapegoat, or by taking (wishful) credit for success in a way that inspires overconfidence. Both cases reduce incentives to question the real causes of good or bad performance.[61] In U.S. Army culture, for example, there is a tendency to attribute success or failure to the technologies of leadership and/or training when there may, in fact, be alternative explanations.[62] The Army has a similar problem with nonattribution of its official doctrine (a written source of technology), which is published without proper citation of the sources of knowledge.[63]

- *Threat rigidity*, also known as "hunkering down" or entrenchment. This mindset occurs when already-formed beliefs are retained in the face of conflicting information or even impending failure. Denying or marginalizing such disconfirming information results in psychological inertia, which is often accompanied by escalating commitment to the failing course of action. Using outsiders to assess new information and being open to their findings can help override this type of defensive routine.[64] For example, the Army should seek alternatives to assimilative knowledge beyond the readily available pantheon of retired military officers engaged in defense consulting work and those associated with what President Eisenhower dubbed "the military-industrial complex."[65] Such quasi-insiders bring valuable knowledge about the inner workings and culture of the military, but they may find it difficult to provide the outsider's view that could be more useful in countering threat rigidity.

- *Excessive use of bureaucratic controls*, which occurs when management overuses performance metrics, rules, and regulations that squelch professional knowledge adaptation and increase the probability of transaction-style leadership.[66] Professional problems often call for non-routine solutions. Yet routine solutions are observable in many organizations' excessive use of management-by-objectives-type performance evaluations as well as statistical controls found in popular concepts such as "reengineering," "balanced scorecard," "Lean," and "Six Sigma." Excessive administrative controls on the use of known technology stifle experimentation and innovation; plus, they inhibit learning essential to the production of divergent and accommodative knowledge.[67]

- *Myopic decision-making.* When decisions are tied to an inflexible set of criteria or a set technology, the result is myopic decision-making. In this mindset, learning usually entails comparing the results of a single course of action against potentially factitious standards, thus fueling low-risk, single-loop learning while "discouraging more frame-breaking innovations and change."[68] One could argue that the MDMP espoused by U.S. Army doctrine falls into this category.[69]

- *Impression management.* In this defensive routine, the individual or organization fixates on a facade of performance. (In the case of the military, this is often a

facade of readiness.) This mode privileges form over function, overlooking substantive performance. Impression management distorts communications and intensifies information asymmetries among hierarchical levels of organization, thereby inhibiting effective decision-making and fueling suspicions.[70] Such masquerading amounts to a technology of deception.

Implications for Senior Leaders and Clients

When senior officials of the institution are also active members of the profession, they should function as *stewards*. According to Webster's *Unabridged Dictionary*, a steward is "one called upon to exercise responsible care over possessions (time, talent, and treasure) entrusted to him." Stewards of a profession are intrinsically motivated to act in the best interests of their clients. In the case of the U.S. military, we might describe the ultimate client as the American people constitutionally represented by elected and appointed officials. Good stewardship entails not only accomplishing assigned missions but also propelling the entrusted profession to new heights by setting conditions for the forms of knowledge outlined above to work eclectically, simultaneously, and without encumbrance.[71]

By providing opportunities to experiment and fail, effective stewards set the conditions for high-quality collaborative inquiry into divergent knowledge. Accepting thoughtful, open, and honest feedback, they encourage and share a passion for creativity among professionals.[72] They appreciate the uncertain nature of divergent knowledge and the need to curtail preemptive, hierarchical-style decision-making where it is not warranted. Stewards learn to defer to and encourage those professional knowledge explorers who have the potential to be the artful framers of a transformed paradigm.[73] The steward's role is to help set conditions for *action research* with other professionals in the absence of the clarity, accuracy, and precision so appealing to the technically rational mindset.[74] Under the right conditions, the professional practice of action research will occur naturally in the field during strategy sessions, operations, training, and educational opportunities.[75] Action research, we argue, is essential to all levels for adaptation and survival in the COE.

One way those in senior institutional positions can best steward the accumulation of professional knowledge is by providing sufficient resources for experimentation. We should not underestimate the challenges such a goal presents. In the military, justifying budgets for exploring divergent knowledge could be considered cost-prohibitive. Moreover, the planning, programming, budgeting, and execution process calls for predictions of clearly identified problems, milestones, and technical solutions.[76] Good stewards are aware that the emergent knowledge professionals report can prompt institutional bureaucrats to converge or assimilate it, entrenching with comforting myths while paying less attention to or summarily dismissing more divergent views.

Deciding too early on a course of action in the MDMP, the Joint Capabilities Integration and Development System, or in an acquisition system milestone approval process are examples of impulses to converge knowledge too quickly. The cultural propensity to employ analytical decision-making at early stages of knowledge development may prematurely close on possibly attractive solutions rather than allow accommodative knowledge to develop further. The wise steward fights the impulse to rush to cost-benefit analysis or ORSA-style decision-making when knowledge is in the process of being explored.[77] Effective stewards of the military profession facilitate multiple perspectives and invite nonmilitary sources to develop theories, based on emergent forms, that enhance double-loop learning. They also convince their political clients to fight the impulse to suppress and under-resource activities in the divergent and accommodative stages of professional knowledge development. The steward's shaping task, then, becomes a matter of not only encouraging professional action research and consideration of alternatives, but also reducing or eliminating defensive routines that might interfere with double-loop learning.[78]

In addition to dealing with systemic or culturally embedded defensive routines, the good steward of the profession ensures that a diversity of knowledge types is working simultaneously and that multiple perspectives are available. In short, the steward shapes conditions for critical evaluation of the profession's corpus of expert knowledge.[79]

To recapitulate, the institutional conditions necessary to sustain the professional body of knowledge exist when

- Professional reflection is facilitated by valuing the processes that challenge assimilative knowledge (i.e., continuous truth seeking) and by embracing the inevitable conflict associated with truth seeking.
- Professionals are encouraged to "speak truth to power" despite bureaucratic pressures to conform to a body of assimilative knowledge.
- Double-loop learning and action research are institutionally valued processes whereby knowledge is created and reformed, and where the conditions are sometimes set for a complete paradigm shift.
- Stewards of the profession set conditions for an institutional climate that enables patterned, sound judgments about the condition of divergent, accommodative, assimilative, and convergent professional knowledge.
- Effective stewards help shape professional roles, norms, and values that set the conditions for all of the above.

Professional reflection-in-action requires free and open dialog, so that effective collaborative judgment across Kolb's forms of knowledge can occur. Professionals who aspire to action-research practices should—

- Advocate positions as forthrightly as possible, but do so in a way that encourages others to question them.
- Ask for a better-supported argument whenever someone states a disagreeable position or help the arguer better assess the position.

- Use illustrative data and make lucid, cogent arguments when evaluating another person's argument. Clearly articulated reason, rather than authority, should serve as the standard for assimilated knowledge.
- Apologize if, in the process of professional discourse, you act in ways that appear to upset others. Assure them that this was not the intention (provided that is genuinely the case) and state the intent and the reasoning behind it.
- Ask for the reasoning behind actions that you find upsetting, in order to understand the other's intentions.[80]

Summary

The military profession's health depends in no small part on the accumulation and maintenance of a specialized body of abstract knowledge. In this article we have argued that in a COE characterized by complex and rapid change, good habits of reflective practice are essential to adapt the professional body of knowledge effectively. To develop such practices, an understanding of how professional-knowledge social processes work is beneficial, especially for stewards of the profession. Good stewards of the profession set the conditions for collaborative inquiry and are appreciative of Kolb's four-part framework of knowledge. ○ଃ

NOTES

Epigraph. T. S. Eliot, "Little Gidding" in *Four Quartets* (New York: Mariner Books, 1968).

1. Some examples that agree include the anthology projects of Don M. Snider and Gayle L. Watkins, *The Future of the Army Profession*, 1st and 2d eds. (Boston: McGraw-Hill, 2002 and 2005); Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Boston: Belknap, 1957); Andrew Abbott, *The System of Professions: An Essay on the Division of Expert Labor* (Chicago: University of Chicago Press, 1988); Andrew Brien, "Professional Ethics and The Culture of Trust," *Journal of Business Ethics* 17, no. 4 (1998): 391–409.

2. We say "apparent" because there is little reason to expect today's COE to be any more complicated than it was, for example, in 1939, when Nazi Germany invaded Poland and the United States was ill-prepared for the coming world war. The same applies to the Korean and Vietnam wars, and during the Cold War, for that matter. Nevertheless, with the advent and potential proliferation of nuclear weapons and the potential for other weapons of mass destruction, we think the world is at least more dangerous than it ever has been. For a discussion of the propensities for current generations to believe they inhabit the most turbulent environment, see Henry Mintzberg, *The Rise and Fall of Strategic Planning: Reconceiving Roles for Planning, Plans, and Planners* (New York: The Free Press, 1989), 203–9.

3. Adapted from Jeffrey Pfeffer, *Organizations and Organization Theory* (Cambridge, MA: Ballinger, 1992), 227–28. We would add (and argue in this essay) that knowledge is also about the way that things could or should work as well; hence, it can be unsettling.

4. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3rd ed. (Chicago: University of Chicago Press, 1996), 175. For Kuhn, "paradigm" "stands for the entire constellation of beliefs, values, techniques, and so on, shared by members of a given community."

5. Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983).

6. Snider and Watkins, *The Future of the Army Profession*.

7. Andrew Abbott, *The System of Professions* (Chicago: University of Chicago Press, 1988).

8. Ibid, 9.

9. Snider and Watkins, *The Future of the Army Profession*, 13.

10. Schön, *The Reflective Practitioner*.

11. For example, witness the joint community's use of predoctrinal publications and the U.S. Army's use of interim field manuals, both of which signify the near-impossible attempt to keep up with learning as it occurs in the field or in the schoolhouses. Quoting Greek philosopher Heraclitus, Gareth Morgan provides this metaphor of flux and transformation: "You cannot step twice in the same river, for other waters are continuously flowing on," Gareth Morgan, *Images of Organization* (Thousand Oaks, CA: Sage, 1997), 251.

12. David A. Kolb, *Experiential Learning: Experience as the Source of Learning and Development* (Englewood Cliffs, NJ: Prentice-Hall, 1984). The U.S. Army Command and General Staff College (CGSC), Fort Leavenworth, Kansas, has used Kolb's model and assessment instruments to inform its educational philosophy, faculty development programs, and curriculum. One of the authors recently attended a weeklong CGSC faculty development program in which Kolb's theory was applied to the seminar-style classroom.

13. This continuum is also explained by Kolb as being linked to the left and right hemispheres of the brain—the left associated with comprehension and the right with apprehension (Kolb, *Experiential Learning*, 46–49). According to Michael Polyani, such tacit knowledge is "a way to know more than we can tell," Polyani, *Tacit Dimension* (Garden City, NY: Doubleday, 1966), 18.

14. Kolb, *Experiential Learning*, 121–31. Kolb describes the process of social learning as "living systems of inquiry" and even links these forms to various careers, professions, or occupations. For example, he cites research that demonstrates possible linkages between the science of engineering and convergent knowledge preferences (science-based professions). Chemistry is associated with assimilative knowledge preferences; historians and psychologists with divergent knowledge; and, business people linked more to accommodative knowledge structures (more contextual in nature).

15. Karl E. Weick, *Sensemaking in Organizations* (Thousand Oaks, CA: Sage, 1995).

16. This essentially recapitulates Kuhn's thesis about how scientific revolutions come about.

17. For a detailed account that confirms this divergent process, see Mitchell Waldrop's *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Touchstone, 1992). Waldrop tells the story of how scientists from diverse fields of study formed the Santa Fe Institute, which established complexity science as a legitimate field of study.

18. Generals Omar Bradley, Mark Clark, Dwight D. Eisenhower, George Marshall, and George Patton were all present.

19. Karl E. Weick and Kathleen Sutcliffe, *Managing the Unexpected: Assuring High Performance in an Age of Complexity* (San Francisco: Jossey-Bass, 2001).

20. Some have investigated the analogy of how ant colonies learn—where a kind of "swarm intelligence" emerges. See John H. Holland, *Emergence: From Chaos to Order* (Boston: Addison-Wesley, 1998). The concept of action research was developed in the 1940s by the late MIT social psychology professor Kurt Lewin, who turned away from a best-practices approach to solving complex social problems in favor of a *dynamic, real-time method of theorizing while practicing*, resulting in continuous personal and organizational development. His ideas have been further developed by a host of students of social psychology and organization theory. We see prosecuting the full range/spectrum of military operations as a corollary to solving complex social problems; hence, we suggest that action research would be an effective professional military methodology. Variations include action science, cooperative inquiry, and interactive social science.

21. Here, we incorporate an encompassing definition of technology, defined as: "all the knowledge, information, material resources, techniques, and procedures that a work unit uses to convert system inputs into outputs—that is to conduct work." Rupert F. Chisholm, "Introducing Advanced Information Technology into Public Organizations," *Public Productivity Review* 11, no. 4 (1988): 39–56. We would add the term "tactics" as well to round out the definition in military terms. This definition implies that technology is a pre-existing solution to a given problem and that "technical rationality" is the reasoned application of it.

22. Kolb, *Experiential Learning,* 97.

23. For example, the Army Green Berets emerged out of the Kennedy administration's perceived need for "graduated response" in the midst of proxy and guerrilla warfare in the COE of the 1960s. Special Forces has since grown in stature and numbers, and, combined with other special operations forces, has become part of a new unified command (U.S. Special Operations Command, Tampa, Florida). Today, we see a resurgence of irregular warfare doctrine from the 1960s—a brushing off of old knowledge.

24. The Army Special Forces branch was established in 1987, more than forty years after the U.S. Office of Strategic Services in World War II recognized the need and established the beginnings of the requisite specialized knowledge. U.S. Special Operations Command was established as a joint combatant command about the same time.

25. Harrison M. Trice and Janice M. Beyer, "Studying Organizational Cultures Through Rites and Ceremonials," *Academy of Management Review* 9, no. 4 (1984). Trice and Beyer define "cultural myth" as "a dramatic narrative of imagined events, usually used to explain origins or transformations of something. It is also an unquestioned belief about practical benefits of certain techniques and behaviors that is not supported by demonstrated facts" (655).

26. U.S. Joint Forces Command predoctrinal publications are available online at www.dtic.mil/doctrine/jwfc_pam.htm (accessed 12 September 2006). Army interim doctrine (Field Manual-Interim or "FMIs") examples are available online at www.army.mil/usapa/doctrine/Active_FM.html (accessed 13 September 2006).

27. Kolb calls this process "organizing information" (*Experiential Learning,* 96).

28. For example, see Chairman of the Joint Chiefs of Staff Manual 3500.04C, *Universal Joint Task List* (Washington, DC: Department of Defense, 1 July 2002), where the Joint Staff has codified tasks, conditions, and standards for four levels of war to an amazing level of detail.

29. On the other hand, one notion of success with assimilative knowledge comes from valuing *bricolage,* or emphasizing resilience by forming new ways to accomplish things through the creative use of existing knowledge. Paradoxically, the improvised use of assimilated knowledge can be quite creative and result in a new divergent-accommodative-convergent cycle of knowledge creation in itself. See Karl E. Weick, "Improvisation as a Mindset for Organizational Analysis," *Organization Science* 9, no. 5 (October 1998): 543–55.

30. Karl E. Weick, *The Social Psychology of Organizations*, 2nd ed. (New York: McGraw-Hill, 1979), 34. "Reification" means "to treat an abstract concept as if it referred to a thing."

31. First quote is from Terrence E. Deal and Alan A. Kennedy, *Corporate Cultures: The Rites and Rituals of Corporate Life* (Harmondsworth, UK: Penguin Books, 1982), 4. Second quote in this sentence is our rendition.

32. Schön, *The Reflective Practitioner.*

33. See note 21 for our more complete definition of technical rationality.

34. Schön, *The Reflective Practitioner,* 50. The term "competency trap" was described in detail by James G. March in *A Primer on Decision Making, How Decisions Happen* (New York: The Free Press, 1994), 96–97. For March, the trap "reflects the ways in which improving capabilities with one rule, technology, strategy, or practice interferes with changing that rule, technology, strategy or practice to another that is potentially superior." Henry Mintzberg has also written extensively on how Defense management "whiz kids" have used "the cover of technique to promote their own influence." According to Mintzberg: "The age of management has become the age of the 'quick fix.' Call in your technocrats, throw a lot of technique at the problem, drown in hard data … [and make sure you] resolve it quickly so that you can get on with the next problem." See Henry Mintzberg, *Mintzberg on Management: Inside Our Strange World of Organizations* (New York: Free Press, 1989), 356–57.

35. For an excellent history of technical rationality, see Mark R. Rutgers, "Be rational! But what does it mean? A history of the idea of rationality and its relation to management thought," *Journal of Management History* 5, no. 1 (1999): 17–36. Rutgers described the emergence of the Cartesian paradigm as follows: "Rationality becomes associated with the question of 'how can humanity control nature and society.' From Sir Francis Bacon's adage 'knowledge is power,' it is evident that rationality became associated with method, especially, scientific method. In this regard, rationalism served as the most extreme edict of this development. The 'rationalist' school of thought claimed that all knowledge is ultimately based on reason, and reason alone. Thus, Enlightenment philosophers not only gave a new meaning to rationality, but also provided it with a significant social credibility: society can be improved by applying (scientific) reason. They not only define the dominant modern comprehension of rationality, but actually induce an explicit strife for the rational organization of everyday social life."

36. George B. Shaw, *The Doctor's Dilemma* (New York: Penguin, 1946). Extract of this book, containing the quote, accessed from the *International Journal of Epidemiology*, Oxford University, accessed 23 July 2006, http://ije.oxfordjournals.org/cgi/content/full/32/6/910?ijkey=cd3bc5a05fcd63510ca3e-9a5061ccc9ae654fd67&keytype2=tf_ipsecsha.

37. Schön, *The Reflective Practitioner,* 50.

38. Ibid., 61.

39. Ibid., 69.

40. Ibid., 68.

41. Ibid.

42. Kolb, in *Experiential Learning,* 1994, spends his last chapter discussing lifelong learning and makes it a point to metaphorically stress integrative knowledge in terms of "one foot on the shore of the conventions of social knowledge and one foot in the canoe of an emergent future" (225). He further states that "knowledge is refined by viewing predicaments through the dialectically opposed lenses of the four basic knowledge structures and then acting sensibly" (226).

43. Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics," in *Logic, Probability, and Epistemology: The Power of Semantics,* ed. Sahotra Sarkar, vol. 3 (New York: Garland, 1996), 1–35. Metaphysics, according to Tarski, is inquiry by means other than deduction or empiricism (23). The subjective-based study of the social construction of reality may be a form of such other means of inquiry.

44. Chris Argyris and Donald A. Schön, *Theory in Practice: Increasing Professional Effectiveness* (San Francisco, CA: Jossey-Bass, 1980), 149. We see this as the fundamental purpose of professional military education and we advocate small-group seminar dialog to help achieve it.

45. In the footsteps of Argyris and Schön, we believe every situation is unique to the military professional during complex operations; hence, best practices are a myth fueled by a sense of comfort associated with a belief in technical rationality. This also brings into question the way we process operational and tactical lessons learned with the hope that we find solutions that are assumed to be generalizable for the next time (i.e., a Cartesian mentality). We strongly dispute this method. While reading about best practices might serve to inform the practitioner of what others are doing, there is no substitute for acting and learning (i.e., for action research).

46. Stephen C. Pepper, *World Hypotheses: Prolegomena to Systematic Philosophy and a Complete Survey of Metaphysics* (Berkeley, CA: University of California, 1942), 44. Pepper calls professional knowledge "expert knowledge." We developed this chart (figure) from the ideas in Pepper's discussion.

47. For our explanation of paradoxical thinking, see Christopher R. Paparone and James A. Crupi, "The Principles of War as Paradox," *Proceedings* 132, no. 10/1,232 (October 2005): 39–44.

48. This is where the U.S. Army may have a problem in that the "Be, *Know*, and Do" framework of leadership (Army Field Manual [FM] 6-22, *Army Leadership* [Washington, DC: U.S. Government Printing Office (GPO), 2006]) seems to overvalue assimilative knowledge and technical rationality and stresses associated "competencies." Changing to a "Be, *Learn*, and Do" framework may more effectively demonstrate increased institutional valuation of the adaptive learning process. The word "competencies" invokes a sense of known knowledge. To recognize the continuous need to invent knowledge, we suggest that the Army's *competency framework* would have to be changed to a *professional reflection-in-action* framework that would subsume competencies associated with assimilative knowledge and include divergent, accommodative, and convergent forms of knowledge.

49. Karl E. Weick, "Drop Your Tools: An Allegory for Organizational Studies," *Administrative Science Quarterly* 41 (1996): 301–13.

50. Aaron B. Wildavsky, *Speaking Truth to Power* (New Brunswick, NJ: Transaction Publishers, 1987).

51. Our discussion of the social construction of roles, norms, and values is derived primarily from Daniel Katz and Robert L. Kahn, *The Social Psychology of Organizations*, 2nd ed. (New York: John Wiley & Sons, 1978).

52. Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality* (New York: Anchor, 1966).

53. Katz and Kahn, *The Social Psychology of Organizations*, 43.

54. Edgar H. Schein, *Organizational Culture and Leadership*, 2nd ed. (San Francisco: Jossey Bass, 1997), 19–21. For the U.S. Army Warrior's Ethos, see www.army.mil/warriorethos/; for the Soldier's Creed, see www.army.mil/SoldiersCreed/flash_version/index.html (accessed 4 August 2006).

55. Chris Argyris, *Strategy, Change, and Defensive Routines* (Marshfield, MA: Pitman, 1985).

56. Argyris and Schön, *Theory in Practice*.

57. Chamu Sundaramurthy and Marianne Lewis, "Control and Collaboration: Paradoxes of Governance," *Academy of Management Review* 28, no. 3 (2003): 397–415. The authors describe defensive routines that "denote cognitive, behavioral, and organizational responses that protect the ego, preventing actors from confronting the limits of current understandings and practices … Studies depict cycles of self-fulfilling prophesies, downward spirals or strategic persistence due to the dysfunctional dynamics of defensive routines" (399).

58. Ibid., 399.

59. Ibid., 400.

60. Chris Argyris, "Teaching Smart People How to Learn," *Harvard Business Review* (May-June 1991): 99–109.

61. Sundaramurthy and Lewis, "Control and Collaboration," 403.

62. See one of the author's related assertions in earlier works: Christopher R. Paparone, "The Deconstruction of Army Leadership," *Military Review* 134, no. 1 (2004): 2–10; "Is Hope the Only Method? The Army's Organization and Management Identity Crisis," *Military Review*, no. 3 (2003): 47–55; "Piercing the Corporate Veil: OE and Army Transformation," *Military Review* 131, no. 2 (2001): 78–82.

63. In addition, U.S. Army doctrine employs no system to cite specific references in its publications; hence the old adage, "There is no plagiarism in the Army." It is difficult if not impossible to deconstruct Army doctrine and make professional counterarguments by establishing the original sources of the knowledge. On the other hand, the U.S. Marine Corps (USMC) does a commendable job of including detailed citations in its doctrine (see USMC Publication Number 6, *Command and Control* [Washington, DC: U.S. GPO, 4 October 1996], from which, e.g., U.S. Army FM 6-0, *Mission Command: Command and Control of Army Forces* [Washington, DC: U.S. GPO, August 2003], arguably plagiarizes in large, non-attributed segments). The U.S. Army is not helping professional reflection if its principal body of knowledge remains a source of faulty attribution (in the case of Army doctrine, inadequate attribution).

If the professional body of knowledge is in a continuous state of flux and transformation, which we have contended in this essay, then the profession has to maintain an "audit trail" of sources of learning; otherwise, we are unanchoring shared meaning, and the profession will begin to unravel.

64. Sundaramurthy and Lewis, "Control and Collaboration," 408. The authors also link the cure for this routine to promoting diversity and shared understandings, where professionals value both the trust and the conflict that are necessary for healthy collaboration.

65. See the full text of Eisenhower's 1960 speech online at http://coursesa.matrix.msu.edu/~hst306/documents/indust.html (accessed 15 July 2006).

66. Marta B. Calas, "Deconstructing Charismatic Leadership: Re-reading the Weber from the Darker Side," *Leadership Quarterly* 4 (1993): 305–28.

67. Sundaramurthy and Lewis, "Control and Collaboration," 404.

68. Ibid., 405.

69. Christopher R. Paparone, "U.S. Army Decision-making: Past, Present and Future," *Military Review* 131, no. 4 (2001): 45–54.

70. Ibid., 406.

71. James H. Davis, David F. Schoorman, and Lex Donaldson, "Toward a Stewardship Theory of Management," *Academy of Management Review* 22, no. 1 (1997): 20–47.

72. Paraphrasing Weick, *Sensemaking in Organizations*, we include, in the definition of collaborative inquiry, the concept of sensemaking—a form of imagination characterized by using, modifying, rejecting, and creating new paradigms or mental models when dealing with situations of incoherency and disorderliness.

73. Weick and Sutcliffe, *Managing the Unexpected*.

74. Chris Argyris and Donald A. Schön, *Organizational Learning: A Theory of Action Perspective* (Reading, MA: Addison-Wesley, 1978). Unfortunately, the U.S. Army CGSC has professed the opposite consideration in Richard Paul and Linda Elder, *The Miniature Guide to Critical Thinking Concepts and Tools*, 4th ed. (The Foundation for Critical Thinking, 2004). Paul and Elder claim there are "Universal Intellectual Standards" (i.e., *clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness*) that "must be applied to thinking" (emphasis added, 7). If one accepts Kolb's typology of knowledge, these standards would be absurd, especially during the divergent and accommodative stages where the opposites of these standards may reflect a more appropriate sense of reality.

75. The latter, for example, includes the U.S. Army CGSC's School of Advanced Military Studies (SAMS), which requires each student to publish original research in the form of a monograph.

76. See, for example, Christopher R. Paparone, "If Planning is Everything, Maybe It's Nothing: Why We Need to Deflate the ppb in PPBE," *Army Logistician*, in press.

77. For a treatise on this subject, which we consider a potentially dangerous practice, see Christopher R. Paparone and James A. Crupi, "Rubrics Cubed: Are We Prisoners of ORSA-style Decision-Making?" *Defense Acquisition Review Journal* (December 2005-March 2006): 420–55. There are always solutions looking for problems, and the impulse may be to grab them without realizing the problem has morphed and was never or no longer is connected to that solution. ORSA is the military's acronym for operations research/systems analysis.

78. For example, see the many remedies described by Sundaramurthy and Lewis, "Control and Collaboration."

79. We paraphrase from personal correspondence with Col. (Ret.) Don M. Snider, PhD, professor, U.S. Military Academy, West Point, New York, 9 April 2003.

80. Argyris, *Strategy, Change, and Defensive Routines,* 258–59.

Upcoming Conferences of Note

October 31–November 1: *American Association for Adult and Continuing Education (AAACE)*
Memphis, Tennessee
http://www.aaace.org/?page=2017AnnualConference

This is the annual conference of one of the nation's largest organizations for 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*. This year's theme is "Adult Education: One Chorus of Many Voices."

January 4–6, 2018: *Lilly National Conference: Evidence-Based Teaching and Learning*
Austin, Texas
https://www.lillyconferences-tx.com/

Lilly-Austin is part of the overall Lilly Conference Series. For nearly forty years, Lilly Conferences on College and University Teaching and Learning have provided opportunities for the presentation of the scholarship of teaching and learning. Faculty and administrators at various stages in their academic careers come from across the United States, representing nearly every discipline found in higher education.

April 6–10, 2018: *Higher Learning Commission Conference*
Chicago, Illinois
https://hlcommission.org/Programs-Events/conference.html

The 2018 conference will highlight the theme of "Innovation and Transformation," addressing major changes in higher education brought on by new technologies, new credentials, new providers, and new public policy priorities. The conference will provide forums to explore how institutions can embrace the opportunities presented by transformative change, and how accreditation can facilitate this evolution while continuing to assure quality and promote student success.

June 8–10, 2018: *Adult Education Research Conference*
University of Victoria, Victoria, British Columbia, Canada
http://newprairiepress.org/aerc

The Adult Education Research Conference 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.

June 2–4, 2018: *The Teaching Professor Conference*
Atlanta, Georgia
https://www.facultyfocus.com/conferences/

The Teaching Professor Conference provides a thought-provoking forum for educators of all disciplines and experience levels to share best practices that advance college teaching and learning. The three-day conference features preconference workshops that provide hands-on learning, provocative plenary presentations, carefully selected concurrent sessions on a range of relevant topics, poster presentations highlighting the latest research, and ample opportunities for conversations with fellow attendees.

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 are now accepting manuscripts for the April 2018 edition and subsequent editions. 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 Chicago Manual of Style,* 17th 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.

Manuscripts should be submitted to usarmy.leavenworth.tradoc.mbx.journal-of-military-learning@mail.mil by 1 December 2017. See below for detailed author submission guidelines. For additional information call 913-684-9331 or send an email to the address above. ☙

Author Submission Guidelines

Manuscripts should contain between 3,500 to 5,000 words in the body text and be double-spaced in a standard font. Documentation must conform to the endnotes style in *The Chicago Manual of Style,* 17th edition, chapter 14, but no bibliography is needed. Because of complications with layout software, papers are not to contain any automatic endnotes; replace all coded endnotes with manually formatted notes before submission.

Manuscripts should be submitted as a Microsoft Word file. They must include a one-paragraph abstract.

Do not submit manuscripts that have been published elsewhere or are under consideration for publication elsewhere.

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, and length of article.

Authors are encouraged to supply relevant artwork with their essays (e.g., maps, charts, line drawings, and photographs). Artwork is limited to that which supports the major points of the manuscript. Illustrations may be submitted in the following formats: PDF, PNG, EPS, SVG, JPEG, PowerPoint, or TIFF. The author must obtain permission to use any copyrighted material.

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