



ARMY UNIVERSITY PRESS

# JOURNAL OF MILITARY LEARNING



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**Maj. Gen. John S. Kem, U.S. Army**  
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**W**elcome to the inaugural edition of the *Journal of Military Learning (JML)*.

I have had the distinct honor of serving as the provost of Army University for the past twenty months. As the leader of the Army's education enterprise, I take great care and interest in our collective efforts to create a university structure for the Army that maximizes educational opportunities for soldiers and civilian employees. This is no small task.

Army University supports the career-long training and education of over a million soldiers of all ranks in hundreds of occupational specialties and career paths, and more than two hundred thousand civilians in Department of the Army occupational specialties and career paths. There is no single solution or

learning model that best meets the needs of all our people. Therefore, my staff and I have extensively researched adult learning by meeting with our partner leaders in training and education from across the defense community, academia, industry, and government and by comprehensively studying current literature on the topic.

The ideas and insights we collected are guiding the development and improvement of the Army's education enterprise. We have adapted many of the best practices, systems, and processes for Army use, and we are in the process of adapting others. We are also working closely with our partners to innovate in the areas of adult learning, credentialing and certification, and competency-based education and training. Our partnerships and the extensive research and writing by the learning community have proven invaluable toward accomplishing our mandate.

We realized as we integrated into this broader community that the Army, and the military in general, did not have a military-sponsored forum for professionals to discuss the theory and practice of adult learning. Nor did we have a platform for discussing the nuances and challenges of training and education that are unique to the military. The *JML* fills this gap. Through the *JML*, Army University offers a peer-reviewed publication focused on adult learning to disseminate knowledge that informs practice in both civilian and military professional education and training.

This inaugural edition of the *JML* represents the realization of a long-term goal of Army University and professional educators across the military. We

could not have succeeded without the quality submissions of our authors and the diligence of our peer reviewers, associate editors, editorial board, and managing editor. I hope you find the content thoughtful and useful as we continue to improve education and training for the U.S. Army, the overall Profession of Arms, and the Nation.

Going forward, I invite all practitioners, researchers, academics, and military professionals to submit manuscripts that address the issues and challenges of adult education and training. A detailed call for papers and the submission guidelines can be found at <http://www.armyupress.army.mil/Journals/Journal-of-Military-Learning>. 



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ARMY UNIVERSITY PRESS



# What Is Army University Supposed to Do and How Is It Going so Far?

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The U.S. Army has always placed tremendous emphasis on training and education. It is a foundational part of our culture, dating back to Washington and Von Steuben training that transformed the Continental Army at Valley Forge, the founding of West Point in 1802, the establishment of the School for Cavalry and Infantry at Fort Leavenworth in 1881, and most recently, the establishment of Army University on 7 July 2015. Warfare is and will remain the most difficult of human endeavors, and in the multifaceted world of today, developing soldiers and civilians with the technical, professional, and leadership skills to “win in a complex world” is more important than ever. The Army has never stood still when it comes to improving training and education, but recently, Army leadership has recognized that the rate of change in the operating environment necessitates a true transformation in the way we approach learning in the Army to ensure readiness of our forces now and far into the future. We needed a more innovative enterprise-wide approach to create a culture of career-long learning and to dramatically increase the rate of innovation across the Army.

## What Will Army University Do?

The launch of Army University defined eight key objectives to address innovation and reinvigorate learning across the Army:

1. Develop a world-class faculty
2. Professionalize curriculum development
3. Grow qualified students
4. Adopt nationally recognized standards
5. Improve professional research and publication
6. Expand public-private partnerships
7. Implement new business and governance practices
8. Create an innovative learning environment<sup>1</sup>

These objectives, while not easy to achieve, are easily recognized by other services and the very best U.S. colleges and universities as key objectives of an institute of higher learning. The Army and other services, however, must also address three key attributes that set them apart from a typical model for higher education: (1) we are the “end user” of our students, (2) we must address a full spectrum of learning

for a wide variety of cohorts with varied educational backgrounds (civilian, enlisted, commissioned officer, and warrant officer), and (3) we must provide effective learning throughout a career. Soldiers complete their training and education courses and then fill our operational and institutional units, providing the technical skills, professional expertise, and leadership of Army units whether active duty, Army Reserve, or National Guard. Like our sister military services, with minor exceptions in the medical and legal fields, we do not and cannot hire in at middle management for our uniformed personnel. It is too difficult to develop the experience, leadership, and warfighting skills required at higher echelons, *so our learning has to be effective.*

Our soldiers and civilians are recruited into the Army with a wide variety of educational backgrounds, ranging from those with high school diplomas to those possessing PhDs. The *learning environment must be adaptive* to the needs of the learners, engaging them at their level, and progressing them through challenging and relevant curriculum and instruction to higher levels of learning. Further, our learning enterprise must be capable of expanding the cognitive abilities, technical skills, and leadership abilities of each of our four cohorts over their entire careers. This would be unachievable without a complete, holistic learning pathway continuum. This *long-term focus on learning* also provides a unique opportunity. Unlike a typical university, by design, our students will transition from school to operational or institutional units and back again into our school system several times over a career. So, if designed properly, we can achieve a sequential and progressive career-long learning pathway.

A second critical challenge is the rapid communication and technology development cycles of today, which clearly impact the means in which we conduct current and future warfare. We have to inculcate very rapid feedback mechanisms into our culture and governance processes to acquire operational lessons learned, and we must identify gaps in knowledge from continual review of best practices from military, government, industry, and academia and infuse this new information into our learning outcomes. In the 1960s through the 1990s, the cycle time for introducing changes into Army training and education was typically three to five years. This is not fast enough for today's rapidly changing environment. Soldiers must be able to not only keep pace with quickly shifting requirements but also to thrive in conditions of change in order to dominate adversaries during unified land operations or any other missions assigned to the U.S. military. This requires constant assessment and

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## WHAT WILL ARMY UNIVERSITY DO?

reassessment of the necessary knowledge, skills, and attributes of our four cohorts, accompanied by a governance process capable of quickly adapting to needed change.

Other key challenges include scale and scope. The Army University learning ecosystem is comprised of thirty-seven different institutions that are physically located in twenty-three states. Each of these institutions resides within the footprint of one of the six higher education regional accrediting bodies, and together they have an annual throughput of more than one-half million students.<sup>2</sup> This learning ecosystem supports soldiers and Department of the Army civilian professionals in all fifty states plus numerous overseas locations. Many of our learning efforts are focused on what has traditionally been categorized as either training or education. Few have been degree producing, and a large percentage are more similar to continuing education, whether for technical or common managerial skills. Furthermore, we must have a professional military education (PME) system that supports career development and lifelong learning while recognizing that a very high percentage of soldiers only serve for a few years. For example, according to the U.S. Army Human Resources Command, less than 15 percent of active-duty enlisted soldiers serve twenty years; roughly 130,000 soldiers transition from Army service each year. Therefore, our learning ecosystem must also support transitioning soldiers and setting them up for success with certificates, licenses, and educational credentials that will enable them to continue to excel after they transition out of the military.

### How Is It Going so Far?

With any new organization, the challenge is always, “What is most important? Where should we begin?” Prioritizing a new staff to work through the myriad of challenges to achieve an organization’s goals is difficult. Army University has achieved its initial operating capability and is making good progress towards achieving full operational capacity by late fall 2017. (Initially it was to have been in summer 2017, but a hiring freeze slowed advancement.) That said, we are not waiting. We are aggressively working across the Army, partnering and collaborating with the very best of academia and industry, to improve individual soldier and civilian readiness that directly contributes to improved unit collective readiness through better institutional technical, professional, and functional learning. A discussion of select key focus areas we have been working on this year follows.

**Rigor and relevance.** Historically, much of Army learning was task-based. We would bring together subject-matter experts to develop task lists and then, based on time and resources available, determine what could and could not be included in either resident or online distance learning. Over the last ten years, we have changed our learning approach, adopting state-of-the-art adult learning sciences for a learner-focused learning environment. This has led to a significant reduction in lecture-type formats and to much more engaging and active dialogue between the instructor and

learner, including additional emphasis on peer-to-peer learning. Improvements in rigor and relevance are also being addressed through the adoption of a competency pyramid that focuses all Army learning within a framework of four Army learning areas and fourteen general learning outcomes for each of the four cohorts across a career of learning.<sup>3</sup> The foundation of this pyramid is anchored by individual competencies, from which collective unit competencies, unified land action, and unified action competencies are constructed. The key attribute of this framework is that, for the first time, all Army learning is focused on developing the most relevant enabling learning objectives, terminal learning objectives, and levels of learning on competencies that directly contribute to individual and unit readiness.

**Staff and faculty development, and badging/recognition.** If you were to ask anyone in academia, “What’s the most effective way to improve student learning?” the most likely answer would be to “start with improving your faculty.” As we adopt a much more learner-centric approach, we recognize the need to further invest in our faculty and staff development. This year, Army University’s Center for Teaching and Learning Excellence set out to do just that. By taking a holistic look at the most innovative ways the Army approaches learning and comparing that to best practices from the learning sciences, we have established the Army’s first ever, single staff and faculty development program. The new program takes the great techniques and procedures from the various programs that existed before and consolidates them for a Total Army solution. The program is in place for all active-duty educators and curriculum developers this year and will be rolled out to all National Guard and Army Reserve school centers next year. In concert with the new program, the Army has expanded its badging and recognition program; soldiers and civilians will soon see an increase in awards and display of instructor badges.

In addition to these classroom improvements, the new program is also working toward accreditation by the American National Standards Institute (ANSI). Once accredited, military instructors will have the opportunity to be awarded ANSI credentials, which are valuable for academic credit and civilian employment opportunities.

**Degree efforts.** The Army has typically performed extremely well at educating its officers. Because most officers join the service with at least a bachelor’s degree or higher, the path toward an advanced degree is generally easier to construct. The U.S. Army Command and General Staff College, the U.S. Army War College, and the Defense Language Institute all are accredited by regional academic accrediting bodies to award college credit and degrees to their students who complete the requisite coursework. Expanding these types of programs to our warrant officer, enlisted, and civilian cohorts is required to meet both the education goals of our military community and the operational needs of the future Army. Army University has identified several avenues to expand degree opportunities.

Continuing education degree programs are established by Army centers of excellence, usually with local colleges and universities, to complement Army learning ob-

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jectives with related civilian education programs. All centers of excellence are working to establish new continuing education programs by the end of this year. A new initiative for NCOs attending the U.S. Army Sergeants Major Academy (USASMA) will provide students the opportunity to earn a bachelor's degree in "leadership and workforce development," taking advantage of the coursework they completed while a USASMA student and building on the general education credits (e.g., college math and English) they earned earlier in their careers as NCOs.

**Credentialing.** Army University, working closely with the Army G1, Human Resources Command, and Installation Management Command, is establishing a holistic Army credentialing strategy to ensure our soldiers and civilians are receiving the recognized credentials they deserve for completing Army education and training programs or through demonstrated competency. We expect senior Army leadership approval by June 2017 and aggressive implementation in the coming year.

Credentialing is a tough problem, one that has gotten a lot of attention lately from leaders at all levels, including Sergeant Major of the Army Daniel Dailey and members of Congress. A part of the challenge lies in the wide range of credentials available. There are approximately eleven thousand nationwide, but only a small percentage are high-payoff credentials related to military expertise with some link to military occupational specialties and additional skill identifiers, and few are promoted as "in demand" according to the Department of Labor analysis of those most desired in the coming decade in the public and private sector.

The Army credentialing strategy assists soldiers and leaders with identifying and achieving these "right" credentials that increase soldier and unit readiness, professionalize the force, and create career-ready soldiers capable of transitioning Army skills into civilian employment and education opportunities. Soldiers will be able to more easily decipher which credentials lead to promotion points and which are considered "in-demand" by civilian industry, and they will be able to enroll in a program that will support self-directed credentialing opportunities related to their military training and skills.

**Guided self-development.** Although this project will not begin in earnest until next year, it is worth highlighting where we are heading. Capitalizing on our efforts to expand credentialing and academic partnerships, Army University will pursue collaborative partnerships with a few of the best American universities in each of the regional accrediting bodies' geographical areas to pursue guided self-development opportunities for soldiers and civilians.

Self-development may come in the form of online learning, weekend or evening seminars, or a blend of the two—typically short in duration and focused at junior- and senior-level collegiate academics. Once completed, students will receive a micro-credential or micro-credit that, when combined, or *stacked*, with other related and sequential micro-credits, will equate to a full and fully transferable credential or academic credit. Initial focus areas will include communication, leadership, project

management, counseling/coaching, and training instructor/facilitator—all subjects that will help soldiers be better within and beyond the military.

This is a very exciting opportunity for the Army to be a part of a growing trend in U.S. higher education. Fortune 500 companies, academia, and higher-education industry leaders see exceptional value in this emerging educational concept. Students spend less time away from work and families, and they are better able to select the short-term education or skills-development courses that meet their immediate developmental needs. Additionally, employers get to see documented, recognized competencies from potential new hires.

**Competency-based education and the learner profile.** Another growing trend across the private sector and academia is competency-based learning. The Army has always been one of the very best organizations in our nation in developing the knowledge, skills, and attributes—the competencies—needed to enable soldiers to serve and excel. Of particular note are the small-unit leadership competencies we build in our junior NCOs and junior officers. However, we did not recognize and capture those competencies in an effective, holistic manner. By not documenting and capturing those competencies effectively and holistically, we lost a huge opportunity for a return on that investment. We executed the training and education, but we did not properly complete the last, very important part: tying those competencies to the recognized lexicon of academia and industry. This missed last step represents a double loss. First, it is a loss for soldiers who do not receive quality recognition for standards they have achieved. Second, it is a loss to taxpayers who often paid for the learning a second time either through soldiers' repeating coursework in later military courses in which they have already demonstrated competency, or through soldiers pursuing documented learning and often paying for it again (typically with taxpayer educational assistance) after they transition out of military service.

Army University has an opportunity to be on the leading edge of competency-based education (CBE) efforts. The scale of our student population, the scope of the training and education enterprise, and the resources committed to Army learning dictate that we continue to commit to ongoing and future outreach opportunities with leading universities and the public and private sectors. Army University must seek the most innovative solutions to meet organizational and individual learning goals. One such partnership is with the Lumina Foundation, a private organization committed to increasing higher education accessibility for all Americans. CBE represents a major shift in the landscape of higher education and is on the leading edge of the industry. CBE measures student learning or mastery of skills instead of credit or clock hours. If students can demonstrate that they have mastered the necessary knowledge, skills, and attributes, they are credentialed at the level of competency that they achieved. Similar to the micro-credits, CBE can be combined to award undergraduate and advanced degrees.

Considering the impact of scale once again, the burden of keeping track of the approximately one-half million students in Army institutional schools, plus another

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one-half million in the operating force (learning through self-development and other means), represents a significant challenge. Enter the *learner profile*. Envisioned as a living document, the learner profile will track and document Army learning and skills mastery throughout a soldier's career. Similar to a university transcript, civilian colleges and universities and civilian employers can use the information to inform academic credit transfers and or employment decisions. Additionally, the data contained in the learner profile could serve as a powerful talent management tool for the Army. Still emergent concepts, CBE and the learner profile represent key initiatives that have the potential for significant payoff in Army readiness.

**Army University Press.** With the establishment of Army University also came Army University Press. Though much of what we do at Army University Press has been around for many years, the new organization seeks to provide a more contemporary approach to introducing cutting-edge thought and discussion on topics important to the Army and national defense. Through its suite of print and online publication platforms—including this publication, *Military Review*, the *NCO Journal*, and Combat Studies Institute's research and books—Army University Press makes timely and relevant information available to leaders in the military, government, academia, and journalism. The newest developments for Army University Press include a completely redesigned web presence, increased outreach to build upon the military community's body of knowledge and promote professional writing, and a significantly improved social media program. Army University Press, in very short order, has established its presence in both the military community and in the academic world, and it is now a member of the Association of American University Presses, joining over 140 other presses committed to scholarly publishing.

**Culture change.** With the arrival of Army University, we are *changing our learning culture* and bringing a unifying academic-enterprise approach across the learning domain. We have a long way to go, however. Many of the ideas and efforts outlined above will take a number of years to reach their full potential, not unlike the time it takes to develop the agile and adaptive military leaders we need for the challenges of the twenty-first century security environment. To remain the world's dominant land power and be ready to win in this complex world, the Army must expand its investment in our soldiers and civilians. The establishment of Army University demonstrates that the Army is committed to doing just that. All of our learning efforts, both within our training and education programs and in collaboration with academia, must capitalize on the opportunities we have to (1) increase individual and collective unit readiness, (2) continue to professionalize the Army, and (3) inculcate a culture of lifelong learning to produce soldiers and Army civilians who possess expanded options for career-enhancing opportunities within the Army and ultimately upon transition out of the service.

Finally, some in the Army still question that last part, the investment in transition services. Unfortunately, this is a shortsighted viewpoint. The Army is a profession,

but it is also a big family. We bring in young women and men and ask them to serve a higher purpose—to be part of a meaningful mission—whether they serve for four years or four decades. They join us and become an integral part of our purpose and commitment as a profession. This commitment does not get canceled when someone decides to leave. We ask them to commit to the Army, however long they serve, and we have a mutual obligation and commitment back to support them as a “soldier for life.” As Army leaders, the burden is on us—not in the sense of a true burden, but as an opportunity to set up serving soldiers and Army civilians for success, to connect them with the next part of their life.

Interestingly, when you query veterans who struggle after transition from any of the services, they often highlight a key cause as a loss of a sense of purpose and pride from no longer serving. The efforts of Army University outlined in this paper will further advance the recognition of soldier accomplishments, and when combined with the “soldier for life” efforts, can lead to significant improvements in opportunities for transitioning soldiers and their families. Soldiers will be able to transition, proud of their service and on a path for a new sense of purpose—with their knowledge, skills, and attributes accurately documented through widely recognized credentials that provide opportunity for a different, but renewed and valuable sense of purpose as part of a highly skilled American workforce. ☞

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## Notes

1. Execute Order 214-15, “Establishment of the Army University,” Headquarters, Department of the Army, 8 June 2015.

2. The six regional accrediting bodies are the Middle States Commission on Higher Education, the New England Association of Schools and Colleges, the Higher Learning Commission, the Northwest Commission on Colleges and Universities, the Southern Association of Colleges and Schools Commission on Colleges, and the Western Association of Schools and Colleges.

3. “Educating Leaders to Win in a Complex World,” General Learning Outcomes White Paper (Fort Leavenworth, KS: Army University, 25 March 2016).

# America's Perpetual "Offset"

Col. Steven L. Delvaux, PhD

## Abstract

Warfare is the most complex of human endeavors. While technological and industrial advantages have long played significant roles in America's military successes over the years, it is the American soldier who is, always has been, and always will be the ultimate weapon in the United States Army's arsenal. The final arbiter of victory on any battlefield—past, present, or future—will be an American soldier manning a post, making critical decisions, and acting decisively. In light of this reality, it is essential that the United States Army optimizes the American soldiers' capability to survive and thrive in the chaotic environment of battle.

The Army has recently developed Army warfighting challenges and a Human Dimension Strategy to ensure that it is postured to do this. What is needed next is a holistic and comprehensive *Army Learning Concept (ALC)* and an associated *Army Learning Strategy (ALS)* to take advantage of recent developments in the learning sciences and technology that now allow for the creation of a "continuous, progressive, learner-centric, and outcomes-based pervasive Army learning environment ... to optimize the learning outcomes of all learners."

This paper establishes the background, rationale, and need for an updated *ALC* and briefly describes the major components of the *ALS* which are necessary to operationalize the *ALC* and move it from concept to capability in order to "ensure American soldiers maintain their irreplaceable role in the national defense and security strategy as America's perpetual offset."

*We, the leaders of this Army, do not want a fair fight. We want the odds—all the time—always in our favor. And, it's the obligation of our leaders to prepare our soldiers for combat, to ensure that our nation's sons and daughters have the necessary training and resources to win. And we must be ready today, and we must prepare for tomorrow ... We want leaders that are tough,*

*resilient, that can think and out-fight and out-smart the enemy. We want them to be adaptive and agile and flexible. And we want them not only competent, but we want leaders of character.*

—Gen. Mark A. Milley

Faced with the overwhelming conventional superiority of the Soviet army in the 1950s, America's leaders sought a strategic "offset"—a means of "asymmetrically compensating for a disadvantage."<sup>1</sup> The answer then was the "New Look" nuclear strategy whereby America used its advantage in nuclear weapons to deter the Soviets from launching their massive conventional army against us.<sup>2</sup>

Nuclear deterrence served the United States well until it didn't. By the 1970s, the Soviet Union had caught up and negated our advantage in nuclear arms. Confronted with the untenable and unwinnable proposition of mutually assured destruction and faced with a demoralized and crippled military in the aftermath of the Vietnam War, the United States had to seek another means of offsetting the continued Soviet conventional arms advantage. The resulting Second Offset turned to America's lead in technological developments to gain the desired offset.<sup>3</sup> Stealth technology, precision-guided munitions, computer networks, and globally positioned satellites were but a few of the technologies that allowed America to maintain its standoff with the Soviets through the height of the Cold War until the Soviet Union's final demise in the early 1990s.

Today, America is confronted with an elusive and ever-adapting enemy who in many ways has adopted its own offset tactics and strategy that, for the most part, have negated our technological and conventional-arms superiority. The ongoing proliferation of nuclear weapons and the growing pervasiveness of technology portend a future where these advantages are even further diminished. To respond to the challenges of a battlefield that once again threatened to tip away from us, then Secretary of Defense Chuck Hagel launched the search for a Third Offset in November 2014.<sup>4</sup> Like its predecessor, the Third Offset had a heavy technological bent to it with the secretary mentioning robotics, autonomous systems, miniaturization, big data, and advanced manufacturing as some of the solutions needed to once more offset the battlefield in America's favor.<sup>5</sup>

At the heart of all of these offsets, of course, are people. As former Chief of Staff of the Army Gen. Creighton Abrams once famously intoned, "Soldiers are not in the Army, soldiers are the Army."<sup>6</sup> Or, as expressed more recently by Gen. Raymond T. Odierno, "The strength of our Nation is our Army, the strength of our Army is

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our soldiers ... This is what makes us 'Army Strong.'"<sup>7</sup> The Army's people—both its soldiers and civilians—are ultimately at the heart of discovering and implementing the technological advances or whatever offset strategy the nation pursues to ensure the U.S. Army is able to present to its enemies the overwhelmingly superior military forces it needs to continue to be successful in the years to come.

People are America's (and its Army's) perpetual offset. While Army leaders have long known and frequently expressed this reality, they have in the past several years demonstrated an increasing sense of urgency in undertaking initiatives designed to maintain and advance the Army's historical advantage in the human domain. Although these efforts are focused on optimizing human abilities in all three of the major human learning domains—cognitive, psychomotor, and affective—it is the cognitive domain that has received a great deal of Army leaders' attention in recognition that it is the soldier's mind that holds the key to improved human performance overall.

Intelligent soldiers with optimized thinking capabilities, those who can make sound and timely decisions in extreme circumstances, will be adept at making the decisions necessary to enhance their physical and emotional abilities and develop the physical and mental toughness and resilience needed to operate under any conditions. As philosophers and motivational gurus from Western traditions have held in various forms over the years, it all starts with the mind.

One of the first major steps taken in recent years to enhance soldier cognitive development was the 2011 publication of the *Army Learning Concept 2015 (ALC 2015)*. *ALC 2015* described "an Army learning model that meets the all-volunteer Army's need to develop adaptive, thinking soldiers and leaders capable of meeting the challenges of operational adaptability in an era of persistent conflict."<sup>8</sup> *ALC 2015* was a foundational document that established the nuts and bolts of the methods needed within the Army's training and education system to maximize the development of the human cognitive capabilities required to successfully wage war in the twenty-first century.

*ALC 2015* was followed in short order by the *Army Leader Development Strategy 2013 (ALDS 2013)*. Whereas *ALC 2015* had laid out the instructional methodology for "how" to optimize learning outcomes, *ALDS 2013* specified "what" learning outcomes the Army's leader development system should be focused on producing. *ALDS 2013* called for "an Army of competent and committed leaders of character with the skills and attributes necessary to meet the challenges of the twenty-first century."<sup>9</sup> It also emphasized the centrality of the Army's people as America's perpetual offset, stating, "Developing leaders is a competitive advantage the Army possesses that cannot be replaced by technology or substituted for with advanced weaponry and platforms."<sup>10</sup>

The publication of *The U.S. Army Operating Concept: Win in a Complex World, 2020-2040 (AOC 2014)* in 2014 acknowledged *ALDS 2013's* concerns re-

garding the limitations of relying too much on technology and “advanced weaponry and platforms” in any new offset strategy, noting that “recent and ongoing conflicts reinforce the need to balance the technological focus of Army modernization with a recognition of the limits of technology and an emphasis on the human, cultural, and political continuities of armed conflict.”<sup>11</sup> After reviewing anticipated threats, the perceived future operational environment, and the potential military applications of emerging technologies, the *AOC 2014* concluded by supporting the need to maintain the Army’s determination to optimize the learning outcomes of its training and education programs, declaring, “What all Army operations will have in common is a need for innovative and adaptive leaders and cohesive teams that thrive in conditions of complexity and uncertainty.”<sup>12</sup>

The importance of developing leaders with these characteristics was crystallized in *AOC 2014*’s Army warfighting challenges (AWFCs). Several of the AWFCs highlighted leader development and human domain challenges, with AWFC #10 specifically calling on the Army to develop “agile, adaptive, and innovative leaders who thrive in conditions of uncertainty and chaos, and are capable of visualizing, describing, directing, leading, and assessing operations in complex environments and against adaptive enemies.”<sup>13</sup>

The subsequent publication of the *Army Human Dimension Strategy 2015* (*AHDS 2015*) represented the Army’s commitment to solving the human dimension challenges raised in the AWFCs. Recognizing the sometimes disjointed nature of the Army’s current leader development and talent management systems in its attempts to produce the desired leader attributes, *AHDS 2015* outlined a comprehensive strategy for preparing leaders to “thrive in chaos and ambiguity” and to “optimize the performance of our diverse talent.”<sup>14</sup> Echoing the alarm sounded by *AOC 2014*, *AHDS 2015* called on the Army to “actively seek innovative approaches to leverage its unique strength—its people” so that the Army would be assured that it could “maintain the decisive edge in the human dimension—the cognitive, physical, and social components of the Army’s trusted professionals and teams.”<sup>15</sup>

Prominent among *AHDS 2015*’s “innovative approaches” to leader development was the establishment of Army University in June 2015. Intended to “transform our academic institutions, and grow professionals with the intellectual capacity to win in a complex world,” Army University was charged with becoming “a premier learning institution for the Total Army developing both military and civilian professionals who can understand and operate successfully within a complex future security environment.”<sup>16</sup>

To accomplish the lofty aims of its charter, Army University leaders undertook several initiatives in its first eighteen months of existence. None, however, have been more important to the achievement of the objective of growing “professionals with the intellectual capacity to win in a complex world” than that of updating the *ALC 2015* and devising a holistic *Army Learning Strategy* (*ALS*) to operationalize

the revised learning concept.<sup>17</sup> These two documents together provide a robust framework for developing the “agile, adaptive, and innovative leaders” AWFC #10 demands. Integrating the latest advances in the learning sciences and technology, the new *Army Learning Concept for Training and Education: 2020-2040 (ALC-TE)*, lays out a concept that envisions a continuous, progressive, learner-centric, and outcomes-based pervasive Army learning environment that seeks to optimize the learning outcomes of all learners.<sup>18</sup>

The *ALS* in turn presents a single, focused, governing strategy for learning and establishes the ways and means for moving the ideas presented in the *ALC-TE* from concept to realized capability. While still in draft form, the *ALS* connects the disparate learning communities that already exist throughout the Army and enhances their ability to achieve the learning outcomes they are tasked with producing. To create the pervasive learning environment that is central to *ALC-TE*'s success, the *ALS* looks in part to the Army's distributed learning system and its ability to efficiently push learning to the learner at the point of need using mobile and distance-learning products. Making use of improvements in learning technology that are becoming more widely available, these distributed learning programs and tools also assist the Army in its efforts to make learning learner-centric, capable of adapting to each individual's learning needs and styles. Meanwhile, the application of gamification and other novel learning science methods now made possible by technology represents yet another means now at the Army's disposal of further optimizing learning outcomes. Integrating these many advances into the Army's training and education system will result in a significantly more efficient learning enterprise in which each learner is able to learn more, quicker, and at the higher level of the cognitive learning scale required to produce the leader competencies and attributes necessary to survive and thrive in the increasingly complex and chaotic operating environment.

The *ALS* also seeks to set in motion the establishment of personalized learning networks (PLNs) for each soldier. These PLNs will link learners to “learning leaders”—coaches, teachers, trainers, mentors, unit leaders, etc.—that each soldier can leverage to help them make sense of the learning they are attempting to master. Recognized subject-matter experts in the given field the learner is studying, these learning leaders will help ensure learners are correctly contextualizing and grasping the ideas, knowledge, and thoughts presented in the learning material. As part of the PLN, unit leaders can play the critical role of cementing the learning by providing learning environments within units that allow for the transfer and application of newly acquired knowledge and skills. Finally, in recognition of the importance of the social element of learning, the PLNs would also contain peers and other fellow learners who are working through the same learning problems in order to provide a social support network that can further assist in the learning process.

The key to the success of the approach outlined in the *ALS* is the requirement to create a system for better understanding each learner’s individual learning competencies (knowledge, skills, and attributes) and their learning needs. Regarding the challenge raised by AWFC #10 (that the *ALC-TE* and *ALS* attempt to address), it is not that the Army is incapable of, or has not in the past been focused on or successful in, developing leaders of intellect with superior cognitive abilities who can think critically and creatively in complex and chaotic operating environments. The U.S. Army’s history is, in fact, a long and distinguished one of producing just such men and women. Rather, the problem is that the Army really has only anecdotal evidence to support explanations of how its successful leaders got that way. The Army has little real baseline data revealing what cognitive abilities soldiers possessed when they entered the Army (or what they knew and were able to do before they attended PME courses or executed training events) by which it can measure the training, education, and operational experiences that have been most effective in contributing to the development of the distinguished leaders it has produced over the years.

In this day and age of “big data,” the Army’s lack of data on where, how, and what its soldiers are learning is a major limitation in its ability to optimize learning. The Army is awash in data about soldiers’ physical, health, and emotional attributes—but it is operating in the blind when it comes to data concerning soldiers’ cognitive development. Soldiers are poked, prodded, and tested annually with periodic health assessments to measure their health and fitness; the Global Assessment Tool to measure their resilience (and other measures of “affective” development); and semiannual physical fitness tests to measure their physical development. But the Army lacks pre- and post-cognitive training, education, and experience assessments of soldiers that would help it understand what soldiers are learning, where they are learning, and how they are learning what they learn throughout the course of their service. The Army’s training and education system is in many ways stuck in the past, using an industrial age, draft-era, assembly-line approach to leader development that is ill suited for the wired, information age, volunteer-era world of today.

Moving forward, the Army must make better use of the ongoing advances in the learning sciences and technologies that allow for the adoption of individual, accelerated, and adaptive learning strategies that optimize learning. The Army’s extensive training and education programs require an updated, deliberate, and purposeful approach to learning that would ensure the Army is maximizing the return on the considerable investment it commits to training and professional military education every year. The learning system conceptualized in *ALC-TE* that the *ALS* operationalizes would provide the Army with the critical capabilities needed to develop the agile, adaptive, and innovative leaders essential to conduct the unified land operations and multidomain battle concepts by which it will achieve success in the contemporary operating environment.

### Conclusion

While industry and academia work with the Army to develop, test, and implement the envisioned components of the Third Offset to ensure that we are never faced with a "fair fight," Army leaders have kept their eyes squarely on optimizing its perpetual offset—its people. American soldiers have long been the Army's true historical advantage but, as almost every financial prospectus states clearly, past performance is no guarantee of future results. The United States Army cannot be content to rest on its laurels and hope it will continue to produce the leaders needed to successfully wage war using the same methods it has long relied on to do so. As Army leaders have long noted, hope is, indeed, not a method.

A year after delivering his clarion call to arms demanding that Army leaders ensure American soldiers were never confronted with a fair fight, Gen. Mark Milley reemphasized the importance of people to the Army's success and the need to improve the Army's leader development programs. Concluding his address to the 2016 Association of the United States Army luncheon, Milley noted,

[People are] our most valuable asset, and arguably our most significant asymmetric advantage inherent in the American military and the United States Army, for we come from a society of improvisers, a society of tinkerers, innovators, problem solvers, techno-savvy at an early age. An independence of action comes natural to all Americans. Self-starting initiative, disdain of boundaries and rules, nonlinear critical thinking, and an aggressive will to win, coupled with an eternal optimism to overcome all obstacles to achieve the objective. All that is hard-wired in the national DNA of an American soldier.

Our leader development programs, officer and NCO schooling and training, and individual soldier training is going to have to amp up in order to leverage the already present inherent qualities in all of our soldiers from private to general.<sup>19</sup>

The *ALC-TE* and *ALS* provide the wattage needed to "amp up" the Army's training and education programs and produce the optimized soldier capabilities necessary to win on the modern battlefield. The realization of the continuous, progressive, learner-centric, outcomes-based, pervasive learning environment concept outlined in *ALC-TE* will ensure American soldiers maintain their irreplaceable role in the national defense and security strategy as America's perpetual offset. ☞

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### Notes

**Epigraph.** Mark A. Milley, "CSA's National Guard Association of the United States Speech," Army.mil website, 11 September 2015, accessed 3 April 2017, <https://www.army.mil/article/155581>.

1. Wikipedia, s.v. "offset strategy," last modified 21 January 2017, accessed 2 April 2017, [https://en.wikipedia.org/wiki/Offset\\_strategy](https://en.wikipedia.org/wiki/Offset_strategy). An entry in Wikipedia describes an offset strategy: "Rather than match an opponent in an unfavorable competition, changing the competition to more favorable footing enables the application of strengths to a problem that is otherwise either unwinnable or winnable only at unacceptable cost."
2. "Dwight D. Eisenhower: Foreign Affairs," Miller Center website, accessed 3 April 2017, <https://millercenter.org/president/eisenhower/foreign-affairs>; Peter Grier, "The First Offset," *Air Force Magazine* 99, no. 6 (June 2016): 56–60, accessed 3 April 2017, <http://www.airforcemag.com/MagazineArchive/Magazine%20Documents/2016/June%202016/0616offset.pdf>.
3. Zachary Keck, "A Tale of Two Offset Strategies," The Diplomat website, 18 November 2014, accessed 3 April 2017, <http://thediplomat.com/2014/11/a-tale-of-two-offset-strategies/>.
4. Ibid.
5. Sydney J. Freedberg Jr., "Hagel Lists Key Technologies for U.S. Military; Launches 'Offset Strategy,'" Breaking Defense website, 16 November 2014, accessed 2 April 2017, <http://breakingdefense.com/2014/11/hagel-launches-offset-strategy-lists-key-technologies/>.
6. Creighton Abrams, quoted in Lewis Sorley, *A Better War: The Unexamined Victories and Final Tragedy of America's Last Years in Vietnam* (San Diego: Harcourt, 1999), 370.
7. Ray Odierno, quoted in Ash McCall, "Initial Thoughts from General Ray Odierno—38th Chief of Staff of the Army," Army Live blog, 8 September 2011, accessed 2 April 2017, <http://armylive.dodlive.mil/index.php/2011/09/initial-thoughts-from-general-ray-odierno-38th-chief-of-staff-of-the-army/>.
8. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-8-2, *The U.S. Army Learning Concept for 2015* (Fort Eustis, VA: TRADOC, 20 September 2011), 5, accessed 2 April 2017, <http://www.tradoc.army.mil/tpubs/pams/tp525-8-2.pdf>.
9. *Army Leader Development Strategy (ALDS) 2013* (Washington, DC: U.S. Government Publishing Office [GPO], 5 June 2013), 6, accessed 2 April 2017, <http://usacac.army.mil/sites/default/files/documents/cal/ALDS5June%202013Record.pdf>. The specific attributes (what a soldier is) and competencies (what a soldier does) are further outlined in the Army leader requirements model in Army Doctrine Reference Publication 6-22, *Army Leadership* (Washington, DC: U.S. GPO, August 2012), 1-5.
10. *ALDS 2013*, 3.
11. TP 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World, 2020-2040* (Fort Eustis, VA: TRADOC, 31 October 2014), 8.
12. Ibid., 16.
13. Ibid., 31 and 50; "Army Warfighting Challenges," Army Capabilities Integration Center website, as of 31 January 2017, accessed 3 April 2017, [http://www.arcic.army.mil/App\\_Documents/AWFC-Current.pdf](http://www.arcic.army.mil/App_Documents/AWFC-Current.pdf). The Army warfighting challenges (AWFCs) were conceived as "an analytical framework," which would serve to focus and "integrate efforts across warfighting functions" to find solutions to the outlined challenges. The derived solutions to these challenges would then become the means by which the Army would work to improve the "combat effectiveness of current and future forces." AWFC #9 (Improve Soldier, Leader, and Team Performance) added "resilience" and a "commitment to the Army professional ethic" as additional characteristics required of Army leaders to be able to

## AMERICA'S PERPETUAL "OFFSET"

accomplish missions in "environments of uncertainty and persistent danger." AWFCs #1 "Develop Situational Understanding," #2 "Shape the Security Environment," and #19 "Exercise Mission Command" also contain important human dimension components intended to ensure the development of leaders with the cognitive skills necessary to deal with the complexity of modern battle.

14. *The Army Human Dimension Strategy 2015* (Washington, DC: U.S. GPO, 24 May 2014), Foreword, accessed 3 April 2017, [http://usacac.army.mil/sites/default/files/publications/20150524\\_Human\\_Dimension\\_Strategy\\_vr\\_Signature\\_WM\\_1.pdf](http://usacac.army.mil/sites/default/files/publications/20150524_Human_Dimension_Strategy_vr_Signature_WM_1.pdf).

15. *Ibid.*, Introduction.

16. "Army University Proclamation," Army University website, 20 November 2016, accessed 4 April 2017, <http://armyu.army.mil/sites/default/files/documents/ArmyU%20Proclamation.pdf>.

17. TRADOC, *Army Learning Strategy*, (Fort Eustis, VA: TRADOC, forthcoming).

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19. Mark A. Milley (speech, Dwight David Eisenhower Luncheon, Association of the United States Army Luncheon Convention, Washington, DC, 4 October 2016), Defense Video Imagery Distribution System video, 1:16:03, accessed 4 April 2017, <https://www.dvidshub.net/video/485996/au-sa-2016-dwight-david-eisenhower-luncheon>.

# Reframing the Human Dimension

## Gardner’s “Five Minds for the Future”

Col. Nicholas Marsella, U.S. Army, Retired

The U.S. Army recognizes the importance of the human dimension as a key ingredient for success in the twenty-first century. The human dimension is defined in part as the cognitive, physical, and social components and performance of soldiers, Army civilians, and leaders essential for successful unified land operations.<sup>1</sup> The Army has conducted numerous human dimension workshops and seminars over the years—followed by the publishing of a myriad of reports, studies, and concepts.

What these studies and concepts often do not adequately do is provide clarity to the problems surrounding defining and facilitating the desired soldier and leader competencies. Secondly, they often make aspirational claims that are hard to define or assess such as “embedding a learning expertise and culture within units” or “strengthening and accelerating the progression to critical and creative thinking.”<sup>2</sup> Albert Einstein is often quoted as saying, “Everything should be reduced to its simplest form and then no further.” While the human-dimension components of the “cognitive, physical, and social” is a useful “bumper sticker,” it may be too simple to describe what we are trying to achieve.

What this article offers to the community is an alternative approach, or framework, for considering the competencies we desire to enhance in the force by using Howard Gardner’s 2008 work, *Five Minds for the Future*.<sup>3</sup> Gardner’s work can inform Army thinkers who, like those in education, face the challenge of determining the competencies and outcomes they want to achieve to prepare their clients for success.

### Gardner’s Concept in a Nutshell

Howard Gardner is a professor of cognition and education at the Harvard Graduate School of Education. He has a PhD in developmental psychology, and he is perhaps best known for his theory of multiple intelligences. Yet, it is concepts found in *Five Minds for the Future* that may offer insights to reconceptualize and reframe the Army’s thinking about the human dimension.

Like the defense community, Gardner acknowledges many of the changes and advances in such areas as science, automation, and globalization that affect society and the individual. He acknowledged the speed with which new knowledge is being created across disciplines and fields requiring one to continually “self-educate.”<sup>4</sup> The implications of this growth of new knowledge on the Army’s educational system may be profound, perhaps resulting in more frequent, shorter, and more focused resident

and nonresident educational opportunities as well as the fielding of new learning technologies to support self-study and collective training.

Gardner noted the Army's concept of work will be transformed—requiring teams of individuals from different localities, disciplines, and fields to converge on a problem. Team members will build on each other's knowledge using computer-assisted decision-making tools and unique techniques for thinking, to include design and system thinking, to create novel solutions. Many of these workplace implications are well known to the Army and “teams of teams” are commonplace in solving many of the Army challenges.

Acknowledging the future environment, Gardner postulates there are five minds that must be cultivated for success in the twenty-first century. These five minds are the *disciplined mind*, *synthesizing mind*, *creative mind*, *respectful mind*, and *ethical mind*.<sup>5</sup> For Gardner, the development of each mind is equally important.

### The Disciplined Mind

The word “discipline” has three connotations, namely the mastery of a field of study, the ability to exercise a self-control for self-study, and the mastery of a way of thinking that is tied to the field of study.<sup>6</sup> While recognizing the importance of accumulating knowledge to attain mastery, which may take five to ten years, Gardner notes mastery is more than simply being capable of regurgitating memorized facts and rules.<sup>7</sup>

Gardner acknowledges mastery takes time, requires instructors who model applicable ways of thinking and provide opportunities for critical thinking, successful completion of certain signature assignments, and a culminating experience.<sup>8</sup> Mastery demands lifelong learning to absorb new knowledge that is continually added, refined, and transformed.

The discipline for mastery for soldiers is the profession of arms: the study of war and warfare. The Army makes a considerable investment in soldier training and professional military education toward mastery of the discipline associated with each soldier's career field and specific level of responsibility. Experience, time, and subsequent education enable the individual to master skills and knowledge at increasingly higher levels, but for the military professional, that may not be enough.

Using Isaiah Berlin's analogy of foxes and hedgehogs, the disciplined mind is akin to the hedgehog who knows one thing and views the world through the lens of

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a single defining idea or discipline.<sup>9</sup> But this type of thinking is not enough. We need to develop the fox who knows lots of little things and has the ability to cope with uncertainty and look at the problem *critically* through multiple lenses.

## **The Synthesizing Mind**

Gardner asserts that in the twenty-first century, the most valuable mind will be the synthesizing mind.<sup>10</sup> In essence, synthesizing implies one has the ability to survey the ever-growing accumulation of information from across the disciplines or areas under study, separate the important from the unimportant, formulate and consolidate disparate information into a new whole, understand the big picture, and communicate the syntheses in an understandable form to others.<sup>11</sup> This synthesizing process can result in a new concept or idea, a solution to a problem, or a new insight.

As noted by Gardner, the synthesizer must be willing to test his initial synthesis with others—essentially advocating a process of “red teaming”—that provides a critical eye on the product to help refine it and test its accuracy. The effective synthesizer must be able to know enough about other disciplines to assess what is valuable or whom to trust, value constructive challenge, and possess the ability to discern fact from fantasy or illusion.<sup>12</sup> Effective critical-thinking skills enable the synthesizer to examine their thinking, perspectives, and assumptions.<sup>13</sup>

Successful problem solving in complex environments demands the development of the synthesizing mind. Today, even junior officers require at least multifunctional and multiperspective awareness. For example, the success of many complex military tasks, such as a river crossing, rests not on the sole expertise of one individual but rather on recognizing the multitude of tasks required and then effectively coordinating and synchronizing the multiple contributions needed from across the warfighting functions and domains.

At successive levels of complexity in planning, solutions require synthesis across warfighting functions, domains, and organizations (e.g., multinational and across the U.S. government).

Increasingly, the future will belong to the leader who can gain a broad and deep view of the environment or problem using both linear and nonlinear constructs. This deep perspective can only be developed and improved over a lifetime of study both in formal educational and training programs and in self-study and reflection on one’s experiences.<sup>14</sup>

## **The Creative Mind**

Gardner notes creativity was the product of temperament combined with mastery of one or more disciplines and an ability to synthesize.<sup>15</sup> Creators and innovators

are continually dissatisfied, seeking better answers and offering different questions. Innovators want to extend knowledge and shake up the status quo—often created by the synthesizers within society.<sup>16</sup> Yet, it is important to note, “no society can be composed solely of creators—since they are by nature destabilizing.”<sup>17</sup>

To respond to changes in operational environments, the development and nurturance of innovators is a critical requirement, especially to solve “wicked” or ill-structured problems where information and problem definition are difficult to define and gain agreement on.<sup>18</sup> The challenge is not so much to create inventors who develop new things, but rather it is to develop talented creative thinkers who can define problems in clear language to others; who encourage and create the conditions for teams to seek out new and innovative solutions to problems; and who can manage the process of innovation. As the Army’s future operating concept highlights, innovation is the result of critical and creative thinking and the conversion of new ideas into valued outcomes not confined to any organization.<sup>19</sup>

Developing the creative mind requires the Army to reexamine its education and leader development programs. These programs need to address innovation theory and best practices rather than simply defining the requirement for innovation sprinkled with a few historical examples of successful innovation. It requires the teaching of tools on how leaders of ad hoc teams can solicit and foster teamwork from across the organization to work on a problem using various techniques like design thinking and other techniques that facilitate and respect divergent views.

### The Respectful Mind

Gardner recognizes the power of “tribal instincts” that often results in viewing what is considered “strange or unfamiliar” as bad.<sup>20</sup> Gardner calls for respecting others and valuing those whom belong to other groups. He placed emphasis on the importance of role modeling respectful behavior, especially among leaders.

Given the diversity found in the Army, maintaining respect and trust among individuals is paramount to building effective teams. The Army is not immune to toxic individuals and leaders who berate and belittle others. Leaders must not only *emphasize* the importance of dignity and respect but also *model* this behavior and counsel those who don’t live up to Army standards. The Center for the Army Professional Ethic is leading the Army’s effort to develop a concept for the character development of soldiers and Army civilians which emphasizes the respectful mind as a key ingredient to good character.<sup>21</sup>

Effective leaders view diversity as an organizational strength. As noted by University of Virginia Professor Martin Davidson, diversity enables us to better solve problems. In leveraging diversity we create the conditions where different thoughts, identities, and perspectives are present, which results in the stimulation of more complex and innovative ideas to achieve greatness.<sup>22</sup>

With global responsibilities, the U.S. Army operates in many nations and cultures. While the Army must create deep country and regional knowledge among select individuals and units, it must also develop cross-cultural competency in all soldiers. While we may not understand or agree with certain customs, we must inculcate an attitude of respect while acknowledging these differences.

## The Ethical Mind

Gardner's discussion of the ethical mind is intentionally broad given its focus on the larger aspect of life, namely doing work that is excellent, ethical, and engaging, and that benefits the community and society as a whole.<sup>23</sup> He addresses the ethical mind's linkage to character and to living an ethical life. Gardner encapsulates his idea into the term "habits of mind," whereby ethical behavior and decision making are ingrained in what and how we do things.<sup>24</sup>

Ethics governing right and wrong conduct are embedded in the Army profession. Army Doctrine Publication 1, *The Army*, highlights the challenges warfare places on the morals and ethics of soldiers in the management of violence.<sup>25</sup> As noted by Paul Robinson, effective fighters are ethical fighters, and immoral behavior, even by the lowest ranking soldier, can have a strategic effect with far-reaching consequences.<sup>26</sup>

As members of the profession of arms, each soldier and Department of the Army civilian adheres to the "Army Ethic," which is the body of principles and values governing the profession. Included in this ethic is the requirement to be

- ◆ professionals of character (i.e., serving with integrity and respecting the dignity and worth of all people),
- ◆ competent professionals committed to lifelong learning and professional development, and
- ◆ stewards and committed professionals of the Army profession.<sup>27</sup>

Leaders must model and live the Army Ethic. Organizational procedures need to be examined in the light of how they might foster unethical behavior.<sup>28</sup> Soldiers and Army civilians need effective, student-focused training using case studies. Field training must include the types of challenges they might face not only from the Law of War framework but from a broader ethical standpoint.

As one respected professor of ethics notes:

People say you can't teach ethics, and I say, "You know, you're right." What I can do is I can point out to you how your behaviors—every one of them—have an ethical, moral dimension. People judge you as to whether you tell the truth, keep your promises, respect others and treat people with fairness. Whether you like it or not, people judge you on one or more of those four dimensions in everything you do.<sup>29</sup>

### Mind of a Leader and Follower

Gardner recognized other minds might exist beyond his five minds paradigm. For the Army, the development of soldiers to think and act as leaders and to be effective followers is essential.<sup>30</sup> As noted in the *Army Posture Statement 2016*, leader development is especially critical as one of the four components of readiness to maintain an Army prepared to win the Nation's wars.<sup>31</sup>

The Army grows its own leaders.<sup>32</sup> Over their careers, leaders must gain self-awareness of their abilities and shortfalls, learn theory and techniques of how to lead from history and from contemporary practitioners, and continually self-reflect. Leaders must understand the tenets of mission command, the importance of communication, how to create a shared vision, and the importance of organizational culture.

Surprisingly, given the symbiotic relationship between leaders and followers, the development of followership appears to be less appreciated among Army professionals. The assumption often made is that if one has been an effective leader, one will be an effective follower. But, just as one can grow in leadership abilities, one can grow in the ability to be a more effective follower. The development of interpersonal skills (raising one's emotional intelligence) is just as important to a follower as they are to a leader.

### Closing Thoughts

Recently, Gen. Mark A. Milley, chief of staff of the Army, cautioned us to examine and challenge every assumption, claim, and assertion we have or make, and exhorted us to be open minded to change as we face the challenges of the future.<sup>33</sup> A similar attitude is needed for reexamining the Army's human dimension concepts and ideas, especially in light of the dynamic nature of technology, educational and demographic trends, and other key variables found in the contemporary and future operational environments.

While the Army's focus on the cognitive, social, and physical dimension is not off the mark, the advantage of Gardner's five minds paradigm is that it may enable us to better visualize not only the requirements but the outcomes we want to achieve.<sup>34</sup> This focus on the "minds," where individual actions, thoughts, feelings, and behavior are created, does not discount the importance of the physical (e.g., sleep and fitness) and social (e.g., ability to work with others) components.

Creating soldiers and leaders who are ethical masters of the profession of arms and can lead and respectfully serve others while being innovative problem solvers is a tall order. Yet, the consequences of not developing these minds will spell the difference between success and failure. As Gen. Pete Schoomaker, a former chief of staff of the Army, noted in his departure remarks:

We must never forget that war is fought in the human dimension. Therefore, technology will always play an important but distinctly secondary role,

because even our most sophisticated satellites and computers cannot get into the mind of the enemy, interact with local leaders, understand other societies and cultures, or make the instantaneous life or death decisions required to meet our twenty-first century challenges. Men and women with their “boots on the ground” are necessary to do all this.<sup>35</sup> ❧

*This article reflects the opinion of the author and not the position of U.S. Army Training and Doctrine Command, the U.S. Army, or other agency.*

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## Notes

1. U.S. Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World* (Fort Eustis, VA: TRADOC, October 2014), 42, accessed 3 April 2017, <http://www.tradoc.army.mil/tpubs/pams/TP525-3-1.pdf>.

The human dimension is defined as “the cognitive, physical, and social components of Soldier, Army Civilians, leader, and organizational development and performance essential to raise, prepare, and employ the Army in unified land operations.”

2. TP 525-3-7, *The U.S. Army Human Dimension Concept for the Human Dimension in Full Spectrum Operations 2015-2024* (Fort Eustis, VA: TRADOC, 11 June 2008), 13. Volumes have been written on critical and creative thinking and how difficult it is to define, teach, and assess these higher order thinking skills.

3. Howard Gardner, *Five Minds for the Future* (Boston, MA: Harvard Business Press, 2008).

4. Gardner, “Five Minds for the Future” (presentation, International School of Geneva Ecolint Meeting, Geneva, Switzerland, 13 January 2008), accessed 4 April 2017, <https://howardgardner01.files.wordpress.com/2012/06/five-minds-for-the-future-january-20081.pdf>.

5. Gardner, *Five Minds*, xv. In the past, joint doctrine contained similar language that included the term “cognitive dimension,” which encompasses the mind of the decision maker and the target audience toward whom they think, perceive, visualize, and decide. See Joint Publication 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2008), II—21 (obsolete).

6. *Merriam-Webster*, s.v. “discipline,” accessed 10 April 2017, <https://www.merriam-webster.com/dictionary/discipline>.

7. Gardner, *Five Minds*, xviii. This estimate of five years is similar to Malcolm Gladwell’s estimate contained in his book *Outliers* (New York: Little, Brown, 2008). Gladwell provided the oft quoted “10,000 hour rule,” which is the time it takes of practice to become an expert. Both authors acknowledge that their estimates applied primarily to the cognitive activities of life and don’t account for natural talent or abilities. This talent issue is particularly true in physical activities (e.g., inherent ability to throw a baseball). Gladwell’s estimate of 10,000 hours = 8 hours a day of practice x 5 days a week = 1250 days/250 weeks/4.8 years. See Eric Levenson, “Malcolm Gladwell Defends Disputed ‘10,000 Hours’ Rule,” *The Atlantic* online, 22 August 2013, accessed 4 April 2017, <http://www.theatlantic.com/entertainment/archive/2013/08/malcolm-gladwell-defends-disputed-10000-hours-rule/311884>.

## REFRAMING THE HUMAN DIMENSION

8. Gardner, *Five Minds*, 31. The literature is full of references highlighting the importance of critical thinking, yet there is wide diversity of definitions; the required and associated skills; and pedagogies to assist students to become “critical thinkers.”

9. Isaiah Berlin, *The Hedgehog and the Fox: An Essay on Tolstoy's View of History* (Princeton, NJ: Princeton University Press, 2013).

10. Gardner, “The Five Minds for the Future,” *Schools: Studies in Education* 5, no. 1/2 (Spring/Fall 2008): 18. Given the advances in artificial intelligence and the availability of information, the need for synthesis in order to create new knowledge from information will become more important.

11. Gardner, *Five Minds*, chap. 3.

12. One of the most critical challenges in the twenty-first century will be discerning and judging what is valuable and true. For example, a Pew study in December 2016 noted that more than 80 percent of those surveyed noted they could very well or somewhat well determine what information is trustworthy. See John B. Horrigan, “Information Overload,” Pew Research Center website, 7 December 2016, accessed 10 April 2017, <http://www.pewinternet.org/2016/12/07/information-overload>. Conversely, others have highlighted the challenge for many to discern fake news from real news. See Wynne Davis, “Fake or Real? How to Self-Check the News and Get the Facts,” NPR website, 5 December 2016, accessed 4 April 2017, <http://www.npr.org/sections/alltechconsidered/2016/12/05/503581220/fake-or-real-how-to-self-check-the-news-and-get-the-facts>. Scholars are also challenged to discern the accuracy of studies, which is one of the reasons doctoral students spend significant course work in research methodology courses.

13. While defining and gaining consensus on the definition of critical thinking is difficult, based on the author's reading, these competencies are essential to being a critical thinker.

14. A broad and deep view using multiple constructs will be increasingly important for the twenty-first century. As the futurist Alvin Toffler highlighted in 1970 in *Future Shock*, the illiterate of the twenty-first century will not be those who cannot read and write but those who cannot learn, unlearn, and relearn.

15. Gardner, “The Five Minds for the Future,” 20.

16. Gardner, *Five Minds*, 98. For another but similar form of characteristics necessary for innovation see David Horth and Dan Buchner, “Innovation Leadership: How to Use Innovation to Lead Effectively, Work Collaboratively, and Drive Results,” *Center for Creative Leadership (CCL)* (white paper, Greensboro, NC: CCL, 2008), accessed 4 April 2017, <http://www.ccl.org/wp-content/uploads/2015/04/InnovationLeadership.pdf>.

17. Gardner, *Five Minds*, 99.

18. Army Techniques Publication 5-0.1, *Army Design Methodology* (Washington, DC: U.S. GPO, July 2015); Jeff Conklin, “Wicked Problems and Social Complexity” (white paper, Napa, CA: Cognexus Institute, 2006), accessed 13 April 2017, <http://www.cognexus.org/id42.htm>; TP 525-5-500, *Commander's Appreciation and Campaign Design* (Fort Eustis, VA: TRADOC, 2008).

19. TP 525-3-1, *The U.S. Army Operating Concept*, 20.

20. Gardner, *Five Minds*, 104.

21. Details on the Center for Army Professional Ethic can be found at their website, <http://cape.army.mil>.

22. Martin N. Davidson, "The End of Diversity: How Leaders Make Differences Really Matter," *Leader to Leader Journal* (Spring 2012), accessed 4 April 2017, <http://www.leadertoleaderjournal.com/sample-articles/the-end-of-diversity-how-leaders-make-differences-really-matter.aspx>. For more details see Davidson, *The End of Diversity as We Know It* (San Francisco, CA: Berrett-Koehler Publishers, 2011). See also Alan S. Berson, "Profiting from Diversity: Leading 'Purposely Mis-matched' Teams to Success," Wharton@Work, Nano Tools for Leaders website, July 2016, accessed 4 April 2017, <http://executiveeducation.wharton.upenn.edu/thought-leadership/wharton-at-work/2016/07/profitting-from-diversity>.
23. Gardner, *Five Minds*, 127. Chapter 6 outlines his focus on the larger community and society.
24. *Ibid.*, 150.
25. Army Doctrine Publication (ADP) 1, *The Army* (Washington, DC: U.S. GPO, 6 August 2013), 2-19.
26. Paul Robinson, "Ethics Training and Development in the Military," *Parameters* 37, no. 1 (Spring 2007): 25.
27. Center for the Army Profession and Ethic (CAPE), *The Army Ethic White Paper* (West Point, NY: CAPE, 11 July 2014), 11, accessed 10 April 2017, <http://cape.army.mil/repository/white-papers/Army-Ethic-White-Paper.pdf>.
28. Leonard Wong and Stephen J. Gerra, *Lying to Ourselves: Dishonesty in the Army Profession* (Carlisle Barracks, PA: U.S. Army War College Press, 2015).
29. Jacquelyn Lazo, "Alec Horniman: Change Agent," *The Darden Report* (Fall/Winter 2012), 17.
30. While the focus is on soldiers, this does not preclude the leadership development of the civilian cohort as well.
31. Patrick J. Murphy and Mark A. Milley, *A Statement on the Posture of the United States Army 2016*, presented to the 114th Congress, 2nd sess. (Washington, DC: Department of the Army, March-April 2016), 6, accessed 10 April 2017, [https://www.army.mil/e2/rv5\\_downloads/aps/aps\\_2016.pdf](https://www.army.mil/e2/rv5_downloads/aps/aps_2016.pdf). The four components of readiness are manning, training, equipping, and leader development.
32. ADP 6-22, *Army Leadership* (Washington, DC: U.S. GPO, 2012). Doctrine defines an Army leader as anyone who by virtue of assumed role or assigned responsibility inspires and influences people to accomplish organizational goals.
33. Rick Maze, "Radical Change is Coming: Gen. Mark A. Milley Not Talking about Just Tinkering around the Edges," Association of the U.S. Army website, 13 December 2016, accessed 5 April 2017, <https://www.usa.org/articles/radical-change-coming-gen-mark-milley-not-talking-about-just-tinkering-around-edges>.
34. Valerie L. Denomy and Michael Perry, "Education for the 21st Century: Executive Summary," Harvard University Advanced Leadership Initiative Think Tank (Cambridge, MA: Harvard Advanced Leadership Initiative, 2014), accessed 5 April 2017, [http://globaled.gse.harvard.edu/files/geii/files/2014\\_education\\_report\\_web.pdf](http://globaled.gse.harvard.edu/files/geii/files/2014_education_report_web.pdf). This initiative posed a similar question: Are schools teaching for what is needed at work and to live fulfilling lives (cognitive, interpersonal, and intrapersonal skills)? This group consisted of experts from across the disciplines to identify the essential skills for the twenty-first century.
35. Gen. Peter J. Schoomaker, "Farewell Message from Gen. Peter J. Schoomaker," Army website, 6 April 2007, accessed 5 April 2017, <https://www.army.mil/article/2565>.

# Educating Our Defense Managers A Way Ahead

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## Abstract

This paper presents an architecture for defense management education tailored to the needs of officers and civilians with different managerial skill requirements—from those on the command track to lifelong defense-management practitioners. As essential as good management is, it remains on the margins of professional development in the military. A cultural bias favors leadership but treats managers as second-class officers even though management skills remain vital to the defense enterprise—the Department of Defense and all other public and private organizations that contribute to national defense. The authors aim to start a discussion about defense management education that will help ensure the defense enterprise can provide combat-ready forces to combatant commanders while preparing for the future.

Large, complex organizations succeed through the combination of effective leadership and good management. The Department of Defense (DOD) enterprise is exceptionally large and complex, and it demands outstanding management skills from its senior leaders. *Defense managers* are responsible for planning, organizing, leading, and controlling DOD activities. However, like all managers, they do so at a rapid and unrelenting pace.<sup>1</sup> In the words of Peter Drucker, managing requires “very hard, demanding, risk-taking work.”<sup>2</sup> Indeed, it takes the concerted, combined effort of senior military and civilian leaders throughout DOD to support current war efforts while preparing for future needs. As the military experiences another postwar force reduction and faces complex questions about its future role, management skills will be vital to ensuring that the *defense enterprise*—DOD and all other public and private organizations that contribute to national defense—sustains the ability to provide combat-ready forces to combatant commanders while preparing for the future.<sup>3</sup>

Despite the importance of expert management in running complex organizations, management as a professional discipline remains on the margins of officer development

in the military. In a recent commentary, we decried a military cultural bias that favors leadership but treats managers as “impediments, barriers, gatekeepers, and naysayers,” and management as evil and mind-numbing because of a supposed preoccupation with “processes and procedures.”<sup>4</sup> In reality, effective executive-level managers are agenda setters and consummate networkers who understand how to translate strategic direction into action, including setting goals, allocating resources, evaluating progress, and capturing knowledge gained.<sup>5</sup> These skills and competencies differ from those cultivated in leadership education but are highly relevant for managing the defense enterprise with its hundreds of processes and systems designed to help translate strategy into ready forces for the combatant commanders.<sup>6</sup>

Unfortunately, our experience with professional military education (PME) suggests that, compared to leadership, management is undervalued both by students and PME institutions.<sup>7</sup> Thus, the PME system does not adequately prepare its senior officers and civilians to assume the roles of defense managers. As a result, systemic organizational dysfunctions emerge and foster the waste of time, talent, and money across the DOD. Examples of these dysfunctions include chronic and well-documented problems with the defense acquisition system and efforts to institutionalize talent management, even as the DOD continues to struggle with rapidly increasing personnel costs (well above rates in the private sector).<sup>8</sup> Furthermore, the DOD struggles to effectively exercise the fundamental management responsibilities of creating, growing, maintaining, reducing, and divesting its suborganizations.<sup>9</sup> Instead, growth is the rule and contraction the exception. “Organizations and functions that have gradually been added to the department since its founding in 1947 have only rarely been eliminated, even if their original purpose has long since changed or gone away entirely.”<sup>10</sup>

This essay first examines the need for management-focused education tailored to the defense context. It then presents a multilayered architecture for a defense management curriculum within PME to foster managerial skills and competencies in defense leaders. The architecture addresses foundational concepts and skills required

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of all defense managers at one end and strategic decision making at the national political and economic environment at the other end. The curriculum is tailorable to suit the needs of career-long managerial practitioners and those who will occasionally serve in DOD management positions.

### What Defense Managers Need

The U.S. military is a public-sector professional organization. Thus, fundamentals of public-sector management (e.g., informed decision making, engagement with the public, talent management, and collaboration with the private sector) are very important.<sup>11</sup> The military's professional character adds other critical skills and competencies, such as sustaining its unique domains of expert knowledge (e.g., warfighting), certifying and policing its members, and protecting its autonomy from societal or governmental intrusion.<sup>12</sup> All these requirements are familiar to the military's tactical and operational leaders, but they take on different meaning when these officers and civilians advance and become senior defense managers. They now experience how much the interplay among politics, economics, and law influences strategic decisions.<sup>13</sup>

This is vital because, as Henry Mintzberg writes, "synthesis is the very essence of management," and managers must have the skills for developing "coherent visions, unified organizations, integrated systems, and so forth."<sup>14</sup> This is echoed in the writings of PME commentators such as former U.S. Army War College commandant Robert H. Scales, who writes that successful senior defense managers are "engaged in the decision-making processes in all national-level staffs, both civilian and military," to develop capabilities and provide combat-ready forces to combatant commanders.<sup>15</sup>

These core functions may not differ in nature from those of private businesses, but they do differ in character.<sup>16</sup> Therefore, simply grafting management education on top of military PME is not the best answer. While general management principles may apply, the defense context includes a wide, complex, and unique array of decision-support tools that constantly evolve due to strategic, functional, or political pressures. Defense managers must appreciate the decision-support architecture, both its capabilities and limitations, to ensure their decisions are well informed and defensible to Congress and the U.S. public.<sup>17</sup>

Defense managers must also master the political context. While management sometimes overcomes politics, the reverse is more often true. More important, all defense management decisions find management and politics inextricably connected in a sometimes uneasy, shambling relationship. One of the essential roles of defense managers is to help their senior political leaders manage that relationship. In effect, leaders must be able to critically evaluate the processes and systems in place and then present that evaluation within the political context. Thus, when the Army determines through rigorous analysis that it no longer requires new M1 Abrams tanks, it must anticipate and address the concerns of the legislators in whose districts those tanks would be made.



However, because of the military's career management systems, many officers reach senior rank without having gained sufficient DOD-level experience to prepare them. Although each service has communities of practice in certain functions such as acquisition or force development, overall, the services rightfully incentivize and reward proficiency in core warfighting functions.<sup>18</sup> The downside is that many officers arrive at the senior service colleges with limited knowledge in how the services run, yet they are expected upon graduation to immediately adapt to senior defense managerial roles. In reality, these officers must undergo a full transition to their new roles and develop new skills and competencies to be effective as senior defense managers.<sup>19</sup>

In our experience, senior leaders intuitively recognize the critical importance of both leadership and management in delivering trained and ready forces to commanders while preparing for future needs. They also recognize that defense management assignments tend to dominate the career patterns of senior PME graduates, and that enterprise issues dominate the agendas of flag-officer-level commanders.<sup>20</sup>

## **Insufficient Emphasis on Management in Professional Military Education**

Unfortunately, while the current approach to PME has a foundational approach to leader development supported through developmental assignments that prepare officers for strategic command success, there is no equivalent on the managerial side. Why?

One possibility is that the organization assumes that preparation for command equates with preparation for senior managerial roles. Unfortunately, success in command does not necessarily assure later success in a service staff or other management-level organization.<sup>21</sup> There are important skill differences between leaders and managers, although some senior officers and civilians are capable of exhibiting both. Strategic leadership competencies include articulating vision, setting strategic direction, and inspiring followers.<sup>22</sup> Meanwhile, executive managers must be adept at setting agendas, operating informal networks, and routinizing complex activities.<sup>23</sup> While managerial and leadership skills may overlap, they are developed differently.<sup>24</sup>

If the joint community is to build and maintain managerial talent, it needs to embrace two things: sound principles of good management adapted to the military context, and sound methods for teaching the principles to officers and defense civilians. Defense managers must be prepared to advise senior leaders on how to optimize enterprise activities yet keep them aligned with key stakeholder needs.<sup>25</sup> The issues facing defense managers are complex and broad, such as federal budgetary pressures, consolidation of the defense industrial base, sustaining the all-volunteer force, providing sufficient trained and ready forces to combatant commanders for current and future operations, and many others.<sup>26</sup> Unit-level perspectives are important but insufficient; students of defense management must



situate themselves in the perspectives of the secretaries, chairman, or service chiefs to render proper military advice.

A second explanation is that military leadership is simply more conceptually developed as a field than is defense management. This is apparent when reading the policy in Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 1800.01, *Officer Professional Military Education Policy*. It identifies “strategic leadership” among its joint learning areas across joint PME institutions.<sup>27</sup> Subordinate learning objectives include skills and competencies drawn from the fields of psychology (e.g., strategic thinking, decision making, and communication), ethics, and organizational studies (e.g., culture, change, climate, and learning). Management-centric concepts are largely absent from the policy’s joint learning objectives, and (predictably) PME curricula only give rudimentary introductions to these areas. Yet, management is a highly developed field. Indeed, one can argue that from a scientific standpoint, much more is known about what is needed for good management than for good leadership. Measurement, inferential statistics, behavioral and organizational economics, decision analysis, and accounting (analogous to programming and budgeting) are all highly developed fields of great relevance to effective defense management. To look at the current PME system, one would not know that they exist.<sup>28</sup>

A third explanation for the lack of a comprehensive approach to managerial development is the notion that management consists only of knowing a process. Mintzberg warned of management education devolving into the mere study of decision making; then declining to only an analysis activity, and finally falling to the rote “the use of a formula.” This devolution served to undermine the proper development of managers.<sup>29</sup> Despite Mintzberg’s warning, a survey of defense-management-related curricula across PME suggests heavy emphasis on gaining familiarity with existing processes and systems, predominantly in matters of materiel acquisition and force development.<sup>30</sup> This is aggravated by the persistent growth in the number and scope of the DOD’s and services’ management processes and systems, challenging both students, faculty instructors, and curriculum developers to keep current. Thus, senior PME is unable to pursue the type of management synthesis advocated by Mintzberg.

There are three unfortunate consequences. First, the management focus is mostly on *what* things are done, as opposed to *how* they are done. Most important to management education is *why* things are done a certain way, what are the alternative approaches, and what are the tradeoffs in pursuing those approaches. For example, lessons in senior PME now present contracting as an available tool or capability, but the lessons do not address the basic question of how to think about instances where contracting is unsuitable.<sup>31</sup> This is the classic *make or buy* decision: What causes an organization to decide to buy something from the market instead of producing it itself? There is of course no simple answer to that management question, which is why it belongs in the curriculum.



The second consequence is that without understanding the basic questions of management, students are not prepared to take the next steps such as understanding the analytical tools, assessing the system and, if needed, proposing different approaches or pursuing redesign. Instead, students walk through management processes from input to output, with limited opportunities to discuss dysfunctions or improvements. Predictably, such classes are tedious and boring, which reinforces the cultural bias against management. In contrast, management education scholars favor experiential learning techniques that help students define issues and develop choices.<sup>32</sup>

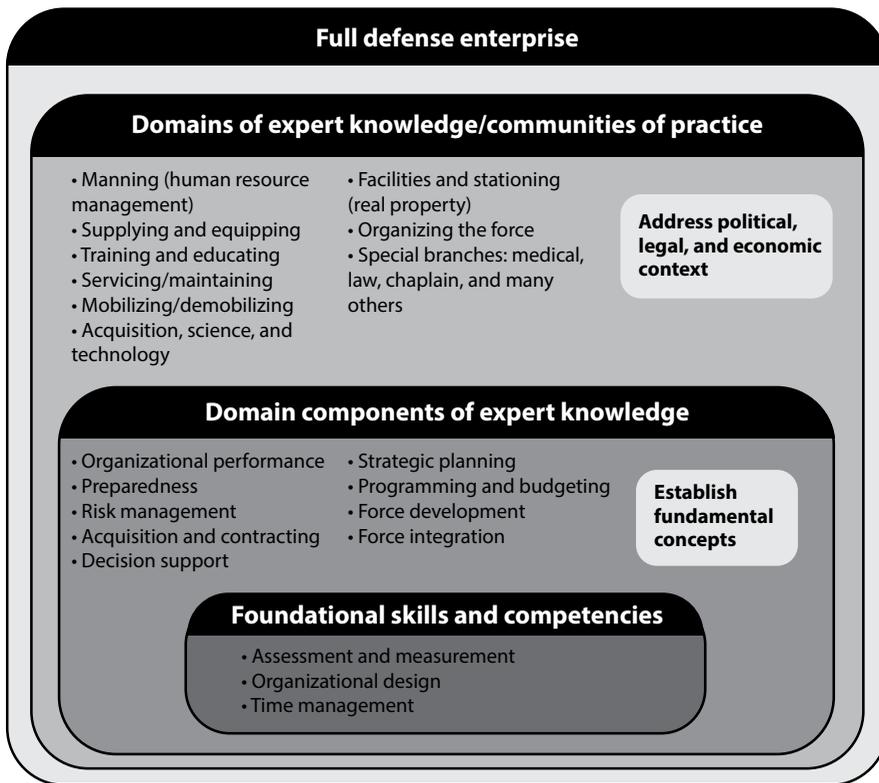
Third, effective management education is made even more difficult because of challenges in sustaining expert knowledge among the faculty. Military faculty often arrive as experts in a specialized area within the enterprise. Lacking a broad base of management competencies, they find it difficult to expand to a strategic perspective because they must relearn topics outside their specialty. Moreover, when they depart, their specialized expertise leaves with them, as there is limited ability to transfer their knowledge to the PME institution. Although proponency for management-related issues rightly belongs at the secretariat level and associated chief management officer or equivalent, stewardship of the expert knowledge on management matters should be a PME institutional responsibility.<sup>33</sup>

To foster synthesis skills, defense management education must address the same relevance-rigor tension that business schools and other higher education institutions face.<sup>34</sup> For defense, the tension manifests itself as a conflict between how things should ideally be done and how things are done within the political, economic, and legal context. To be successful, defense managers must master both sides of the debate. For example, there exist fundamental principles regarding measures of readiness that should guide the distribution of resources to ensure services can generate sufficient trained and ready forces for operations.<sup>35</sup> However, DOD may assign collateral missions that override the distribution of resources and disrupt the force generation process. Mastery of these principles helps defense managers articulate the risks associated with such decisions, while mastery of the political context allows managers to synthesize alternatives and render actionable advice.

## **Toward a Curricular Solution**

Therefore, what should a defense management curriculum look like? We reviewed management literature, along with current defense management courses, and determined that the domains of knowledge for each managerial subject area had common components, as shown in figure 1 (on page 37). These components constitute the language of defense management, allowing disparate domains (e.g., military medicine, human resource management, science and technology, or stationing) a common vocabulary to help align activities toward enterprise goals. They capture





(Figure by authors)

**Figure 1. Four-Layered Architecture of a Defense Management Curriculum**

the fundamentals governing these domains and the real-world political, legal, and economic factors that complicate decision making in them.

We assembled these elements into a broad architecture from which one can construct learning materials, courses, and entire programs in defense management. We present these in the next section, from the inside out. Then, we show how varied programs can address the needs of different leaders.

### Three Foundational Skills and Competencies

Using the management literature, we have identified three foundational skills and competencies that are common across all defense management domains of expert knowledge. These are shown in figure 2 (on page 38).

**Goal setting, measurement, and assessment.** Military personnel dislike dealing with statistics because it requires “mastery of a technical field [well] outside their





(Figure by authors)

**Figure 2. Foundational Skills and Competencies for Defense Managers**

personal experience.<sup>36</sup> Moreover, the specter of Secretary of Defense Robert McNamara colors the discourse, as critics decried his reliance on quantitative methods as replacing or inhibiting good judgment.<sup>37</sup> Consequently, military officers generally distrust statistics, believing they can be capriciously manipulated.<sup>38</sup> Still, as Amy Gallo writes in an article at *Harvard Business Review* online, “because more and more companies are relying on data to make critical business decisions, [statistical significance is] an essential concept for managers to understand.”<sup>39</sup> Senior leaders and managers do not necessarily need to be mathematicians, but they must be sufficiently comfortable with numbers to critically evaluate those presented to them.<sup>40</sup> Managers should guide and prioritize activities based on clear measures of performance and effectiveness, accurately assessing both the visible and hidden costs of those activities.<sup>41</sup> The increased interconnectivity of everything we use in daily life offers great opportunities to better understand the environment. It can also improve strategic decision making and the design of decision-support tools.

A defense management curriculum would present the analytical approaches without necessarily delving into the detailed mathematics, although students must master common terms from descriptive and inferential statistics.<sup>42</sup> Instead, the curriculum could concentrate on three things: (1) setting and articulating goals, (2) establishing feasible and meaningful measurements, and (3) usefully interpreting the data collected.<sup>43</sup> In general, defense managers find the first very challenging. How does one establish a strategic goal that can be operationalized into measurable performance objectives? Mapping goals to objectives and relating those to organizational activities are important management competencies.

The curriculum should help managers understand the different and relevant ways to read and interpret data, and thereby develop measures that will accurately reflect what and how the manager needs to gauge organizational performance. Managers must know how to judge the appropriateness of a measure; the levels of precision necessary for useful analysis; the feasibility, representation, and consistency of the mechanisms available to collect data; and the validity and reliability of the results. Absent this knowl-



edge, the manager risks acting on unreliable or unrepresentative information. For example, when discussing matters of metrics and statistics, military officers may default to the “bell curve” metaphor, which represents normally distributed events with a single identifiable mean. However, most defense management phenomena are not normally distributed, which in our experience has led to managers taking steps to “normalize” the data for easier interpretation, but instead they bias the measures.<sup>44</sup>

**Organizational design and boundaries of the firm.** Choices of organizational design are among the most fundamental decisions managers can make. Organizational design first determines what is inside versus outside the organization; it then establishes the structures for carrying out internal activities. Design is an essential function of military leadership and a perpetual part of senior military decision making, especially at the Pentagon. The recent attempts to reform the DOD and build on the Goldwater-Nichols Department of Defense Reorganization Act of 1986 (itself an exercise in design) are emblematic of the strategic significance of organizational design.<sup>45</sup>

Management scholar Gill Corkindale states, “Managers design and implement organizations to serve ... assigned missions. This is more than merely drawing box charts and establishing formal duty descriptions. It includes delegating responsibilities, setting expectations, managing relationships, and aligning activities with requirements.”<sup>46</sup> It also involves what must go on inside the organization versus its interface with the environment, and how to integrate the outputs of whatever the organization provides to stakeholders and customers.

Military leaders work with policy makers and Congress to decide what the services must do themselves versus what they must purchase from the market. The short answer is that activities categorized in regulations as “inherently governmental” must be insourced, and everything else is a candidate for outsourcing. Yet, this is no answer at all, for apart from the regulations themselves, there is questionable logic behind the inherently governmental distinction. In other words, inherently governmental regulation can be changed if the case is strong. Leaders therefore need to understand how to evaluate where organizational sourcing boundaries can and should be drawn.

Once an activity is designated for internal execution, leaders must establish structures and processes to generate those capabilities. At the enterprise level, the boundary between insourcing and outsourcing is fluid and evolving, and managers must continuously manage that boundary so capability development is as effective and efficient as possible.<sup>47</sup>

Consider the case of military cyber organizational design, a current organizational design challenge. Given the extensive civilian cyber capabilities, which cyberdefense functions must be federal? Of those, which should be assigned to the military? How should military cyber elements be designed to facilitate necessary internal and external coordination? Given the transcendent nature of cyber, how should a cyber service be staffed and organized? Should we count on the current



uniformed services to do so, or should we establish another service? These are hard questions, and economic and management research can provide leaders with useful tools for working through them.

Although political, legal, and economic factors may interfere with implementing the best designs, they should not prevent defense managers from developing efficient and effective organizations. Principles of organizational design are plentiful and can be adapted for military use.<sup>48</sup> Defense management curricula should provide the building blocks of design, such as delegation, span of control, functional versus project-oriented divisions of labor, purposes for hierarchical division, and how to reorient and surge resources where and when needed.<sup>49</sup>

**Time management and opportunity costs.** Military officers understand the importance of managing one's time to accomplish individual tasks. However, time management at the enterprise level "isn't just a personal-productivity issue over which companies have no control."<sup>50</sup> Defense managers who cannot set and maintain their own agendas and influence those of the whole organization become overwhelmed and lose their effectiveness.<sup>51</sup> Yet, counterintuitively, John Kotter found that effective managers use their time quite inefficiently, at least to a casual observer.<sup>52</sup> However, effective time management is how they overcome the challenges of uncertain environments, deal with the great diversity of issues and stakeholders, and sort through the massive amounts of information.<sup>53</sup>

A defense management curriculum can foster better time management and agenda setting through important economic concepts such as opportunity cost, marginal cost, horizontal and vertical integration, asset specificity, and others.<sup>54</sup> Opportunity cost is particularly important in measuring the cost of options not pursued, such as the cost of borrowed military manpower.<sup>55</sup> The goal is for managers to think in terms of cost when tasking subordinates, especially for requirements falling outside their normal areas of expertise.

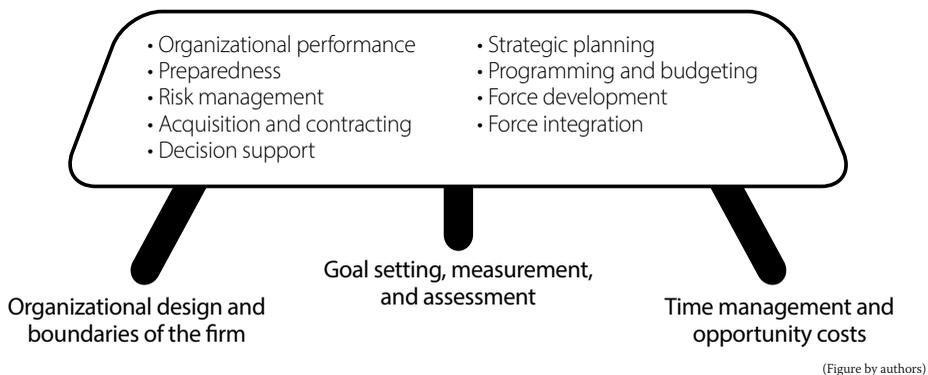
The inability to consider these three skills and competencies creates conditions that can lead to the adoption of dysfunctional behaviors. Discomfort with complexity combined with the inability to develop useful metrics can cause managers to overemphasize what can be easily measured instead of what best represents organizational performance. Poor time management at senior levels limits junior managers to externally imposed calendars and denies them the latitude and autonomy to prioritize their own activities.

## Nine Domain Components of Expert Knowledge

The above three foundational skills and competencies form the basis for the nine defense management domains of expert knowledge shown in figure 3 (on page 41). Each domain employs a set of *fundamentals*, which can include concepts, constructs, and best practices describing the optimal discourse on that domain. For ex-



ample, fundamental measures of *preparedness* for military operations include having sufficient quantities of ready on-hand capabilities, overmatch of capabilities against an opponent, the balance of readiness and modernization, and the will to employ them.<sup>56</sup> These measures may apply differently between the unit level (e.g., personnel and materiel on hand and available) and the national level (e.g., number or capability of forces to meet combat commanders' missions).<sup>57</sup> However, understanding these fundamentals should help defense managers address commonalities and differences between the two perspectives to present a synthesized assessment.



**Figure 3. Nine Components of Defense Management Domains of Knowledge**

We propose that each domain is comprised of nine components, as shown in figure 3. They represent core areas of study that defense managers should master regardless of their chosen communities of practice and level in the defense hierarchy (e.g., DOD agency, joint, service, component, or subordinate community). Moreover, each area of study integrates management skills and competencies with those of leadership, such as organizational change, climate, decision making, and communication. The nine components would represent modules comprising the core in the defense management curriculum.

**Organization performance.** This component represents understanding and evaluating the organizational context. It requires advanced or applied critical thinking, addressing questions such as *what is wrong* and *how did we get here?* Managers would learn how to derive the best possible explanations, relying, where appropriate, on inferential statistics that could inform decision on causality.<sup>58</sup>

**Preparedness.** This module presents concepts of measuring an organization's current and future capability and capacity to conduct and sustain military operations.<sup>59</sup> Students would learn about how to model and measure national military power as expressed in its organic military capability, defense industrial base, and other elements of national power.<sup>60</sup>



**Risk.** Risk is about the recognition of hazards, the consequences of failure, paradoxes of assessing risk, and principles of managing risk.<sup>61</sup> Students would learn the fundamentals of risk management systems, defining levels of risk such as low, moderate, or high based on likelihood or consequences, and decisions to accept risk.<sup>62</sup>

**Acquisition and contracting.** This module focuses on fundamentals of contract theory, including information asymmetry, large and small numbers bargaining, contract incompleteness, and principles of contract design.<sup>63</sup> Students would synthesize factors such as the determination of an organization's core functions, the export of governance (i.e., decisions regarding insourcing or outsourcing), and drawing threshold boundaries for "inherently governmental" determinations.<sup>64</sup>

**Decision support.** Decision support is the combination of manpower and technologies designed to enable sound decision making.<sup>65</sup> This module addresses questions of what constitutes "key" or "critical" decisions, design principles for decision-support systems such as the appropriate use of qualitative and quantitative tools (e.g., operations research), and political factors influencing the decision environment.<sup>66</sup>

**Strategic planning.** This module presents concepts related to developing and implementing processes and systems for establishing and articulating strategic direction, building strategies and plans, and acquiring and allocating resources.<sup>67</sup> It also addresses limits and challenges to systematizing strategic planning due to political and economic factors.

**Programming and budgeting.** This module covers the fundamentals of program design in public-sector organizations including considerations for resources, time, and authorities.<sup>68</sup> It also encompasses the intersection of programs with budgeting processes (e.g., authorizations versus appropriations in the federal government's system).<sup>69</sup>

**Force development.** This module addresses the fundamentals of capability development and improvement and applies skills of organizational design for creating, growing, maintaining, reducing, or divesting organizations.<sup>70</sup> Students would learn how to integrate military strategies with technology, materiel solutions, manpower, and doctrine to develop combat-ready capabilities for the warfighter.<sup>71</sup>

**Force integration.** This module provides the skills and knowledge associated with task organizing to meet a specified requirement—whether an integrating working group or entire joint task force to conduct combat operations.<sup>72</sup> In the defense context, this include strategic human resource management decisions, material distribution, and force generation concepts.<sup>73</sup>

## Communities of Practice

The top layer of the architecture in figure 1 (on page 37) applies these domains of knowledge to the efforts of organizations or networks of military and civilian personnel working toward a common goal. These are called *communities of practice*.<sup>74</sup> In the DOD context, many such communities typically include a staff proponent, a



network of subject-matter experts, a primary customer (e.g., combatant commanders, bases or installations, individual service members, civilians, and their families), facilities and infrastructure, and specialized knowledge. Each community has its own frameworks and standards of acceptable organizational performance; metrics for current and future readiness to support military operations; understandings of risk; and exercise of planning, programming, and budgeting.

The communities of practice could represent any number of ways of subdividing the DOD. As depicted, these could be (a) Title 10, U.S. Code, functions such as servicing, maintaining, recruiting, administering, or organizing; (b) branches or communities within a service that encompass specific capabilities such as infantry, surface warfare, strategic airlift, or special branches such as medical, law, or chaplaincy; (c) institutional practices imported from outside the military such as human resource management and real property management; or (d) an entire service or joint forces.<sup>75</sup> Also, the whole defense enterprise is itself a domain, encompassing the full DOD, defense industrial base, and relevant entities of other U.S. and state government agencies.

At this level, the political, legal, and economic contexts become central to the curriculum. They represent how decisions present themselves to defense managers in real-world situations. Using acquisition as an example, procuring a capability at “least cost” or “best value” to the government would be a principle of acquisition decisions. However, political factors may drive the government to choose higher-cost options, modifying or violating that principle. Thus, a central component of this advanced part of the curriculum is navigating these externally imposed tensions. Should managers accommodate the politics of the decision or should they confront them, affirming their principled approach to the decision? What are the risks of either choice?

The curriculum should also address tensions between communities of practice, especially as they relate to strategic-level decisions. Different perspectives exist among services, among components within a service, between conventional and special forces, between operating and generating forces, and so on. These differences present possibly conflicting ways of defining organizational performance metrics, measuring preparedness, exercising strategic plans, and pursuing programs and budgets. Senior defense managers must synthesize these disparate perspectives into a single defense budget.

### **Building Courses and Programs**

We stress that this architecture does not necessarily require a massive PME overhaul, nor does it necessitate new, lengthy programs be developed at high cost to the military while the DOD overall faces budget cuts. Rather, operationalizing this architecture provides a number of choices about how to construct courses and programs tailored



**Table. Operationalizing Architecture into Courses**

	<b>Students</b>	<b>Goal</b>	<b>Foundational skills and competencies</b>	<b>Domain components</b>	<b>Communities of practice</b>	<b>Whole defense enterprise</b>
<b>Generalist track</b>	Operational leaders	Familiarization	Focused	Introductory	Limited	Issue based
	Enterprise leaders	Conversance	In depth	Introductory	In depth	In depth
<b>Defense management specialist track</b>	Community practitioners	Domain mastery	In depth	Focused	Focused	Issue based
	Full practitioners	Full mastery	In depth	In depth	In depth	In depth

(Table by authors)

to the needs of students. The table provides an illustrative approach with four different curricula tailored to the requirements of different defense managers.

It is important to emphasize that the foundational skills and competencies would be required of all defense managers. Educating these skills would permeate PME down to basic-officer level as an adjunct to leadership education. This would benefit junior officers who, under the philosophy of mission command, are being granted greater authority and autonomy over the management aspects of unit leadership.

The first two program lines are generalist oriented and provide sufficient breadth for senior leaders without much prior defense management experience to exercise future DOD management roles. The *Operational Leaders* program line represents the minimum requirements of all senior leaders, and it would comprise a core defense management course at the senior service colleges.<sup>76</sup> Some senior leaders might only occasionally serve in management assignments, and therefore would only require familiarity with defense management concepts. They would benefit from exposure to the core defense management skills and competencies at an introductory level, with a focus on the political context of routine management decisions such as those related to weapons system programs and Title 10 functions.

The *Enterprise Leaders* program line represents additional education for senior leaders who are transitioning from an operational career path to senior management roles for the remainder of their careers. They must become highly conversant in defense enterprise and community-level issues, and they must interact with defense management practitioners assigned to them for foundational expertise. Senior service colleges could offer defense management-oriented electives or concentrations or other follow-on programs offering higher levels of engagement with active practitioners and in-depth study of current topics.<sup>77</sup>

*Community Practitioners* are senior leaders with significant prior experience who will lead communities of practice or take senior leadership positions requiring manage-



ment expertise. Therefore, they require mastery of the core defense management curriculum. Such leaders may include Army branch chiefs, program executive officers, programmers, information managers, strategic logisticians, and others requiring greater management expertise. Their PME experience would be tailored to their domain-specific needs, focusing on critically evaluating issues of their community.

The *Full Practitioners* program line is for leaders who take on defense management positions earlier in their careers. These might include acquisition officers, force managers and developers, human resource managers, comptrollers, and other management-centered positions, both military and civilian. They will reach senior PME with significant operational defense management experience and subject-matter expertise. Therefore, they will benefit from more advanced education. PME will probably best satisfy practitioner needs in a separate PME program or “track,” as these practitioners will require complete immersion into the material to achieve full mastery of the objectives.

Any of these approaches would be suitable for both in-residence and distance education. Many of the core curriculum modules can easily be delivered by distance education programs and tailored for leaders at all levels. The foundational skills are useful for managing at the small-unit level and the domain component modules applicable to many junior officers serving in their first staff assignment.

### **Operationalizing the Architecture**

A key next step is to develop core defense management curricula for presentation to current practitioners at joint and service levels. This will help evaluate the effectiveness of the proposed curriculum structure and identify ways to deliver the material at introductory levels for nonpractitioner audiences. This could be followed by pilot programs aimed at junior and senior joint PME institutions.

Separately, the PME policy in CJCSI 1800.01 should be reviewed for inclusion of joint learning areas and objectives to support defense management. This would necessitate a review of which PME institutions are best suited for presenting the curricula and managing the domains of expert knowledge. We believe current PME institutions are suitable for the task, and that there is no need to create a separate one.

Finally, we encourage the development and sustainment of a defense management education community of practice. Key to the success of this venture is building and maintaining domains of expert defense management knowledge, which are distributed across the DOD and too often become hidden in the exigencies of day-to-day practice. This community would establish or repurpose outlets for scholarly publication and would conduct outreach with external agencies such as management schools and defense interests to keep the domain of knowledge current and relevant.

Clearly, this is a long-term venture, and there are pressing needs for better defense management practices now. Changing culture takes time, and cultivating the



knowledge called for in this proposal is a complex and challenging task. We hope that initiating dialogue on matters of defense management education will help improve current practice and encourage reflection on how the defense enterprise can function more smoothly in the future. ❧

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## Notes

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6. Gary Yukl, *Leadership in Organizations*, 5th ed. (Upper Saddle River, NJ: Prentice-Hall, 2002), 22–24; David W. Barno et al., *Building Better Generals* (Washington, DC: Center for a New American Security, October 2013), accessed 6 April 2017, <http://www.cnas.org/building-better-generals>.
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9. Joseph L. Bower, *Managing the Resource Allocation Process: A Story of Corporate Planning and Investment* (Boston: Harvard Business School, 1970); David W. Barno et al., *The Seven Deadly Sins of Defense*



*Spending* (Washington, DC: Center for a New American Security, June 2013), accessed 6 April 2017, <http://docplayer.net/20611074-The-seven-deadly-sins-of-defense-spending.html>; Mandy Smithberger, "Will the Pentagon Ever be Able to be Audited?," Project on Government Oversight website, 28 March 2016, accessed 6 April 2017, <http://www.pogo.org/straus/issues/defense-budget/2016/will-the-pentagon-ever-be.html>. In summary, the Department of Defense (DOD) and the services, what we call the *defense enterprise*, has long struggled with the challenges of management. These struggles are in part rooted in a failure to understand and teach core management operations and principles to its current and former leaders. In addition, despite congressional legislation and intense internal effort, the DOD is still not auditable, further demonstrating its overall inability to properly execute and resource organizational actions.

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24. Abraham Zaleznik, “Managers and Leaders: Are They Different?,” *Harvard Business Review* 55, no. 3 (May-June 1977): 67–78.

25. Joe Byerly, “Anti-Intellectualism and the Army: The Sky Isn’t Falling ... Yet,” From the Green Notebook website, 21 January 2014, accessed 6 April 2017, <https://fromthegreennotebook.com/2014/01/21/anti-intellectualism-and-the-army-the-sky-isnt-falling-yet/>. Byerly writes, “Growing a military intellect through education should not be for the sake of accumulating knowledge; it should serve the purpose of informing judgment that may be called upon to make critical decisions during a time of war.”

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27. Chairman of the Joint Chiefs of Staff (CJCS) Instruction 1800.01E, *Officer Professional Military Education Policy* (Washington, DC: U.S. Government Publishing Office [GPO], May 2015), accessed 6 April 2017, [http://www.dtic.mil/doctrine/education/officer\\_JPME/cjcsi1800\\_01e.pdf](http://www.dtic.mil/doctrine/education/officer_JPME/cjcsi1800_01e.pdf).

28. Ibid., Enclosure E, “Joint Professional Military Education,” in appendixes E and F, establishes the joint learning areas and objectives for the senior service colleges and National War College, respectively. Each appendix devotes a learning area to strategic leadership with outcomes in self-awareness; decision making; communication and negotiation; organizational climate, culture, and change; and strategic thinking. “Accountability” is mentioned in the context of leader personal responsibilities, not as a management skill.

29. Mintzberg, *Managers Not MBAs*, 38–39.

30. The authors reviewed the defense management-related courses, modules, or lessons from other senior service colleges and the Eisenhower School at Fort McNair. Overall, they focused more on comprehending and applying the processes and systems employed in the defense enterprise and little in regard to theory or principles underlying the decisions those tools support. Distance education programs were found to devote less time to defense management issues than resident programs.

31. Lessons related to contracting across senior professional military education (PME) focus broadly on the mechanics of the Defense Acquisition System or on specific topics such as operational contract support. Both topics assume that a particular “make or buy” decision has been made, otherwise these tools would not be used. A general discussion of this issue is provided in Matthew Bidwell,



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76. The following illustrates how the Army could operationalize these tracks in resident senior service college programs. At the U.S. Army War College (USAWC), the *Operational Leaders* line would correspond to the current resident program's Defense Management course, adjusted to include focused introductions to the foundational skills and domain components while de-emphasizing the detailed processes and systems used at joint and service levels. The USAWC's advanced defense management area of concentration would correspond to an *Enterprise Leaders* program, while other electives or programs focused on specific communities of practice could satisfy a *Community Practitioners* program. *Full Practitioners*, such as experienced acquisition officers and force managers, would be educated much earlier in their careers and therefore might join the *Enterprise Leaders* track or other advanced programs to be determined. *Full Practitioners* might also prioritize attendance at the Dwight D. Eisenhower School for National Security and Resource Strategy (formerly known as the Industrial College of the Armed Forces), which emphasizes defense management topics more than the other senior PME institutions. USAWC's distance education program and fellowships would be adjusted in kind, most likely along the *Operational Leaders* track. This approach would be offered to the other senior service colleges for their use as appropriate to their mission; however, we assume that their adoption would be predicated on changes to the PME policy in CJCSI 1800.01, as discussed in the main text.

77. For an example of a follow-on curriculum, the USAWC's resident program includes a concentration in advanced defense management during its elective period. It includes courses in joint processes and systems, force management, and defense resource management.



# Learning at a Distance

## The Potential and Perceptions of Distributed Learning

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### Abstract

Distributed learning, as a method of instructional delivery, has the potential to reduce costs while improving learning outcomes across the Total Force. The Army's distributed learning program currently leans heavy on asynchronous, self-paced, and online modules known as interactive media instruction. In contrast, blended learning methods combine face-to-face instruction with the latest instructional technologies to achieve superior learning outcomes. Distributed learning, with best practices such as blended learning, can be effective and engaging. Many of the challenges regarding distributed learning can be mitigated and overcome through the support of Army University, the integration of the Army's distributed learning efforts, and the dedicated efforts of expert Army educators.

**T**he Army must continue to invest in its leaders while facing an increasingly resource-constrained environment. In the face of decreasing budgets, distributed learning has the potential to educate the Total Force with significant cost savings. Although recent research reflects that student learning outcomes through distributed learning are identical to those for face-to-face instruction, significant perceptions and faculty critiques about the processes and challenges in its design, development, and implementation persist.<sup>1</sup> Confronting the perceptions of distributed learning that prevent the Army from realizing the full potential of this medium of instruction requires that Army University take the lead in addressing these perceptions.

The Army defines distributed learning as the "delivery of standardized individual, collective, and self-development training and education to soldiers, Department of the Army civilians, units, and organizations at the right place and time through the use of multiple means and technology."<sup>2</sup> Distributed learning is delivered "at ... the right time ... [through] synchronous, asynchronous, or blended" learning

technologies.<sup>3</sup> Distributed learning is delivered “at the right place” through resident and nonresident options.<sup>4</sup> Distance learning is a subset of distributed learning that does not require the physical presence of an instructor.<sup>5</sup> The methods of instructional delivery are limited only by the ever-expanding choices of technologies available in the market. Figure 1 (on page 54) shows the full array of distributed learning options for The Army Distributed Learning Program (TADLP).

Distributed learning is integrated into the Army learning model as found in U.S. Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-8-2, *The U.S. Army Learning Concept for 2015*. The Army learning model is a “framework comprised of elements that together create a learner-centric, career-long continuum of learning that is continuously accessible and provides learning at the point of need in the learner’s career.”<sup>6</sup> It is integral to implementing the Army learning model through the delivery of learner-centric training.<sup>7</sup> Distributed learning provides standardized training at the point of need for the Army learner and delivers individual, collective, and self-development modules to both train and educate the force.<sup>8</sup> Distributed learning technologies are thoroughly integrated in broader professional military education as well as specific training for skills needed in various organizations.

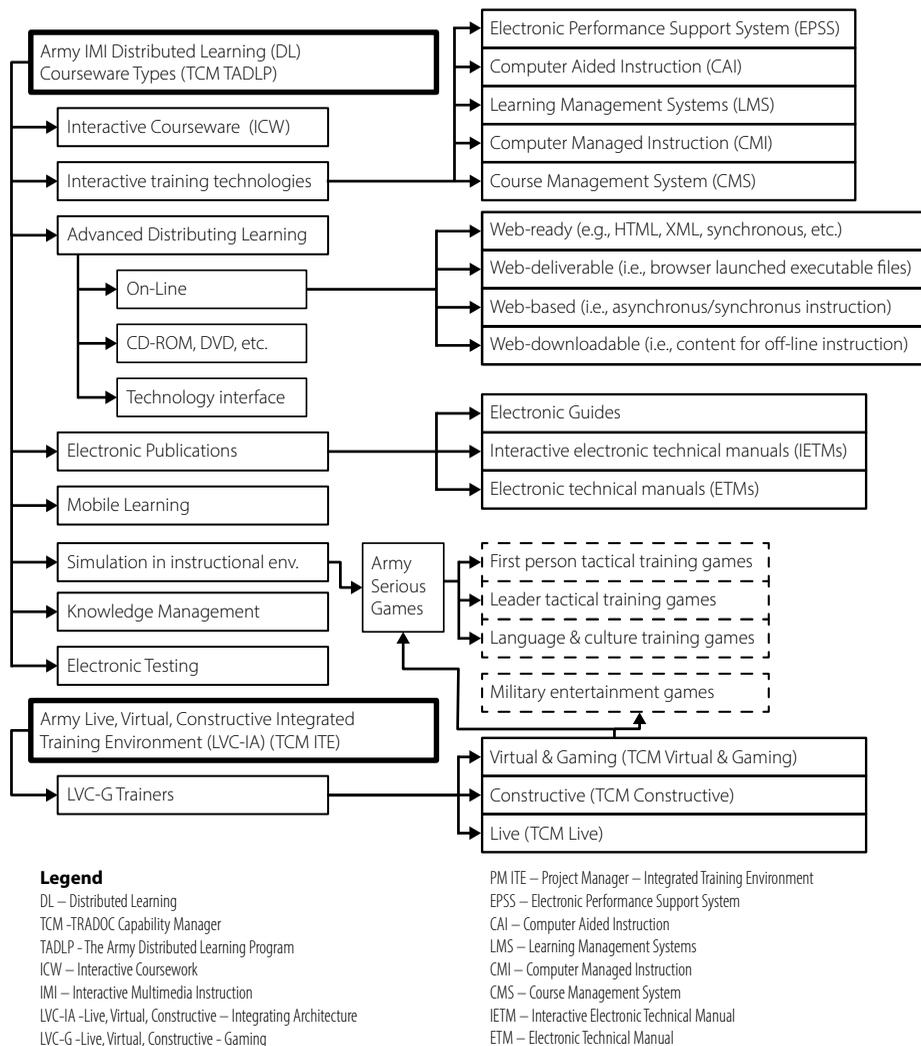
The TRADOC capability manager for TADLP (known as the TCM TADLP) provides “oversight, integration, and management direction in all matters” related to distributed learning for the Army.<sup>9</sup> TRADOC capability managers (TCMs) serve a myriad of functions, to include integrating requirements in their function across all doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF), serving as the TRADOC point of contact for assessing DOTMLPF within their function, and providing subject-matter expertise.<sup>10</sup> The TCM TADLP has roles both as the capability manager and as director of TADLP. The TCM TADLP is organized into five functional offices (see figure 2, on page 56): strategic plans and policy, acquisition and management, capabilities and implementation, joint distributed learning requirements, and TCM mobile. The TCM mobile is a separately chartered position responsible for mobile learning initiatives and activities.<sup>11</sup>

### Current Efforts in Distributed Learning

Distributed learning content and courseware are all instructional media, whether synchronous, asynchronous, or blended, that use interactive multimedia

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(Figure adapted from Mitchell L. Bonnett, "Influence of Learner Factors on Soldier Attitude toward Army Serious Gaming" [thesis, Old Dominion University, 2015])

**Figure 1. Army Distributed Learning Courseware Types**

instruction (IMI) as the method of instructional delivery.<sup>12</sup> IMI serves various training and education needs. IMI includes targeted (top-down) training directed from senior leadership such as defeating an improvised explosive device, mandatory training as found in Army Regulation (AR) 350-1, *Army Training and Leader Development*, or demand-based (bottom-up) training from operational units.<sup>13</sup> The TADLP website showcases some demand-based IMI, to include a



U.S. Army Medical Department anatomy course, an adaptive thinking course, and the Emergency Operations Center Development Tool, all designed based on the needs of the field.<sup>14</sup>

A significant effort is under way to build educational applications for mobile devices such as smartphones and tablets. TCM TADLP sees the potential for soldiers to access relevant and engaging training at any point and time through a mobile device as a game-changing capability that must be capitalized upon.<sup>15</sup> The TRADOC Application Gateway (TAG) hosts, links, and tracks mobile applications for Android and iOS platforms.<sup>16</sup>

One mobile application hosted on the TAG is the Individual Weapon System (IWS).<sup>17</sup> This application familiarizes soldiers with the Instrumentable–Multiple Integrated Laser Engagement System (I–MILES) IWS. The IWS “simulates the effects of direct fire weapons and its effects on soldiers during force-on-force training exercises.”<sup>18</sup> The IWS mobile application aids in understanding the IWS through engaging video of preparation, installation, alignment, and operation of the system. The application also tracks each user’s progress and offers easy access to the technical manual and other useful references. This application is free to Army learners on Android and iOS mobile platforms.<sup>19</sup>

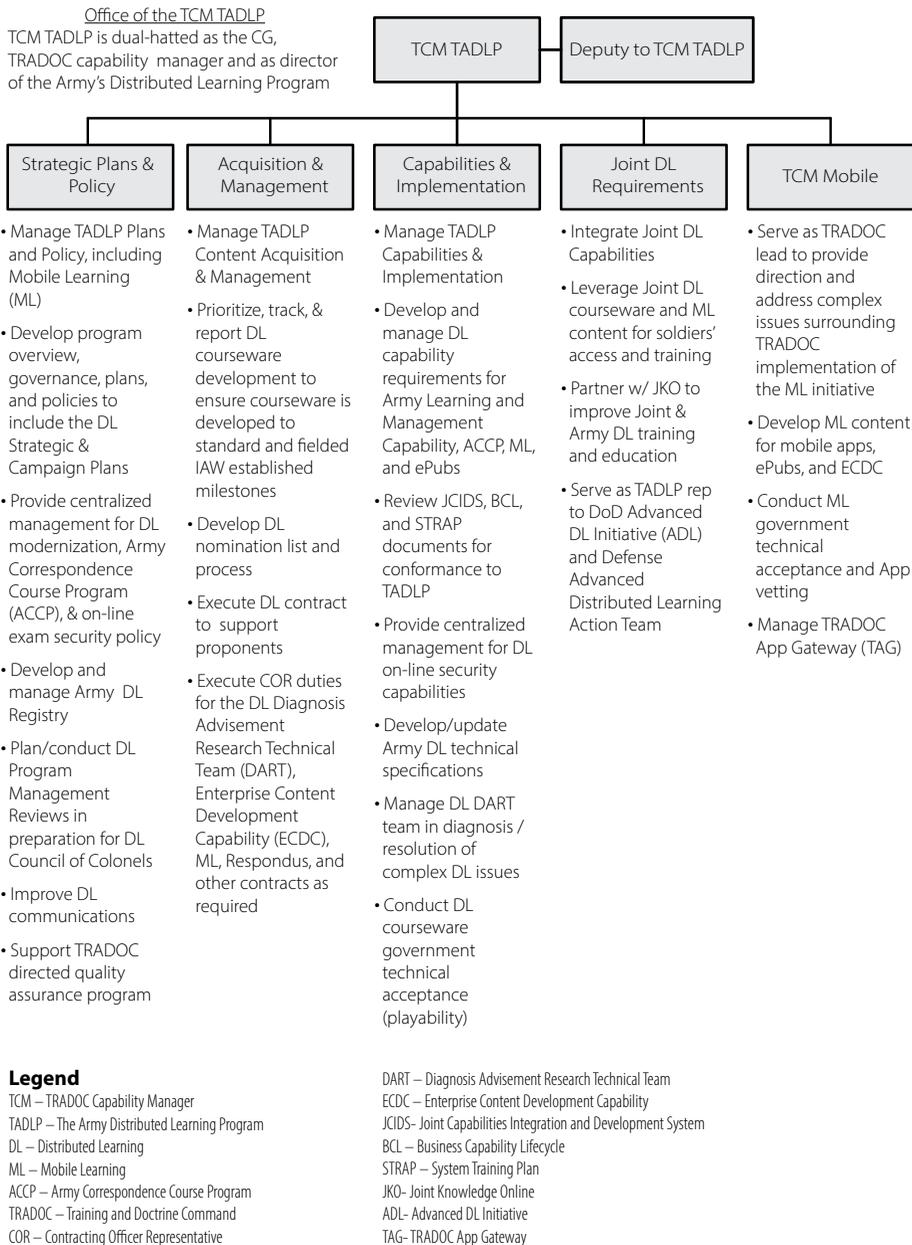
Simulations and serious gaming are an integral part of the Army’s distributed learning strategy.<sup>20</sup> While most soldiers receive more exposure to interactive courseware, simulations and gaming are growing in popularity and scope. Enhanced Dynamic Geo-Social Environment is a simulation developed for the U.S. Army and the Department of Homeland security that enables training in a simulated operational environment. It uses the Unreal 3 gaming engine to provide a multiplayer experience familiar to many soldiers accustomed to gaming in a leisure environment.<sup>21</sup> It is completely customizable. Recently, it was used to train soldiers in an “Attacking the Network” scenario in the fictional village of Kuzun, Atropia.<sup>22</sup> Enhanced Dynamic Geo-Social Environment can replicate any operational environment or scenario, from the most kinetic to the most cerebral, given enough lead time and support.

Blended learning—a mix of both distance and face-to-face instructional methods—is an area of focus for TCM TADLP. A stated goal in their modernization strategy is to “dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.”<sup>23</sup> Blended learning can be used in a resident or nonresident environment to meet instructional goals.<sup>24</sup>

### **Perception: Distance Learning is Ineffective**

One perception of distributed learning is that it is not as effective as face-to-face instructional methods. Research in the field of distance learning can shed light on





(Figure adapted from U.S. Army Training and Doctrine Command Capability Manager for The Army Distributed Learning Program (TADLP), "TADLP Overview Presentation," (Fort Eustis, VA: TADLP, 2017), 8.)

**Figure 2. Army Distributed Learning Training and Doctrine Command (TRADOC) Capabilities Manager for The Army Distributed Learning Program (TCM TADLP) Functions by Office.**

the absence of validity of this perception. In a study published by the U.S. Department of Education in 2010, Barbara Means et al. published a significant historical meta-analysis for the U.S. Department of Education in 2010 to determine the efficacy of online learning. This report is widely cited for good reason; it is the most comprehensive review of relevant empirical literature of online education and offers unbiased insights into the efficacy of web-based distance learning techniques.

The researchers screened 1,132 articles for their first study; 176 of them were deemed to have enough rigor to be included in their meta-analysis. Means et al. initially determined that learners “in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction.”<sup>25</sup> Interestingly, they found that blended learning—a combination of online and face-to-face learning—achieved better learning outcomes than online or face-to-face learning methods alone.<sup>26</sup> Means et al. suggest that the difference in learning outcomes between distributed learning and face-to-face may not reflect the medium for instructional delivery; instead, it “may reflect differences in content, pedagogy, and learning time.”<sup>27</sup>

Means et al. note that many practices in distance learning did not effectively increase learning outcomes. In particular, they note that the inclusion of online quizzes, video, or other media do not improve learning outcomes.<sup>28</sup> This seems consistent with the researchers’ view that the delivery method for instruction is less important than the pedagogy behind the instruction.<sup>29</sup> The authors stated that agency for learners was a much more significant contributor to positive learning outcomes and that allowing learners to control and interact in their instruction yielded positive learning outcomes.<sup>30</sup>

Other current research also supports the efficacy of distance learning. In their 2016 study, Joseph K. Cavanaugh and Stephen J. Jacquemin examined student learning outcomes in online courses as compared to face-to-face options. They found, in courses where both online and face-to-face instruction were available, there was little to no difference in grade-based performance.<sup>31</sup>

The research is supportive, overall, of distance learning as enabled by the Internet and related technologies. However, the consensus of online learning is not unanimous. Jeff Anstine and Mark Skidmore conducted a notable study in 2005 that showed negative learning outcomes for online learning. These findings point to a possible self-selection bias for learners in online environments. Anstine and Skidmore were concerned “that students with higher human capital endowment self-selected into the online format.”<sup>32</sup> When they analyzed the results of learners that self-selected into face-to-face or online environments and controlled for the self-selection of learners themselves, they found inferior learning outcomes in the online learning environment. While the majority of the literature, especially newer research, supports online learning, further findings such as those in Anstine and Skidmore’s study may have implications for placement of individuals into ideal learning environments.



## **Perception: Distributed Learning Stifles Engagement**

Another perception of distributed learning is that it reduces active engagement with the instructional material, therefore producing inferior learning outcomes. Dr. Liston Bailey, chief of the Learning Innovations and Initiatives Division for the Army's Institute for Noncommissioned Officer Professional Development, notes that younger learners, while digitally literate, tend to have poorer knowledge application than their older peers.<sup>33</sup> He posits that younger learners may have a weaker sense of agentic engagement, which he defines as the "extent to which they engage in proactive efforts to contribute to the flow of instruction and to energize their own sense of motivation to learn."<sup>34</sup> Distributed learning is flawed if digital technologies cannot fully engage learners in the educational process.

At face value, it may seem that distributed learning cannot produce the same engagement as face-to-face learning. However, the modality for learning is less important than content relevance and andragogy. Adult learners can engage with digital instruction when it is relevant to their goals.<sup>35</sup> Thoughtful course design with clearly stated goals that are relevant to the learner's goals will engage students; poor course design delivered in a "canned" format will surely disengage learners. The modality used is not the primary factor in increasing engagement.

Upon further analysis, Hiltz et al. determined that the mediating variable in these learning outcomes was not the modality but the level of engagement through active learning and collaborative techniques.<sup>36</sup> They found "differences in time devoted to class or active engagement resulting in differential outcomes."<sup>37</sup> Blended learning methods have the potential of mitigating this by allowing for more time engaging with material both face-to-face and online.

Deliberate and thoughtful efforts in distributed learning course design can engage learners and improve learning outcomes.<sup>38</sup> Distributed learning is a spectrum, ranging from stand-alone computer-based instruction to real-time interaction with facilitators enabled by conference technology and near-real-time collaboration with instructors and peers. Blended learning—combining the strengths of online and face-to-face modalities—is particularly effective and produces better learning outcomes than online or face-to-face alone.<sup>39</sup> This may be simply because a blended learning strategy increases the amount of engagement and time spent on task. In other words, more resources and channels for communication can increase engagement, whether with a computer or another person.<sup>40</sup>



## **Perception: Distributed Learning is a Burden on Learners**

A common complaint regarding distributed learning is that it places an undue burden on learners. AR 350-1 directs that commanders should schedule and provide time for Army learners conducting mandatory or quota-based distributed learning

during the duty day.<sup>41</sup> While commendable, institutional support for distributed learning is not always evident. Many learners must balance the competing demands of a full-time job, family, and education. Lt. Col. Jack Judy, retired, writes that, for many learners, “schooling becomes secondary or tertiary to the distance learner versus the ‘job’ for the face-to-face learner.”<sup>42</sup> It may be unrealistic to expect commanders to allow soldiers to conduct distributed learning during the duty day, at the expense of their job performance; training days, resources, and time are already limited and shrinking. This is a conflict that learners in residence do not face.

This additional requirement contributes to a negative perception of distributed learning by Army learners. In a 2012 survey, respondents stated, “commanders expected their soldiers to complete their distributed learning on their own time, thereby implying that it is a relatively unimportant component of training.”<sup>43</sup> Their commanders’ low prioritization of distributed learning contributed to the respondents’ equally low valuation of the same. In another survey, “respondents preferred in-class, because they want to concentrate on school away from distractions.”<sup>44</sup> It is hard to imagine soldiers engaging in a learning environment in these conditions.

The Army is not blind to these challenges. TP 525-8-2 recognizes that “soldiers complete mandatory distributed learning courses on personal time in a culture that promotes lifelong learning as an ideal, but often does not follow through with supporting actions.”<sup>45</sup> The authors then propose to force the issue by implementing Temporary Duty for Education, a policy that would differentiate between soldiers conducting distributed learning at home station and those conducting unit duties.<sup>46</sup> Others have advocated for releasing individuals from operational assignments to complete their education, whether face-to-face or by distance.<sup>47</sup> Whether these policies can be implemented without significant detriment to current operational demands remains to be seen.

### **Perception: Distance Learning Is Not as Valued as Resident Education**

An additional perception of distributed learning is that it is not valued by the institution. The dearth of time allocated towards distributed learning hints towards this larger issue. Stakeholder buy-in of distributed learning, particularly by senior leaders, sets the conditions for soldiers to truly engage and commit to learning through this modality. In a recent survey, it was noted that “some stakeholders did not believe in the effectiveness of distributed learning as a modality for training” and either actively or passively resist efforts to implement the Army’s distributed learning program.<sup>48</sup>

Many trace this attitude to previous policies in officer professional development. In 2012, Lt. Col. Jimmy C. Salazar wrote in regard to the U.S. Army Com-



mand and General Staff College that the Army reinforced the idea that resident education was superior “by only allowing the top fifty percent of an officer year group to attend CGSC as a resident student and forcing all others to complete the course by correspondence for promotion selection to lieutenant colonel.”<sup>49</sup> This is not the current policy; completion of resident or nonresident intermediate-level education is considered equal and noted as such on Army records. However, senior leaders who lived through this “top fifty percent” policy may have a tendency to promote a negative point of view toward distributed learning.

## **The Role of Army Educators**

Army educators cannot afford to wait for institutional solutions to improve the quality and delivery of learning. Educators across the Total Force must incorporate blended learning in their programs of instruction now in order to foster the critical and agile thinking needed in the Army today. The benefits of a blended learning approach for the Army learner are clear. Learning outcomes for Army learners are more successful in a blended learning environment than either the traditional classroom or the purely digital environment. It follows that Army educators should gain expertise in integration and implementation of blended learning techniques throughout their careers.

Fortunately, there are many resources and technologies available for Army educators to extend and expand the classroom. Some are already offered at certain institutions at no cost. Educators should inventory the list of available instructional technologies at their institution—or available at little to no cost—and take the time to learn the enterprise capabilities available through the TCM TADLP. Collaborative technologies such as file sharing, discussion boards, wiki sites, blogging, social media, live conferencing, and other collaborative tools should be understood and integrated into the classroom. The educator must create a space for interaction and learning beyond the physical classroom that complements and reinforces learning outcomes. Educators that lack access to the tools they need to create a blended learning environment should identify the capability gap and work with the TCM TADLP to fill that gap with a suitable solution.

Army educators should understand the capabilities and limitations of IMI when it comes to meeting learning outcomes. Simply assigning IMI courses for completion may signal that the learning is unimportant or secondary to learning done in person. For this reason, careful thought must be given when assigning IMI; over-extending soldiers to meet an excess amount of learning outcomes will both fail to genuinely meet learning outcomes and degrade soldiers’ performance.

If IMI is used to meet learning outcomes, educators can take active measures to engage learners and create a blended learning environment. Educators should strive to deliver learning content when needed, regardless of time and location, based on the soldier’s schedule. The goal for the learner must be to achieve the learning out-



comes, not simply race to complete the course and generate a certificate for completion credit. If possible, IMI should be assigned with a facilitator available to answer any questions and resolve any technical issues. The message to the Army learner must be that their efforts are valid, important, and that they are not completing another online training requirement to “check the box.” IMI provides content mastery but may not provide skills mastery; experiential learning facilitated by an instructor has the potential to mitigate this gap.<sup>50</sup> By reinforcing and applying the skills learned in IMI modules, skilled educators can integrate IMI into a blended learning framework and draw the most benefit for the Army learner.

Army educators must clearly signal that distributed learning from accredited sources is as valued as resident education. Support for distributed learning should be clear and unambiguous. Educators should check any biases they may have in regards to distributed learning against current research in education and instruction. Moreover, educators should engage in a conversation on the potential and merits of distributed learning whenever confronted with unfounded criticism against distributed learning as a viable method of instruction. Educators that effectively use distributed learning to achieve learning outcomes should share their successes with the larger educational community and engage in active and lively discussion on the particulars of those successes. The Army’s culture can turn in favor of distributed learning only through the active and determined efforts of the educational community.

### **A Way Forward**

Distributed learning is an effective means to meet the chief of staff of the Army’s number one priority: readiness.<sup>51</sup> The education and training of soldiers and leaders is critical to achieving this readiness. Army University must take active steps to leverage the potential of distributed learning to improve learning outcomes for all Army learners in support of the Army’s readiness efforts. Using best practices such as blended learning, Army University can avoid the pitfalls associated with some of the perceptions of distributed learning.

The perception that distributed learning, as a whole, is ineffective is false. Army University should recognize the effectiveness of blended learning and push to create blended learning environments in all Army educational programs. Blended learning combines the best of resident and distance learning methods to provide the best learning outcomes. This effort goes beyond phased training for professional military education. This means integrating the best collaborative tools, conferencing tools, forums, and other technologies to increase interaction, learner agency, and engagement to achieve the best learning outcomes for all Army learners. Embracing blended learning means more instructors, technical support, resources, and training of personnel up front. However, this would still be less costly than educating all personnel in a resident status. Outcomes from pilot programs such as United States Army Cadet Command’s



Cadre & Faculty Development Course, a blended learning course developed for senior Reserve Officer Training Corps instructors, should serve as a starting point in reevaluating the scope and means of distributed learning in the force.<sup>52</sup>

The perception that distributed learning stifles engagement is also false. Army University is best positioned to propagate best practices in distributed learning across major stakeholders in the institutional Army to ensure distributed learning offerings are engaging and improve learning outcomes for Army learners. The university's partnerships with public and private universities across the United States is a strength that must be leveraged. There are countless distance and blended learning programs throughout academia; Army University can learn from the best of these institutions and transfer those practices to the institutional Army.

The university should support the TCM TADLP in ensuring that distributed learning courses for all the university's schools, centers, and colleges offer the same robust capabilities as front-runners in the distance learning arena. The TCM TADLP is responsible for development and delivery of distributed learning courseware, while content is created by proponent schools.<sup>53</sup> Much of this content will be provided from schools and colleges under the Army University umbrella, to include Initial Military Training, the Institute for Noncommissioned Officer Professional Development, and the various centers of excellence and branch schools. It makes sense to integrate TADLP into the Army University structure—whether in a policy or coordinating role—to ensure the expertise resident within TADLP is readily available at the point of need. Furthermore, TADLP can facilitate understanding of best practices in distributed learning and integration of those practices into programs of instruction across all Army University schools and colleges. This has the potential to improve learning outcomes for Army learners.

The perception of distributed learning as a burden on learners can be mitigated using faculty, cadre, and instructors in the institutional Army grounded in distance education theory and best practices. In the mid-1970s, the Army began an effort under the banner of instructional systems development to integrate advanced instructional technologies and improve learning outcomes for Army learners.<sup>54</sup> The program did not meet expectations due, in part, to the lack of training of active duty military personnel and civilian technicians.<sup>55</sup> The program “became, to many, an excruciatingly painful experience.”<sup>56</sup>

Army University can directly influence this perception through its Center for Teaching and Learning Excellence (CTLE). The CTLE can host workshops or seminars in distributed learning techniques and instructional technologies for a wide array of Army educators who can further propagate their knowledge to respective institutions. The CTLE can also leverage blended learning techniques to reach various institutions and improve the quality of distributed learning implementation throughout various centers, schools, and colleges in Army University. The end state should be a cadre of educators invested in distributed learning as a viable and powerful method of instruction.



Finally, Army University can help change the perception that distance learning is not as valued as resident education. Improvement of distributed learning across the board must be part of this change. Army University stands in a unique position to influence future priorities and shape the Army's thoughts and culture in regards to education and training. Integration of TCM TADLP into the Army University structure, whether in a policy or coordinating role, is crucial to ensuring that distributed learning remains a visible and vibrant part of the Army's education efforts.

## Conclusion

Distance learning can educate the Army as well as live face-to-face instruction if significant distributed learning issues are addressed as part of Army University. It is imperative that the Army capitalize on this opportunity in a resource and time-constrained environment. Distributed learning programs must be fully understood, supported, and resourced with support from the Army University and in concert with TADLP. Coupled with quality educational efforts from the faculty, cadre, and instructors throughout the Army, distributed learning can contribute greatly to growing leaders who can think, execute, and win in the complex and challenging conflicts the Nation will one day enter. 

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# Online Collaborative Course Design for Army E-Learning

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## Abstract

The authors propose that learner interaction and engagement in distance learning courses require more than routine interactive treatments such as dragging and dropping objects. User experience and interactivity within the Army's offering of online courses should include levels of collaboration, along with social presence in each course. A discussion of related educational theories and design considerations is presented for consideration of Army instructional designers. In addition, the recommendations provided could enhance opportunities for collaboration and choice for learners.

Modern educational technology provides instructional designers with more options than ever before for creating immediacy, interaction, and collaboration in the design of distributed learning (DL) courses. In this writing, we suggest that the basic design features of online learning in Army DL courses can be enhanced to spark higher levels of engagement for soldiers and civilians. For too long, engagement in online learning has been erroneously construed as learner interaction with material on the screen—through gratuitous mouse clicking—that was expected to increase active learning.

Some writings have suggested that online learning should focus on communication and interplay among individuals rather than solely between the learner and media.<sup>1</sup> One can legitimately argue against the idea of course interactivity as simply an exchange of actions between the content and the user, measured on the basis of mouse clicks.<sup>2</sup> For example, a common design feature in Army online courses includes an area on the screen where the learner clicks an arrow to progress to the next learning section, in a linearly designed and controlled format. In fact, this form of learner-material interaction lacks needed learning relationships and strategies, so it can lead to poor learning outcomes.<sup>3</sup>

For the purpose of this article, we describe engagement as “the mobilization of cognitive, affective, and motivational strategies for interpretive interactions.”<sup>4</sup> In this

context, these interactions are more likely to occur in a social context through on-task collaboration with peers. Learner-to-learner interaction and engagement requires more than merely engaging in learner-material interaction that consists of clicking repeatedly on a screen or dragging and dropping objects. In fact, this form of engagement is often referred to as passive learning. Passive learning “usually involves teacher-centered methods that favor direct instruction in which students often learn through listening to and observing lectures presented by an instructor,” or in this case, passively going through lockstep content designed with little-to-no cognitive engagement or collaboration.<sup>5</sup> Based on the amount of innovative technology now available, the user experience and interactive treatments in Army online learning should include levels of social collaboration (e.g., peer-to-peer or learner-to-instructor), along with cognitively engaging activities.

### Increasing Active Learning and Collaboration

An active online learning environment can be described as one in which learners cognitively engage with learning content, participate in socially constructed activities, and collaborate while learning.<sup>6</sup> This type of learning environment is likely to support higher levels of motivation, especially when learners are personally engaged or motivated to achieve a specific learning goal. When individuals perceive relevance and intrinsic value in learning materials, they are likely to engage in active learning activities such as reflection or self-monitoring. In addition, Army collaborative online courses could allow options for learners to *ask an expert* as they seek mastery of the learning objectives in a lesson or module.

The nature of DL requires learners to be able to engage in appropriate self-regulation.<sup>7</sup> This paper focuses on two theories of motivation and self-regulation that complement instructional design theories and can lead to a willingness to engage in learning activities: self-determination theory (SDT) and control value theory. The first theory, SDT, advances the idea of learners benefiting from more opportunities for autonomous (i.e., self-directed) learning within a course or area of study if they are intrin-

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sically motivated to learn.<sup>8</sup> SDT as a characteristic of learning environments has been described as a path to increasing learner competence.<sup>9</sup> It is important to consider SDT when trying to design engaging DL content, since part of engagement involves personal levels of motivation. Intrinsically motivated individuals seek out learning experiences and tend to use effective learning strategies. For example, one can see versions of SDT in a course design where students can explore and practice using resources available in the online classroom to make use of self-assessments or to choose to work in groups.<sup>10</sup> The other educational theory worth mentioning is control value theory, which represents the concept that learners have achievement emotions about their skills and their abilities to complete an activity and attain its goal. At the same time, learners assign a value to the activity and focus on achieving success.<sup>11</sup>

Such theories provide a rationale for using instructional design techniques to challenge and engage learners while allowing for socially constructed learning experiences. When we design online courses so that intrinsically motivated students can control more of their learning path, we are supporting the precepts of self-determination, control, and intrinsic value as a part of active learning. Intrinsically motivated learning lends itself to collaborative learning strategies that enhance learning effectiveness. These theories provide the foundation for considering learner motivation and willingness to engage in effective DL activities.

## **Learner Collaboration in Distributed Learning**

Collaborative behaviors in learning are differentiated by a learning framework with a continuum of four modalities, listed from most to least engaging: interactive, constructive, active, and passive (ICAP).<sup>12</sup> The ICAP framework for learning suggests that as students engage more with learning materials along this path, from passive to interactive, learning effectiveness also increases. In this sense, the idea of learner-to-learner interaction relates to social collaboration where learning activities build upon each other. Activities may require students to actively contribute to their learning in the form of defending or arguing a position, answering comprehension questions, or checking their assumptions with a partner. Interactive activities are proposed to be more engaging than constructive activities, and constructive activities more effective than active activities, with all three being more effective than passive activities. Higher-engagement learning behaviors may be supported if designers can promote *deeper engagement* through a diverse mix of learning strategies, tools, and dynamic materials. In this regard, online courses for the Army should be designed as collaborative learning opportunities with a balanced mix of learning strategies through technology affordances intended to drive the learning experience. A cognitive philosophy of course design that leverages the ICAP framework for collaboration can increase individual motivation and engagement.<sup>13</sup>



## Current Army Distributed Learning Design

Army DL courses are too often based on a “one-size-fits-all” model of instruction. In other words, given the diverse composition of the Army’s population of learners, online courses are designed to meet the widest possible audience. Granted, this way of designing online courses was once adequate as a way to disseminate knowledge to groups of learners in a Web 1.0 world. However, to incorporate learner-centric learning strategies and experiential learning options in line with the Army Learning Model, collaborative elements are needed.<sup>14</sup>

Many of the Army’s DL courses are asynchronous in design. They do not take prior learning experiences into account, and they are not tailored to the individual. They offer limited feedback to learners and do not support learner-to-learner collaboration. For example, in spite of advancements in educational technologies and modern learning management systems, Army structured self-development courses for noncommissioned officers (NCOs) still rely mainly on passive activities such reading text on the screen or listening to a lecture.

Learning design of this nature is about passively taking in information. However, current research indicates that this type of education and training is neither learner centric nor effective at meeting the needs of adults.<sup>15</sup> A redesign of Army online courses, to make them more collaborative and engaging, could leverage Web 2.0 technologies and digital applications to support diverse learning activities. Granted, this proposal adds another layer to instructional design. While it is critically important to match objectives and course outcomes with appropriate strategies and methods, it is equally important to consider learner engagement.

For instance, for an objective that requires the learner to understand concepts, one could design an activity where the learner drags and drops examples to the appropriate category of concepts. While this is a strategy for teaching concepts, the activity of dragging and dropping material in and of itself does not mean that learning is occurring. Instead, the activity needs to include an element of learner engagement for deeper levels of cognitive processing. Given the same objective of dragging material to related concepts, and taking it one step further, the learner could engage with another student to explain why a given set is accurate or inaccurate. This collaboration engages the learner in “making meaning” with another learner.

Another example is to ask the learner to come up with additional categories the concept would fit into and to explain these categories to another student. The act of designing additional categories requires the learner to engage in elaboration strategies. The learner is then taking a concept and adding to its meaning, after which the learner must justify why this would be appropriate. In this sense, the strategy is matching the learning objective, while adding elements of engagement and interactivity, versus passive learning.

The DL environment can foster activities that encourage interaction, construction, and active learning through online discussions, debates, group projects, concept map-



ping, role-playing, content-related games, problem-solving activities, or even a semantic scavenger hunt. These learning activities require the learner to apply, synthesize, and construct new knowledge in collaboration with other learners, thereby changing a passive learning environment into an engaging one.

## Media Alone Do Not Teach

Researchers in the field of learning science have long contended that media are merely a vehicle for delivering instructional content. Media do not on their own influence learners; rather, the strategies used to achieve the desired learning objectives influence them.<sup>16</sup>

Instructional designers need a strong understanding of what the intended learners need to know or do in order for learning to occur. While the media alone do not cause learning, technology offers certain affordances that allow an instructional designer to incorporate interactive media to help build effective outcomes. Even though this research is not new, Army learning institutions continue to design courses that unnecessarily add extraneous and ineffective strategies that do not truly engage the students in their learning. Courses such as these become nothing more than repositories of information, or what was once termed “shovelware.”<sup>17</sup>

For instance, when an objective requires learners to think critically about an ethical implication of a course of action, but the content only requires them to read a linear selection of regulations, learners fail to experience the kind of interaction that could ensure they achieve the objective. Instead, the activity could ask learners to compare and contrast different ethics regulations. Then, they could engage in a scenario where one learner collaborates with another to defend an ethical position and to determine logical consequences. This strategy requires the learner first to understand given ethics regulations and then to engage in a collaborative problem-solving learning experience. In some cases, learner-to-learner collaboration may not be possible, but the learner could engage with a virtual tutor.

Options to design and develop such a learning experience range from low-cost (simple branching design) to complex (adaptive tutor) design. In a low-cost design, a feedback structure can be designed where the learner engages with a chat bot (text-based interaction), and the chat bot encourages the learner to engage in self-questioning activities or elaborate on positions. In a complex design, a probability-based decision tree can be used to determine a series of “if” and “then” features that would implement a similar strategy of self-questioning, feedback, and elaboration. In both examples, the learner is required to build on existing knowledge structures. Army instructional designers can build these types of interaction strategies into DL content. All of these examples require collaboration of some sort, which in turn can lead to deeper levels of learning.

Some may argue that the above examples apply only to education-related content. However, these techniques can apply to any content where learning requires



more than passive strategies. To give another example, if a learner is required to complete a series of steps to complete a task, the process can require the learner to interact with another learner or with a technology-based agent, where collaboration aids the learner in developing an understanding of when, where, and why a particular step is preferred. In this case, the added benefit is practice in a structured problem-solving environment.

To offer another example, in a collaborative design, students and their learning peers may participate in instant polls or use social media tools to share their understanding of the course content. Online audio or video quizzing, blogs, wikis, and Twitter feeds can easily be incorporated into a course design to enhance educational strategies.

**Table. Suggested Collaborative Course Design Features**

Method	Affordances
<b>Learner pre-assessment</b>	Allows the learner to assess current understanding of the content and needed areas to learn; aids the instructor in determining learner needs
<b>Purposeful and chunked use of content (meaningful chunks of related content, especially critical for complex material)</b>	Breaks complex learning materials into workable meaning chunks of content, allowing the learner to take advantage of available cognitive resources
<b>File sharing and resource sharing</b>	Encourages collaboration
<b>Social media features (e.g., discussion boards, wiki building, blogs, vlogs)</b>	Encourages collaboration
<b>Collaborative activities and strategies</b>	Encourages knowledge building and elaboration
<b>Online self-assessments and quizzes</b>	Enhances metacognition and self-regulation, scaffolds self-learning strategies
<b>User control of content</b>	Allows the learner to self-pace through content and review when needed
<b>Scaffolding feedback</b>	Provides quick and immediate feedback to help scaffold knowledge building. As the learner gains a foundational understanding, this would be delayed feedback to allow the learner time to work through and correct or understand issues.

(Table by authors)

## An Online Collaborative Course Design

Up to this point, this paper has proffered the need to implement more interactive and collaborative instructional design practices for DL. It has emphasized



the need to consider matching learning and instructional strategies and methods to the desired course outcomes, while at the same time adding another level of learner engagement to the design. It is possible to design a DL course with deeper levels of learning effectiveness appropriately. This section will provide a potential DL course design for meeting interactive, constructive, and active-learning needs. A notional collaborative online course design would include the key methods and affordances outlined in the table (on page 71).

When designers integrate such features, they can create collaborative and engaging courses that will be similar to DL courses soldiers might receive from a university. Army DL courses should in the future make use of programming options that support purposeful use of media and dynamic visualizations. For example, newer versions of Cascading Style Sheets (version 3) (CSS3) and hypertext markup language (version 5) (HTML5) have adopted both audio and video tags to make it easier to integrate media into webpages. In addition, a Document Object Model is an application programming interface (API) format for the design of webpages used in DL courses that can allow for such flexibility that programmers can easily build documents, navigate structures, and manipulate content as needed.<sup>18</sup>

The Army, at the time of this article's writing, is shaping a DL contract vehicle that will potentially allow for the procurement and design of relatively complex pieces of media (e.g., games, virtual reality applications, or simulations) for use in DL courses. This is a positive development that will help to promote active engagement for online learners in the Army.

In addition, web tools such as chat boards and conferencing software are available that allow designers the opportunity to develop more collaborative DL courses. Examples of media that can be used to support more collaboration and scalable implementation in the design of DL collaborative courses include

- ◆ augmented and virtual reality apps,
- ◆ 3-D animations,
- ◆ immersive scenarios,
- ◆ mobile apps,
- ◆ real-time surveys or polls,
- ◆ video lectures or interviews,
- ◆ tutorials,
- ◆ audio books or podcasts, and
- ◆ blogs and wikis.



## Mobile Learning Considerations

As the Army begins to move some learning content to the commercial cloud, soldiers will find greater opportunities to access nonrestricted DL content from anywhere on their mobile devices, such as Apple and Android devices.<sup>19</sup> Army online

courses in the future will need to be designed with mobile learning in mind, and they will need to use design principles associated with portability, social interactivity, context sensitivity, connectivity, and individuality.<sup>20</sup>

Security of the course materials and data integrity are of course important issues that must be considered when designing courses that include collaboration and social media elements. Nonetheless, DL is trending toward easy and open access to learning as a form of empowerment to the adult learner. This does not mean that the Army's online courses should be open access. Rather, the Army's goal should be to replicate some features of open-access courses without sacrificing data integrity. Other sectors of the economy, such as the financial services and healthcare industries, are overcoming security challenges that accompany access to just-in-time training with collaborative strategies.<sup>21</sup>

By having content that can be accessed at the point of need, a designer can tailor methods to objectives while considering both the affordances and limitations of the technology. For instance, if students were to access content through a mobile phone while riding a train to work, the content would need to be designed in blocked chunks that considered the screen-size elements and limitations, along with the ability to access materials while on the go. In this instance, an interactive multiplayer game in which an individual navigated through a virtual training environment to complete tasks would be inappropriate. However, if the individual were to use a personal laptop at home, the interactive game might be appropriate.

Ideally, any learner could engage in small chunks of content, measure his or her learning by accessing quizzes, and receive personal recommendations regarding needed content while progressing toward meeting learning objectives. The mobile content can include such features as augmented reality.

### **Commercially Used Design Approaches on the Web**

An evolution is now necessary to adjust instructional design strategies to support meaningful user experiences while meeting the learning requirements of soldiers and Army civilians. For example, structured self-development courses for the Army's NCO cohort consist of as many as eighty hours of presentations that, in general, do not require meaningful forms of collaboration to cover the course material (e.g., online discussion). The course designs, linearly based with limited engagement activities, are not engaging or learner centric.

The user interface that Army online courses now present is less dynamic and vibrant than what is common in the private sector. For example, online e-learning offerings by edX, Coursera, or LinkedIn Learning are typically designed around an expert leading the learner through the learning content. They are usually built on an arrangement of chapters, short lecture videos, exercise sheets, and a chapter quiz or reflective activity through which learners can assess their understanding



of the content. Often, short, high-fidelity video and podcasts are provided to draw the learner's attention into a real-world context discussion of the lesson topics. Occasionally, in place of a scripted lecture, one individual interviews a subject-matter expert to shed light on relevant concepts and principles while learners watch. Words on the screen are rarely used in combination with graphics. Another appealing aspect of this manner of content presentation is that it provides a seamless user experience based on modern programming features that do not require students to open multiple screens to see their progress.

Content in commercially available DL courseware usually is chunked into small video segments. Each segment typically consists of an interview with a subject-matter expert (i.e., expert voices) or a narrated explanation of a real-world application of a concept, process, or procedure. In addition to the chunked video selections, there are exercises and collaboration activities learners may use to practice and apply their learning. This approach provides greater opportunities for authentic practice of the knowledge or skills being learned.

In contrast, Army online courses are too often force-moderated page turners that violate principles of multimedia learning, and they may add extraneous processing tasks for the learner. For instance, an Army design typically includes a PowerPoint presentation of content with an instructor's voice recorded over the slides. The content is designer versus learner controlled, and there is limited use of interactive, constructive, or active learning strategies. When the material is complex, this passive design can lead to a lack of learning or even negative outcomes because learners are unable to engage in active construction of their knowledge.<sup>22</sup>

Contrary to principles of effective instructional design, the Army's online courses often are overloaded with charts, graphics, or small symbols that may be difficult to read depending on the size of screen being used.<sup>23</sup> For example, the modality principle for instructional design states that people learn more deeply from graphics with narration than from graphics and online text.<sup>24</sup> This research is not new, so when will Army instructional designers start using more effective DL design principles? As the future of technology progresses and research continues to open up the possibilities of effective instructional strategies, Army instructional designers can shift current design strategies to take advantage of emerging capabilities.

## Concluding Thoughts

This article is intended as a jumping-off point for stakeholder discussion about modernizing the design of Army DL products by making them more collaborative and engaging. The Army successfully manages an enormous training infrastructure that delivers resident and DL training annually to hundreds of thousands of individuals. However, the Army could promote a more active-learning environment within collab-



orative DL courses based on information technology advancements and trends in the DL industry. The following list contains additional recommendations:

- ◆ Make targeted use of a variety of media formats, and chunk content within DL courses.
- ◆ Incorporate media and design elements within online courses based on a cognitive philosophy of interactivity.
- ◆ Administer a pretest to allow learners to test out of portions of a lesson or module where it makes sense, and then “microteach” each learner by directing him or her to just those lessons or knowledge needed.
- ◆ Use appropriate instructional message design techniques to maximize learning opportunities (e.g., signaling key words and limiting unnecessary information).
- ◆ Include self-learning strategies to aid the learner in developing self-regulation skills (e.g., prompt note taking or self-questioning techniques).
- ◆ Use generative strategies to help with deeper levels of cognitive processing (e.g., elaboration or designing a new explanation for a theory presented).
- ◆ Allow for self-assessments where appropriate and provide additional opportunities for learners to reflect on their competencies and understandings of concepts.
- ◆ Include Web 2.0 collaboration (e.g., wikis, discussion threads, or online chat rooms) to allow groups of learners to check each other’s assumptions about their experiences.
- ◆ Find opportunities to make online learning more social, and allow learners to collaborate using Web 2.0 tools and applications.
- ◆ Establish a design committee among Army schools to formulate the next generation DL design requirements for Army education.

In writing this article for the *Journal of Military Learning*, the authors are not simply offering a causeless critique of Army DL. Many of the current online DL courses meet their intended purpose of providing useful information to learners. Rather, this paper emphasizes opportunities to make online learning more collaborative and engaging through better instructional design. The American essayist Henry David Thoreau once wrote, “Knowledge is to be acquired only by a corresponding experience. How can we *know* what we are *told* merely?”<sup>25</sup> Active learning and collaboration in online courses are a vehicle for that type of corresponding experience.

Finally, the Army should conduct a review of design features for its online courses with the greatest number of learners. There may be opportunities to use current dollars better while making online courses more tailorable, collaborative, and engaging for more learners. ❧



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## Notes

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# The Changing Face of Military Learning

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## Abstract

Globalization, social media, ever-increasing computing power, and the proliferation of low-cost advanced technologies have created a level of worldwide complexity and rapid change never before seen. To remain competitive in this environment, the Department of Defense and our coalition allies must identify new ways to empower our forces. In this article, we assert that part of that solution includes increased investments in our Human Dimension. Specifically, we argue that military personnel require an expanded set of competencies, higher levels of nuanced skills such as critical thinking and emotional intelligence, and more efficient and agile pathways to expertise, and that achieving these outcomes depends, at least in part, on revising the military learning enterprise.

Toward this end, we outline a vision for the future of military learning, painting a picture of the “art of the possible” and proposing a road map that outlines five enabling conditions needed to achieve this future vision: (1) cultivate ubiquitous learner-centric, technology-enabled instruction; (2) build upon the foundations of data-driven learning; (3) foster a learning culture at the organizational level; (4) encourage and empower social learning; and (5) draw upon deliberate practices and the evidence-based body of knowledge from learning science. Enacting any one of these conditions will pose significant challenges, and particular science or technology gaps associated with each condition create additional hurdles. Nonetheless, we argue that the time is right, in terms of understanding and demand, to take action. One major step in that direction is to agree upon a shared grand strategy, that is a vision for our Human Dimension and the military learning system that empowers it. That is the professional dialog this article attempts to help inform and encourage.

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## Introduction

The essential nature of war remains unchanging, although both its features and the world, in general, continue to evolve at an increasingly rapid pace. Globalization, ever-increasing computing power, and the proliferation of low-cost advanced technologies have created a level of worldwide complexity never before seen. Added to that, the democratization of communication, the rise of social collaborative technology, and an increasingly fluid notion of “nation” and “identity” enable widespread volatility. Digital communities form and take action around an idea, globally, before it even appears on the mainstream radar. The voices of government, national media, and conventional news outlets now compete with the voices of these multitudinous communities, many of whom provide greater appeal than the alternative formal channels. In short, the ways we learn, live, and collaborate are all shifting. To remain competitive, the Department of Defense and our coalition allies must identify new, high-value targets that give our forces overmatch and allow us to thrive under volatile, uncertain, complex, and ambiguous (VUCA) circumstances. In this article, we assert that investments in our Human Dimension are part of that solution.

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## Table. Desired Leader Attributes

1. The ability to understand the environment and the effect of all instruments of national power
2. The ability to anticipate and adapt to surprise and uncertainty
3. The ability to recognize change and lead transitions
4. The ability to operate on intent through trust, empowerment, and understanding (mission command)
5. The ability to make ethical decisions based on the shared values of the Profession of Arms
6. The ability to think critically and strategically in applying joint warfighting principles and concepts to joint operations

Table text from Chairman of the Joint Chiefs of Staff (CJCS) Notice 3500.01, "2014–2017 Chairman's Joint Training Guidance," (Washington, DC: Joint Chiefs of Staff, 10 October 2013), 3.

The Human Dimension comprises the people, their skills, and the performance-enabling technologies that directly enhance their abilities, such as decision-support systems.<sup>1</sup> Our personnel, or "human capital," carry a heavy burden in the evolving global military environment. They must be prepared to perform a broader range of missions, across all phases of war (from initial deferring activities through post-conflict stabilization and rebuilding), and across an expanded set of missions (including cybersecurity, expanded intelligence analysis, space, civil military affairs, and humanitarian assistance/disaster relief). They must possess the independent decision-making skills to operate without clear *a priori* task direction, because so many challenges they face are novel. They must have the capacity to operate on intent, balance their tactical actions against strategic goals, and integrate multiple domains of sophisticated skills (e.g., soldiering skills, sociocultural understanding, emotional intelligence, resilience, and self-reflection) all within a joint, interagency, intergovernmental, and multinational context. In other words, as Lt. Gen. Robert B. Brown, then commanding general of the U.S. Army Combined Arms Center, remarked during the Association of the United States Army's 2014 annual meeting (as paraphrased and quoted in an ARNEWS report):

For the last dozen years or so, the Army has said it needed people who are "comfortable" in conditions of "ambiguity and uncertainty ... [but] if you want to win in a complex world, 'comfortable' isn't good enough. We need individuals who improve and thrive in conditions of uncertainty and chaos." ... [Therefore, according to Brown,] needed to strengthen the human dimension are institutional agility, executing realistic training that replicates the complexity of the world, and the ability to out think the adversary and figure a way out of complex situations.<sup>2</sup>

Representatives from other services have issued similar statements. For instance, the *Marine Corps Vision and Strategy 2025* calls on the community to "prepare Marines for complex conditions and to counter the unexpected" and to help small-unit

leaders develop their abilities to “make sound decisions ... in an increasingly complex environment while potentially operating in a decentralized manner.”<sup>3</sup> And the chairman, Joint Chiefs of Staff, published in 2013 six “Desired Leader Attributes” that centered on cognitive readiness-type skills, such as anticipation, adaptability, and critical thinking (see table, on page 80).<sup>4</sup>

Despite the urgency and high-level support for Human Dimension efforts, it seems unlikely that significantly more time will be available to create increased capacity. Therefore, it stands to reason our personnel will need to achieve an expanded set of more sophisticated skills, behaviors, and attitudes within the same (or even less) amount of time. Further, given the VUCA milieu around us, personnel should expect to continuously learn, adapt, and grow across their entire careers. In other words, three fundamental reasons encourage reexamination of the status quo:

1. Breadth: Personnel require an expanded set of competencies.
2. Depth: Personnel require higher levels of nuanced skills (e.g., critical thinking, anticipation, and empathy).
3. Velocity: Personnel must gain these competencies more efficiently and have mechanisms for maintaining their relevance in an ever-changing environment.

The remainder of our discussion will focus on personnel development as one part of the solution to meeting these issues. (Complementary approaches might include personnel selection, talent management, performance-enhancing technologies, and other external technological or system supports, but these fall outside the scope of this article.) The following sections outline a vision for the future of learning within the Department of Defense and related coalition military agencies, painting a picture of the “art of the possible” and proposing a road map that, we believe, may help address the challenges outlined above and release the untapped potential of our Human Dimension.

### **Vision for the Future of Learning**

We envision a military learning environment that produces savvy, agile, and operationally adept individuals, teams, and organizational structures. In this future, our Human Dimension approaches each new challenge with reflection and creativity, the adaptability to notice and react quickly to evolving conditions, and a strategic understanding of the larger system and far-reaching effects of actions taken within it. This future force is not only comfortable in these conditions—but it thrives in them. Personnel develop deep understanding, across a range of cognitive, affective, interpersonal, and physical competences, and they refresh and adapt their knowledge and skills as situations evolve. The organization, too, shifts and grows easily with evolving needs, rapidly capturing and integrating lessons learned and disseminating new ideas painlessly across the enterprise.

To achieve this vision, we need to profoundly redesign the integrated continuum of formal and informal training, education, and operational experience. Hence, we

use the term “military learning” to more generically refer to this integrated spectrum. We believe that five enabling conditions will help bring this vision to life:

1. Cultivate ubiquitous learner-centric, technology-enabled instruction.
2. Build upon the foundations of data-driven learning.
3. Foster a learning culture at the organizational level.
4. Encourage and empower social learning.
5. Draw upon deliberate practices and the evidence-based body of knowledge from learning science.

If effectively realized, these conditions will construct a pervasive learning context (i.e., an intentional, interdependent learning environment composed of processes, technologies, and cultural practices). In other words, these conditions do not represent technologies or specific modalities of delivery, *per se*. These conditions instead define the enabling context, including interaction types, desired outcomes, and delivery approaches that create the conditions for effective future learning.<sup>5</sup>

## Roadmap to the Future Vision

**Condition 1: Cultivate ubiquitous learner-centric, technology-enabled instruction.** The road map begins with the idea of *fully blended* learning or what someone might call *ubiquitous learning*. This concept expands (substantially) upon the traditional definition of blended learning, which generally comprises some classroom delivery plus online elements. The expanded version proposed here parallels the idea of *ubiquitous computing* (i.e., where computing power exists everywhere, fills an essential role in our everyday lives but—enabled by smart, transparent technology—fades into the landscape, below active notice).

Stated more plainly, ubiquitous learning defines a learning context that is pervasive, omnipresent, and transparent. This necessarily means that formal and informal learning (including just-in-time learning and on-the-job learning) become seamlessly integrated with more formal modes of instruction. This also means that distinctions between training and education—and even between personal development and operational duties—blur. Operational decision-support systems become learning and assessment systems (and vice versa), and all of these technologies also become sensors for detecting context and performance and for tracking lessons learned.

This notion shifts key portions of learning away from something formally bound by time and place, into something continuous, timely, and expressly relevant to each learner’s tasks, state, and situation. As the classic study by Benjamin Bloom exemplifies, personalized learning, such as between a tutor and a student, achieves better learning outcomes than more homogenized instruction.<sup>6</sup> Of course, providing individual tutors for students is cost prohibitive, but technologies can help fill this gap. Traditionally, this has been the rallying cry of the intelligent tutoring systems (ITSs)

community. Today, that goal of automated, personalized learning has matured to include a more diverse set of formal and informal technologies that, like conventional ITSs, provide intelligent and adaptive learning experiences but across the broad military learning continuum as described above. This is what we mean by the phrase “learner-centric, technology-enabled.”

Many decades of research—often funded by the Department of Defense—have helped to mature the field of adaptive learning technologies and science. Most, if not all, of the raw materials exist to implement the complete vision, but more efforts and integrative work will be required in several key areas. From our perspective, those areas include blending of learning activities and operations, Personal Assistant for Learning, more learner-driven options (for both time and delivery), and improved andragogical models.

*Blending of learning activities and operations:* Although not a technology, nor even a science per se, achieving the ubiquitous learning capability will require new processes and an evolved organizational culture that accepts the notion of “fully blended learning.” Trainers, educators, instructional technologists, and operational systems designers (to name a few) will need to demolish the boundaries that separate their disciplines (and domains of ownership). Data, learning content, and even resources will need to be shared across organizational boundaries. Negotiating the processes to achieve this will likely prove just as challenging as developing the actual technologies that facilitate it.

*Personal Assistant for Learning (PAL):* Ubiquitous learning must be supported by a variety of systems, starting with a cluster of enabling technologies associated with a Personal Assistant for Learning (PAL). The PAL concept begins with an integrated learner model that captures a person’s full range of attributes and formal and informal developmental experiences. Based on this data, it recommends new learning opportunities (macro-adaptation) and can inform micro-adaptation within a given learning context. The PAL must be context-aware (to enable recommendation of just-in-time or opportunistic learning) and incorporate open learner models that enable an individual learner (and, possibly, teachers and supervisors) to view his or her learning trajectory.<sup>7</sup>

*More learner-driven options (for both time and delivery):* In a ubiquitous learning environment, learners necessarily take more ownership of their own development. This offers several benefits. First, learner-driven growth is often more effective than learning that is “done to” a student. Learner-driven content fosters metacognition (i.e., individuals thinking about their own thinking) and encourages greater personal accountability for growth. It helps students learn not only the content but also how that content fits within the larger development context (e.g., because they directly see the trajectory of learning), and it helps them see objectively how they are performing within that context. Technologies that enable learner-driven development promote generative learning processes, encouraging personnel to explore new ideas, try new ways of interacting, and actively apply their learning.<sup>8</sup>

Second, from a practical perspective, learner-driven development is more flexible to the individual. Previously, we have written about “the paradox of the white space,” that is, any given training schedule is already densely filled with no time for more content.<sup>9</sup> However, if personnel can complete a learning task on their own (e.g., an online course accessible anytime/anywhere), they can most likely find “white space” in their own schedules to meet that requirement. Increasing learner-driven options creates more flexibility. Even unsophisticated delivery of self-paced learning has been shown to be at least equally as effective as other, traditional methods (e.g., classroom-based presentation), while also creating an efficient, more satisfying, and less frustrating learning environment for participants.<sup>10</sup> To achieve this increase in learner-driven development, we need to leverage enabling capabilities, such as

- ◆ transmedia learning, which enables nonlinear learning across a variety of media modalities and where students can start and stop their learning, shift between different tools and contexts, and gain additional insights from the contrasting delivery styles;
- ◆ live/virtual/constructive (LVC) modeling and simulation, that is, the technology that directly enables the blending of training content or educational overlays into real-world contexts (and vice versa); and
- ◆ mobile learning, where “anytime, anywhere” becomes a reality, only constrained by available bandwidth, as learning management systems can flexibly serve content across a multitude of mobile learning access points.

*Improved andragogical models:* To support this future learning vision, in general, as well as the ubiquitous learning capability, specifically, improved instructional models will be needed. These need to have a more robust level of detail versus current broad-based solutions while offering greater scalability versus today’s ITSs. The frameworks need to tell us how to best design the open learner models, when to recommend certain learning opportunities or make specific adaptations, and how to best integrate transmedia, LVC, and mobile learning into students’ personalized development trajectories.

**Condition 2: Build upon the foundations of data-driven learning.** The concept of ubiquitous learning requires much more effective and extensive performance measurements and evaluations (where “measurement” or “test” refers to the quality of the data collection and “evaluation” refers to the quality of the interpretation and response to that data). Without measurement, we cannot be agile, we lose efficiency with reinforcing known principles to advanced personnel, and we lose effectiveness by pushing unprepared individuals ahead. Measurement is the lynchpin to the future learning vision. Data-driven learning enables real-time adaptations, whether in an instructional or operational context (which are blended together seamlessly anyhow in the future learning vision), and it will enable organizational adaptability at higher levels. In a world where learning is constant, data in the form of measurements and evaluations will be more pervasive and must be woven into the learning experience.<sup>11</sup>

To mature the idea of data-driven learning, we need to further develop, operationalize, and integrate several core capabilities. These core capabilities include massive human performance data, performance-sensing technologies, expanded measures, competency-based learning, and traceability through layers of the organization.

*Massive human-performance data:* Douglas Hubbard, author of *How to Measure Anything*, reportedly remarked (during a special event panel at Interservice/Industry Training, Simulation and Education Conference [I/ITSEC] 2014) that “the best way to spend one percent of a budget was to use it to optimize the other ninety-nine percent.” Testing and evaluation enable this, and they offer a high return on investment because they provide insight, enable adjustments, and allow us to make better decisions by removing some uncertainty around them. Presently, the manpower, personnel, and training systems within the military do a relatively poor job testing and evaluating personnel beyond their initial entry (e.g., ASVAB) or their physical factors (e.g., pace of a mile). As Brad Carson, acting undersecretary of defense for personnel and readiness, wrote in a 2015 memo, as reported by *Military Times*,

In managing personnel, we use only a narrow slice of information about service members and, as a result, we cannot optimize assignment, training, development or utilization of the available talent pool. In short, we have a one-size-fits-all model of production, in which people are not seen as uniquely valuable so much as almost interchangeable inputs into an industrial machine.<sup>12</sup>

Measuring other attributes, as well as managing and analyzing a greatly expanded set of more demanding data, is challenging. Current technologies enable the capture, management, integration, storage, sharing, access, and protection of such big data, but work is needed to integrate the available capabilities and to apply them toward the military human-performance system, broadly defined.

*Performance-sensing technologies:* Capturing this data will require a range of ancillary technologies, including environmentally based Internet of Things sensors, operational neurophysiological sensors, and other wearable devices.<sup>13</sup> Together these technologies will support more realistic measures *in situ*. They will be noninvasive, blending into the background (e.g., stealth assessments).<sup>14</sup> These capabilities will provide a basis for collecting data to inform the next item, expanded measures.

*Expanded measures:* In order to support the sort of learning outcomes described in the introduction, agencies will need an expanded set of metrics that can accurately capture and diagnose complex, unobservable, and latent knowledge, skills, and attitudes. To be most effective, this expanded set of measures will need to be multidimensional, collected in realistic contexts, and address all levels of assessment (from Kirkpatrick’s level-1 satisfaction to level-4 organizational outcomes). Further, the measures must address foundational attributes (e.g., competencies) versus highly context-specific task achievements (e.g., mission-essential

task lists). With the expanded scope of measures, assessments require improved psychometrics, such as greater reliability, sensitivity, repeatability, and integration into a larger assessment schema. With greater fidelity of learning and skill advancement, it would be a disservice for the assessments to remain basic go/no-go summaries of performance.

*Competency-based learning:* Competency-based learning means focusing development interventions on the underlying human-performance capacities (e.g., critical thinking and sensemaking) versus the context-specific tasks those capacities support. Competency-based learning offers two important benefits. First, focusing on underlying competencies directly supports preparation for the VUCA operational environment, where we are increasingly less able to fully define the exact tasks someone will need to complete.<sup>15</sup> Second, we need a standardized set of competencies so that different systems can share human performance data; that is, by agreeing upon standardized competencies, their ontological relationships, and definitions of their internal steps (or stages of learning), different databases and instructional technologies can share content and learner performance.<sup>16</sup>

*Traceability through layers of the organization:* Within the defense enterprise, any data-driven learning system will necessarily seek to translate individual *performance* data into individual *readiness* data. More than that, the system also requires models that predict team, collective, or institution-level readiness based upon collected data. These more abstract readiness estimates are unlikely to be simple aggregates of their component parts. This means that different models will be needed, with an emphasis on shifting the goal of learning based in response to the measured outcomes, or double loop learning.<sup>17</sup>

**Condition 3: Foster a learning culture at the organizational level.** By definition, “learning organizations” are those companies or agencies that continuously transform themselves to maintain relevance within changing conditions, respond nimbly to the newest threats, and capitalize upon emerging opportunities. To support these collective outcomes, learning organizations necessarily promote continuous improvement at the individual levels; they possess a set of organizational values, conventions, processes, and practices that encourage individuals—and the organization as a whole—to increase knowledge, competence, and performance. As a result, learning organizations reap many benefits. For example, a 2010 industry study conducted by Bersin & Associates found that those organizations with a strong learning foundation tend to significantly outperform their peers in areas such as employee productivity (37 percent greater), response to customer needs (34 percent better), and possessing skills to meet future demands (58 percent more likely).<sup>18</sup>

While military leaders may be less concerned with business outcomes, the underlying drivers of those outcomes (e.g., efficiency, responsiveness, and anticipation) are universal. Those attributes that support business outcomes also support the effectiveness and adaptability of defense institutions in the face of volatility and turbulence. Defense

agencies already invest heavily in lessons learned systems as well as information and knowledge management technologies. The aspiration to foster a culture of learning also already exists, but the scale and complexity of this task create challenges in all phases of the process from collection, to integration, and to eventual dissemination. Emerging technologies will be needed to achieve this; two examples are social computing to collect lessons and forecast trends, and automated knowledge resource creation.

*Social computing to collect lessons and forecast trends:* High-impact learning cultures capture lessons learned and notice meaningful leading indicators in a timely fashion. Now reaching a sufficient level of maturity, social computing can support such processes. Social computing combines collaborative social technologies (e.g., microblogging), large-scale data, and associated analyses.<sup>19</sup> For instance, we can leverage social computing crowdsourcing to identify learning opportunities or meaningful problem-solving approaches, or in a more passive modality, to collect data to inform forecasting and sensing for weak signals such as population outlooks or changes in attitude.

*Automated knowledge resource creation:* A particular challenge of lessons-learned systems involves efficiently processing the large quantities of input data, turning the data not only into information or knowledge but also transforming it into situationally relevant education and training content. This transformation from raw data to optimized learning traditionally requires trained analysts and instructional designers (with necessarily limited bandwidth), but automated semantic analysis systems can now supplement this process. For instance, performers working with the Army have demonstrated the use of semantic analysis to create standardized machine-readable data with testable topic models from doctrine or raw reports via automated semantic analysis.<sup>20</sup>

**Condition 4: Encourage and empower social learning.** Social collaborative technologies have given rise to the “Social Age,” where individuals connect (often globally) in informal communities who share and access information outside of the scope of traditional governance. Organizations have conventionally “owned” the training and education messages pushed down to learners. Such organizationally designed (formal) instruction will continue to play important roles for the foreseeable future; nonetheless, formal learning content is inherently abstract. Top-down content, no matter how engaging or dynamic, is always one step away from learners’ immediate reality. To augment formally created content, individuals need spaces and resources that enable them to engage with one another, to share knowledge peer-to-peer (or even from bottom-to-top), to co-create meaning, to probe new ideas, and to create shared narratives. That is, future learners require *social learning*.<sup>21</sup>

Social learning grows out of scaffolded environments that nurture and facilitate reflective, community-based, informal learning situated within participants’ everyday reality. Social learning should not be confused with social media, although connective

and collaborative technologies typically facilitate social learning. It is more accurately defined by the behavior, scaffolding, and community exchanges that occur.

Adopting a scaffolded social-learning approach requires a certain bravery, because the organization relinquishes full control of the story. It retains ownership of the overall narrative, but the community fills it with lived experience and meaning. Under this approach, organizations work within and alongside the grassroots communities, providing access to both the formal learning resources and tacit collective knowledge. In other words, organizations develop formal elements and then surround them with social, co-creative ones where participants can bring their own experience, everyday realities, personal challenges, ideas, and resources into the learning space.

*Collaborative learning approaches:* Social learning communities often manifest on their own, on Twitter or Reddit, for instance. However, to create deliberate (and secure) social-learning venues requires more intentionality and a greater understanding of the nature of social learning. How can we effectively leverage peer-to-peer and bottom-up learning within the military learning enterprise (which has been, and will continue to frequently include, top-down learning)? What are the most appropriate enabling technologies and facilitating techniques that will foster genuine social learning?

**Condition 5: Draw upon learning-science deliberate practices and its body of knowledge.** None of the previous road map elements will be possible without applying a deliberate, evidence-based approach to their design and implementation. The application of learning science helps meet this demand. Learning science is an applied, ecological discipline as well as a resulting body of knowledge about how people learn and how to enhance that learning. It touches on many related fields, such as cognitive science, neuroscience, computer science, educational psychology, anthropology, applied linguistics, and design science; however, it principally emphasizes the combination of human cognition and learning plus educational theory and practice. The primary goals of learning-science practitioners include creating and discovering learning innovations, continuously improving instructional methods, and applying learning-science knowledge to create effective, efficient, and affordable instructional interventions.<sup>22</sup>

Effective application of learning science can enhance any and all aspects of the previously outlined vision, and to be clear, the use of iterative, evidence-based learning-science methodologies is a critical enabler of those elements. In addition to the previously mentioned items, learning science can help inform the development of improved humans-in-the-loop and ongoing improvement of instructional delivery.

*Improved humans-in-the-loop:* Despite the many benefits technology provides, humans will continue to support the design, delivery, and evaluation of learning in fundamental ways. We should work hard to enhance their skills and prepare them to most effectively use the supporting technologies.<sup>23</sup>

*Ongoing improvement of instructional delivery:* Learning scientists (often working in conjunction with technologists and emerging software capabilities) continue to advance the discipline each year. Recent and ongoing areas of progress include better understanding and application of neuroscience principles, increased understanding of the factors that affect optimal learning states (such as the interplay of fatigue, stress, and nutrition), how to foster implicit learning, how gamification can contribute to instructional outcomes, and how to best apply other emerging techniques and technologies, such as massive open online courses. Continued analysis of such techniques—as well as many other future methods not yet popularized—will directly support the future learning vision.

## Conclusion: Enabling the Future

This article defined five enabling conditions of a future military learning environment that reliably produces savvy and operationally adept individuals across all echelons, promotes a culture of organizational learning, and expands the breadth, depth, and agility of our Human Dimension. Admittedly, it is a big idea.

By painting this high-level picture of the “art of the possible” we hope to promote a conversation about a collective strategy for the future of military learning. As constituents of the military learning enterprise, if we work in isolation and pursue diverse projects that individually achieve limited short-term goals, then we *might* arrive at the desired emergent outcome (after considerable investment). If we work toward a shared vision, however, we can achieve success with more surety and efficiency. This means *designing* the entire learning system with the strategic outcome in mind, optimizing the whole system (versus trying to optimize individual, siloed parts of it), and considering the human element throughout that design effort. We need to work in concert towards a shared vision—a grand strategy—and with a high level of coordination among agencies, industry, and research centers.

The building blocks of the five conditions outlined above already exist; yet, no one has operationalized, integrated, or collectively implemented them into real military learning environments. Individual projects and other examples showcase the possibilities of each concept described. They are like the raw materials needed to build a house, and the future military learning strategy (which this paper contributes to) is the blueprint for the building. We still need to put the pieces together, which is no small task. More work is needed.

We have reached critical mass in terms of understanding and demand for the future learning capability. The timing is right to unleash the full potential of our Human Dimension. All the resources are here—science, technology, and the demand—and all we need is a shared strategy and the will to pursue it. ☞

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## Notes

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# Leader Development, Learning Agility, and the Army Profession

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## Abstract

This paper outlines a model for leader development anchored in learning agility and the notion that learning-agile leaders apply previous learning and embrace new learning in novel or ill-defined environments. The methods of training for the versatile performance of future leaders must be maintained and encouraged to ensure that those men and women are well able to navigate the unknown and unpredictable battlefields of the twenty-first century. Leadership, according to the author, entails the repetitive exercise of discretionary judgments—all highly moral in nature—and represents the core function of the Army professional's military art. At both the higher and lower levels of unit command, the Army must be able to trust officers with the task of making decisions in uncertain situations. The profession is maintained by leaders who invest themselves and the resources of the profession to develop future leaders at all levels. Learning-agile leaders are adaptable, seeing actions that are different from the norm and readjusting in an appropriate manner. If mission command is the operating principle for the Army in the context of today's operational environment, says the author, then adaptable leaders are an absolute necessity. Leader development systems must enhance and maximize every soldier's motivation and ability to develop, and the overall Army culture must be supportive of such a process. The author states definitively that this leader development approach must become a part of the very fabric of the Army organization—engrained in institutional systems, highlighted in Army education and training, and reinforced in the personnel assignment process. Leader development is an investment required to maintain the Army as a profession.

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*A day after being sworn in as the new Army Chief of Staff, General Raymond T. Odierno laid out some priorities for his tenure. ... Future leaders must be adaptable, agile and able to operate in a threat environment that includes a combination of regular warfare, irregular warfare, terrorist activity and criminality.*

—Todd C. Lopez, "Soldiers Top Priority for the New CSA"

*Soldiers must ... be trained, equipped and trusted to operate autonomously. ... Such leaders must be able to recognize change and then lead others through that change. They must empower subordinates and create an environment where leaders are allowed to grow.*

—Lance Bacon, "A Tested Top Warrior"

**F**or the military, operational environments are a composite of the conditions, circumstances, and influences that affect capabilities and decisions and include all enemy, friendly, and neutral systems as well as the physical environment, governance, local resources, culture, and technology.<sup>1</sup> Such environments require leaders who are adaptive and agile and are able to make ethical, informed decisions efficiently and effectively. Current Army doctrine calls for "mission command," "task and purpose," and "intent-based" orders to guide the execution of military operations. The premise behind such concepts is that we expect trained and resourced leaders to operate within broadly defined boundaries and, armed with the commander's intent, to successfully accomplish a large variety of missions. The Army's emphasis is on decentralized execution based on mission orders. Appropriately, the focus is on the purpose of the operation rather than on the details of how to perform the assigned task.<sup>2</sup> This calls for ethical, adaptable leaders.

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Anecdotally, many Army leaders would agree with the preceding paragraph. Those who have spent time in either Afghanistan or Iraq, and have worked within an enormous area of operations, understand that subordinate leaders need to be resourced and entrusted to make decisions and operate many, many miles from the unit's higher command. This demands decentralized execution based on mission orders. Such a concept is not new. This is similar to how units (Allied and German) conducted operations in World War II. The scale of the battlefield and the limitations in communication technology made this a necessity. Combat operations in Korea were conducted along the same lines. Arguably, it was with the war in Vietnam that there was a shift in how commanders exerted command and control. The advent of the helicopter and technological advances in communications gave commanders the ability to garner close to "real time" situational awareness and thereby exert greater, centralized control of subordinate units.

After Vietnam, the Army's focus was on Cold War operations with a relatively predictable enemy. The expected nature of the European battlefield—one large campaign with multiple units involved side by side along a broad front—made it essential to centralize and efficiently manage various elements of combat power.<sup>3</sup> Subordinate units collected information to support senior commanders' decisions; rarely did the reverse occur. Most assets and most of the capability to analyze the information they gathered resided at division headquarters and higher. Similar arrangements governed the operational planning and employment of artillery, aviation, transportation and a host of other assets. A centralized battlefield required a centralized Army.<sup>4</sup>

Unlike the relatively stable and predictable environment of the late Cold War, today's battlefields evolve rapidly. They differ greatly from place to place and from one time to another. The luxury of being able to predict problems that units will face is gone, as is the ability to work out the best solutions in advance.<sup>5</sup> For example, a brigade commander in the post-9/11 operational environment has an enormous and complex fighting organization, complete with multiple and competing tasks. Units are spread over hundreds of miles. Company operations run from combat outposts and must be nested with the brigade commander's intent (two command levels up). Clearly, the brigade commander cannot be physically present everywhere to ensure that company commanders are operating within that intent. Present-day communication platforms allow higher commanders to access close-to-real-time information on friendly force disposition, and increasing requirements for pre-mission approval and post-mission debriefings add to the commander's situational awareness. In reality, however, given the dispersion of forces and the constraints of terrain, weather, and other battlefield factors, the brigade commander must trust subordinate leaders to conduct operations within the stated intent and to exercise decentralized decision making within the complexity of the operational environment. This is mission command.

Mission command demands that when necessary, unit leadership should coordinate and act together even without receiving specific direction from above. The

result will be an evolving leadership style that requires leaders and commanders to focus their attention downward and outward onto the battlefield.<sup>6</sup> The adaptation of mission command increases demands for responsibility and innovation at all levels. These demands place a greater premium on (1) adaptability to emergent situations; (2) operating with and within joint, interagency, and multinational organizations; (3) rapid responsiveness; and (4) the mental and physical agility to capitalize on opportunities in the field.<sup>7</sup> Key to the Army's adjustment is the ability to support leader development and empowering adaptability in individuals for operations in the current and future complex environment.

Leaders do not automatically "learn" about mission command. It is not something that simply happens to them, at either the higher or lower levels of unit command. It needs to be how the Army does business all of the time. During home station operations, mission orders and decentralized execution should be the *modus operandi*. If the Army is going to trust junior leaders to make critical decisions on an isolated outpost, they must be trusted to make similar decisions during training and normal, routine operations at home station.

Equally important is how such a mission command approach is engrained in institutional leader development systems. Mission command is not a concept solely within the purview of the operational force. Such an approach needs to be part of the very fabric of the Army organization, taught and highlighted in Army education and training and reinforced in the personnel assignment process. Specific broadening assignments that allow for personal, educational, and developmental opportunities would result in more effective leaders in this increasingly complex operational environment. Traditionally, the Army culture values and rewards those junior leaders who have extensive amounts of time in the tactical arena. Such positions are key to the development of effective tactical commanders. In this changing world, however, education and broadening experiences are instrumental to developing imaginative operational and strategic leaders, those who will master the current and emerging domestic and global complexities.<sup>8</sup>

### **The Profession and Adaptable Leaders**

When thinking of professions, the coins of the realm are often considered to be expertise and the knowledge underlying it.<sup>9</sup> More so than with other occupations, a profession focuses on generating expert knowledge and the ability of its members to apply that expertise to new situations. Medical professionals perfect medical techniques to apply to patients, attorneys apply legal expertise in courtrooms, and the military develops new technologies, capabilities, and strategies to provide for the common defense.<sup>10</sup> Such professional expertise is ultimately validated by the client and forms the basis for the trust between the profession and the society served. Furthermore, the success in the professional application of expertise results from effective and ethical application.<sup>11</sup>

To call an occupation a profession is usually to make a positive normative judgment about the work being done—work required for the well-being of society.<sup>12</sup> Such work is compared to particular standards that prescribe how professional activities ought to be done if they are good. For the Army Profession, three prescriptive factors mark the normative expectations of the profession: expertise that occurs through a system of professional development, education, and training; jurisdiction within which expert knowledge is applied; and legitimacy that is a result of the unquestioned trust between the Army Profession and the society it serves.<sup>13</sup> Because of its responsibility for wielding deadly force to defend the Nation and the Constitution, the Army Profession has developed throughout the course of its history an ethic that provides the objective norms and standards for the behavior of the profession and its members. Influenced by American society and the Army professionals themselves, the ethic requires that members transcend the norms of the pack, particularly when under chaotic and stressful situations such as those that exist in combat.<sup>14</sup>

Fifteen years ago, references to counterinsurgency in Afghanistan and Iraq, modular brigades, mission command, combat outposts, and the like would have been virtually meaningless to many, if not all, in the Army.<sup>15</sup> Today, these references are recognizable to most and represent just a handful of the important influences on the Army over the past several years. In the face of the evolving nature of the battlefield, repeated deployments and force structure and budget decisions, the Army has demonstrated great strengths in some areas, yet struggles in others. With this as the backdrop, the Army leadership directed a review of the Army Profession and determined that it is “essential that we take a hard look at ourselves to ensure we understand what we have been through over the past nine years, how we have changed, and how we must adapt to succeed in an era of persistent conflict.”<sup>16</sup>

Within this context, the current Army Profession campaign has identified a hallmark of the Army professional to be the “repetitive exercise of discretionary judgments, all highly moral in nature. ... [T]his represents the core function of the Army professional’s military art, whether leading a patrol in combat or making a major policy or budget decision in the Pentagon.”<sup>17</sup> Furthermore, it is the Professional Ethic that governs the culture, and thus the actions, of the professional. The ethic is the means of motivation and self-control and derives its substance from three primary sources: (1) functional imperatives of the profession; (2) national values, beliefs, and norms; and (3) international laws and treaties.<sup>18</sup> While the Professional Ethic treats mission accomplishment as a moral imperative, it also recognizes the moral and legal limitations that shape our judgment regarding the application of military force.<sup>19</sup>

The Army professional demonstrates leadership in volatile, uncertain, complex, and ambiguous situations within a framework of standards for conduct and performance. If the Army is a profession then the individuals in that profession are

experts. The Army professional possesses expert knowledge that is manifested as unique skills of the individual and within units. The repetitive exercise of discretionary judgments is one of those skills.

The expertise to make discretionary judgments is rooted in the professional's ability to be adaptable as a leader. As Gen. Odierno has stated, Army leaders must be adaptable. This adaptability is a component of the expert skill set of the Army professional. Adaptability entails "cognitive and behavioral capabilities with regard to (1) maintaining situational awareness and recognizing when behavioral changes are needed ... (2) changing behavior in a way that produces more effective organizational functioning, and (3) evaluating the outcome and making further adjustments, as needed, to achieve the desired results."<sup>20</sup> To be adaptable requires leaders to make an effective change in response to an altered situation. It is the ability of leaders to see actions that are different from the norm and to adjust appropriately. The implications of adaptive leadership for individual leaders entail a shift from centralized top-down authority, which emphasizes control and directed actions, to a process more about creativity, adaptation, indirect and multidirectional control or, within the framework of today's operational environments, decentralized execution, mission command, and intent-based orders.<sup>21</sup>

Leadership can be thought of as a social process that reflects the interactive nature of social network dynamics that occur among people in an organizational context.<sup>22</sup> Such a context is influenced by factors that complicate the operational environment in which the professional exists. Furthermore, leadership includes attention to common goals. Leaders and followers have a mutual purpose. Attention to common goals gives leadership an ethical underpinning because it stresses the need for leaders to work with followers to achieve selected goals.<sup>23</sup> Stressing mutuality lessens the possibility that leaders might act toward followers in ways that are forced or unethical.<sup>24</sup>

Leadership does not happen automatically and certainly one's ability to exercise discretionary judgments adaptively is not necessarily a routine action. In this regard, leadership, or more precisely leading, as a micro-level phenomenon, is a process of individual influence that reflects the cognitive and behavioral complexity of individual leaders.<sup>25</sup> More to the point, this process of leadership with its "cognitive and behavioral complexity" can be learned.

Creating, developing, and maintaining this expert knowledge and embedding it in members of the profession is critical. This expertise includes how to maximize the effectiveness of the Army's people. It also includes professional development and engagement in academic fields relevant to Army training and education.<sup>26</sup> The Army's jurisdiction in which to exercise this expertise is ultimately legitimized by the demands of society as voiced by its civilian leaders.<sup>27</sup> Leadership, as one category of the Army professional's expert knowledge, is applied in a jurisdiction ultimately defined by society but negotiated between Army and civilian leaders.

## Learning Agility

Since the Army professional is now required to be far more adaptable to changing conditions than ever before, finding ways and means to support this newer and more demanding necessity is paramount. One such support is the comparatively new construct in organizational and leadership research called learning agility—that is, the ability to apply previous learning and/or embrace learning in new, novel, or ill-defined environments.<sup>28</sup>

The expertise—or unique skill—of the Army professional to ethically exercise discretionary judgments can be acquired through learning agility. Adaptability is an action and is, therefore, an outcome of learning agility.<sup>29</sup> Individuals and/or organizations cannot be adaptive without the capacity for continuous learning.<sup>30</sup> People learn from experiences that force them to step up and lead, preferably requiring them to stretch their capabilities and move beyond experiences to be effective. Such experiences can be understood as crucible or trigger events—that is, transformative events that generate a learning point resulting in a script for further action in like circumstances. A range of such events can occur at any time during the course of one's life. If interpreted and processed, such trigger events will stimulate further leader development, as well as produce perhaps a new way of approaching a particular leadership issue, opportunity, challenge, or problem.<sup>31</sup>

Learning agility is enhanced by three types of behaviors: (1) *seeking*—looking for new learning opportunities and ways of doing things, particularly in areas where success is uncertain; (2) *performing*—being able to manage oneself in challenging situations and dealing with new situations in a way that maximizes performance; and (3) *reflecting*—thinking about experiences to surface critical information. However, there are also potential behavioral derailers that may have an impact on one's ability to do the above: *risk aversion*, which prevents an individual from seeking out new opportunities that may guarantee success but will ultimately inhibit learning; and *defensiveness*, which prevents an individual's ability to manage effectively new situations or biases the way one thinks about past experiences.<sup>32</sup>

For learning agility to be effective, conditions should exist within the organizational culture that will foster (enhance, not derail) such learning. In other words, the individual behaviors described in the preceding paragraph must also be manifested in the organization's culture. Organizational cultures are created by leaders, and one of the most decisive functions of leadership may well be the creation and management of this culture. Considering Edgar Schein's seminal work on organizational culture, the term "culture" is reserved for the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously and that define in a basic "taken-for-granted" fashion an organization's view of itself and its environment. These assumptions and beliefs are learned responses to a group's problems of survival in its external environment and its problems of internal integration. They come to be taken for granted because they

solve those problems repeatedly and reliably. This deeper level of assumptions is to be distinguished from the “artifacts” and “values” that are manifestations or surface levels of the culture but not the essence of the culture.<sup>33</sup> Therefore, it is not satisfactory for leaders to simply state that the organization supports those behaviors that foster learning agility and discourages those that derail learning agility. Such espoused beliefs are superficial unless they are grounded in the underlying assumptions of the organization.

### **Leader Developmental Readiness**

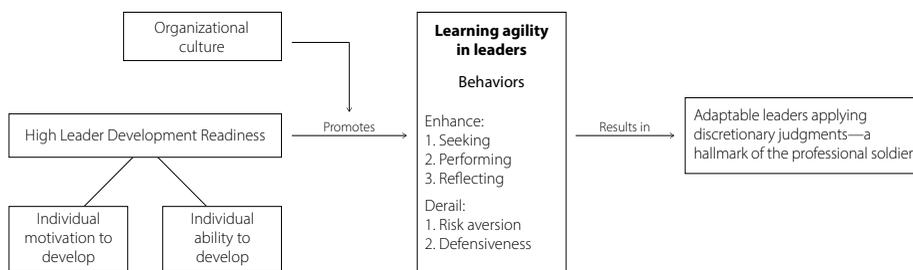
The developmental readiness of an individual is an important precondition for learning agility to effectively result in an adaptive leader’s ethical application of discretionary judgments. Leader developmental readiness is a combination of one’s motivation and ability. A leader’s motivation to develop “is promoted through interest and goals, learning goal orientation and developmental efficacy,” while a leader’s ability to develop “is promoted through self-awareness, self-complexity and meta-cognitive ability.”<sup>34</sup> Leaders with higher levels of developmental readiness will be better able to reflect upon and make meaning out of events, challenges, and/or opportunities that can stimulate and accelerate positive leader development, thus resulting in a more powerful experience during the learning agility process.<sup>35</sup>

Of the individual differences promoting motivation to develop, research suggests that to engage intently in learning opportunities intrinsic motivation is necessary, which in turn requires tapping into one’s interests and goals.<sup>36</sup> Furthermore, an individual with a high learning goal orientation will see challenges as a way to improve and develop and will be more accepting of failure in the pursuit of self-development. Finally, the third motivational component, developmental efficacy, represents a leader’s level of confidence that he or she can develop and successfully employ the knowledge, skills, and abilities that are required in certain leadership contexts.

The first component promoting an individual’s ability to develop self-awareness is characterized by one’s ability to reflect and use patterns of thinking and emotion in an open, positive, and learning-oriented manner that facilitates new learning.<sup>37</sup> In turn, self-complexity represents how a leader differentiates as well as integrates various sources and types of information. More complex leaders have more cognitive capacity with which to process, interpret, and appropriate new developmental experiences. The last ability component, meta-cognitive ability, facilitates “second order” thinking and allows for a much deeper examination (beyond reflection) of one’s own theory of leadership and to consider and make amendments to the theory on the basis of new experiences.

For the individual to be developmentally ready, the setting and context for positive leader development to occur and flourish must be established in the organizational culture. This culture must be supportive of leader development systems that promote developmental readiness. Enhancing leaders’ levels of developmental readiness

in the organization will prepare them to develop more fully from both planned developmental events and unplanned fortuitous events (the very type of events linked to learning agility).<sup>38</sup> Furthermore, as the individual leader’s readiness increases, so too does the organization’s culture for development. Leaders influence the leader development systems that their followers experience in organizations. Thus, to the extent that the leader is positive about and personally models development, it is more likely that he or she will promote positive development in others.<sup>39</sup>



(Figure by author)

**Figure. Developing Adaptable Leaders**

## A Model for Development

The figure above represents the theoretical construct outlined above. In short, high leader developmental readiness is comprised of one’s increased motivation and ability to develop. This promotes learning agile leaders—that is, leaders with an increased ability to apply previous learning and/or embrace learning in new, novel or ill-defined environments and who seek, perform, reflect and are not risk averse or defensive. The organizational culture moderates the link between developmental readiness and learning agility and whether this succeeds or fails. Finally, learning agility results in adaptable leaders.

To be effective, Army leader development systems must capitalize on one’s motivation and ability to develop as a leader. This cannot be isolated to platoons, companies, battalions, etc., but instead must be manifested throughout the depth and breadth of the Army Profession. Motivated and armed with the ability to develop as leaders, we can now grow learning-agile leaders. Such leaders are adaptable and able to exercise discretionary judgments ethically in a volatile, uncertain, complex, and ambiguous operational environment within the framework of the higher command’s intent. This is the hallmark of the Army professional.

## Research Questions and Methods

This research project addresses the question: Are Army senior leaders above average with respect to learning agility? The sample includes lieutenant

colonel/O5-level leaders and above and Department of the Army (DA) civilian equivalents. Snowball sampling to collect the survey data resulted in a sample size of eighty-nine respondents, who accessed the survey online. The survey included several demographic questions and replicated the Warner Burke working group research as closely as possible. A learning agility assessment survey was used which has been demonstrated to be reliable—consistent internally over time. Composed of twenty-nine items, this survey produced scores on the two primary components of learning agility: learning enhancers (seeking, performing, reflecting) and learning derailers (risk aversion, defensiveness).

In addition to the primary research question, three other related questions were considered: (1) Do senior leaders have high leader developmental readiness? (2) Are senior leaders adaptable? And, (3) is the Army's organizational culture supportive of learning agility? Hannah's measure of developmental readiness was used to assess the first question.<sup>40</sup> This measure consisted of seven survey items for each subcomponent of leader developmental readiness. The self-assessment adaptability measure from Pulakos et al. was used for the second question.<sup>41</sup> This measure consisted of eight survey items. Like the learning agility survey questions, the results are self-assessments and reflect what respondents believe about themselves. Finally, for the third question, the qualitative responses from the Army Profession survey were analyzed, specifically considering the questions pertaining to culture and leader development. The Center for the Army Profession and Ethic (CAPE) conducted this research as part of the ongoing campaign on the Army Profession.

**Table 1. Sample and Population Comparison**

	Sample	Population
<b>Size</b>	89	4,471
<b>Gender*</b>		
Men	81%	89%/86%
Women	19%	11%/14%
<b>Race</b>		
White	75%	82%
Black	12%	11%
Other races	13%	7%
<b>Branch</b>		
Combat arms	44%	40%
Combat support	16%	14%
Combat support services	40%	46%
<b>Graduate degree</b>		
	92%**	100%
<b>Deployed since 9/11</b>		
0 months	20%	21%
12-24 months	25%	29%
Over 24 months	23%	18%
* The first percentage is for the colonel population. The second percentage represents the gender breakdown for the U.S. military.		
** The Department of Army civilian respondents were the ones who reported no graduate degree. All of the officers in the sample reported having a graduate degree.		

(Table by author)

## Results and Analysis

**Sample composition.** The sample consists of eighty-nine respondents, of which 80.9 percent are male and 19.1 percent are female. The majority (75.3 percent) identify their race as white; 12.4 percent identify themselves as black or African American. Colonels make up 72.4 percent of the respondents while 16.1 percent are DA civilian equivalents. The remainder comprises lieutenant colonels and one major. There are no general officers in the sample. The average age of the respondents is forty-four years, and 92 percent of them have a graduate degree. In terms of branch, 43.9 percent are combat arms, 15.9 percent are combat support, and 40.2 percent are combat service support. Finally, the majority of the respondents have been deployed. When asked the number of months they have been deployed since 11 September 2001 in support of combat operations in Iraq or Afghanistan, 22.5 percent indicated that they were deployed for more than twenty-four months, while 24.7 percent had been deployed between twelve and twenty-three months; 20.2 percent of the respondents had never deployed.

**Table 2. Learning Enhancer Scores**

	Seeking	Performing	Reflecting	Learning enhancers total
<b>Range</b>	5–25	6–30	7–35	18–90
<b>Overall mean scores</b>	19.22	23.19	25.58	67.99

(Table by author)

Given that over 70 percent of the sample identified as colonels, the active colonel population was used to assess the representativeness of the sample. There are 4,471 colonels on active duty.<sup>42</sup> Women are overrepresented in this sample, but it is fairly representative when compared to the percentages of men and women in the Armed forces as a whole.<sup>43</sup> In terms of race, branch, and education, the sample is fairly representative. (With respect to numbers deployed since 9/11, the category of more than twenty-four months deployed is overrepresented, but these numbers are fairly representative in the other categories.) Overall, the sample is generally representative of the population and will permit one to draw some inferences from the findings. The sample and population comparisons are represented in table 1 (on page 101).

**Learning agility.** The learning enhancer dimensions represent those behaviors that demonstrate an appetite for learning (seeking), an ability to manage new and challenging situations (performing), and a willingness to reflect on experience in order to surface learning (reflecting). Table 2 shows the overall respondents' mean scores for each dimension. Also presented is the range of scores. The higher the mean, the greater the respondents demonstrate that learning enhancer dimension. From the results, it is clear that the respondents

demonstrate a high affinity for those behaviors that enhance learning agility. Seeking and performing are the two highest scores; they reflect, respectively, a tendency for these respondents to seek out new learning opportunities and to deal with new situations in a way that maximizes performance. Reflecting is the lowest score; this indicates that the respondents are less likely, compared to the other dimensions, to think about experiences to surface critical information.

The power of reflection should not be understated; a low score could be a reason for concern. Reflective observation, or learning by reflecting, entails observing carefully before making judgments, viewing issues from different perspectives, and looking for the meaning of things.<sup>44</sup> One needs to connect the conceptual with the concrete experience to make learning meaningful. This is done through active reflection. The conceptual, or abstract, is what one reads and thinks. The concrete is what one sees, feels, or touches—the experience.

To truly make the reflection active involves interaction with others and can be facilitated through a process of description, interpretation, and evaluation and knowledge: description is what you observe; interpretation is how you judge what you see; and evaluation and knowledge are what knowledge you bring to your interpretation and evaluation or what you need to know to improve your interpretation and evaluation. Reflection is therefore systematic, rigorous, and disciplined. It is not simply “thinking” about an experience. Reflection as a meaning-making process moves the learner from one experience to the next with a deeper understanding of its relationships with and connections to other experiences and ideas. At the start, however, this requires an attitude on the part of the learner that values the personal and intellectual growth of oneself and others.<sup>45</sup>

**Table 3. Learning Derailer Scores**

	<b>Defensiveness</b>	<b>Risk aversion</b>	<b>Learning derailers total</b>
<b>Range</b>	4–20	7–35	11–55
<b>Overall mean scores</b>	14.45	21.07	35.52

(Table by author)

The derailer dimensions represent behaviors that may impede learning, such as becoming defensive when faced with challenges or given feedback (defensiveness), or seeking only comfortable situations in which success is likely but new learning will be limited (risk aversion). Table 3 presents the results for these dimensions with the possible range of scores and the overall respondents' mean scores. In this case, the lower score is more desired, as this would indicate the limited impact of those behaviors that impede learning agility. For the respondents, the scores indicate a higher propensity toward these derailing behaviors. In this sample, we see a higher inclina-

**Table 4. Scores by Branch, Months Deployed, and Gender**

	Seeking	Performing	Reflecting	Defensiveness	Risk aversion
<b>Range</b>	5–25	6–30	7–35	4–20	7–35
<b>What is your branch?</b>					
Combat arms	18.33	22.70	25.07	14.37	20.62
Combat support	18.03	22.50	25.50	15.56	21.08
Combat service support	20.21	23.47	25.65	14.75	21.70
<b>Since 11 September 2001, how many months have you spent deployed in support of combat operation in either Iraq or Afghanistan</b>					
0	18.82	22.70	23.92	12.82	20.27
<12	20.85	23.76	24.38	15.84	21.69
12–23	19.00	23.09	25.37	15.58	21.39
>24	18.97	23.45	25.36	13.41	20.93
<b>Are you male or female?</b>					
Female	19.75	23.25	26.02	14.86	21.91
Male	19.11	23.21	25.52	14.38	20.90

(Table by author)

tion toward defensiveness and those behaviors that prevent one’s ability to manage new situations effectively or bias the way one thinks about past experiences. Also noteworthy is the tendency to be risk averse and therefore not to seek new opportunities for learning at the risk of unassured success.

**Table 5. Motivation to Develop**

	Intrinsic interest/goals	Learning goal orientation	Developmental efficacy
<b>Overall mean scores</b>	6.17	5.91	5.28

(Table by author)

Also analyzed were the learning-agility scores for enhancing and derailing behaviors while controlling for several variables. Table 4 shows the results for the behaviors when controlling for branch, months deployed since 11 September 2001, and gender. Of note, when considering branch, combat arms respondents are less likely to display the behaviors that derail learning agility, while combat service support respondents are more likely to exhibit the behaviors that support learning agility. When looking at months deployed, those respondents who have not deployed are less likely to exhibit derailing behaviors (less defensive and less risk averse). In general, deployed respondents are more likely to display enhancing behav-

**Table 6. Ability to Develop**

	<b>Self-awareness</b>	<b>Complexity</b>	<b>Meta-cognitive ability</b>
<b>Overall mean scores</b>	5.32	5.37	5.26

(Table by author)

iors (more seeking, performing, and reflecting) than the respondents who had not deployed. Finally, women are more reflecting and more risk averse than men.

**Leader developmental readiness.** Leader developmental readiness is a combination of one's motivation and ability to personally grow and develop. Leaders with higher levels of developmental readiness will be better able to reflect upon and make meaning out of events, challenges, and/or opportunities that can stimulate and accelerate positive leader development. Table 5 (on page 104) presents the mean scores for the respondents' motivation to develop. This comprises three components: intrinsic interests/goals (desire to grow and develop specifically as a leader), learning goal orientation (incremental mindset and learning-focused growth), and developmental efficacy (perceived ability to learn, grow, and develop). The scores range from one to seven, with a higher score indicating a greater perceived level of motivation. The results indicate that overall the respondents are more intrinsically motivated to develop as leaders when compared to any other component in the model. In contrast, they are less confident that they can develop and successfully employ the knowledge, skills, and abilities in certain leadership contexts.

**Table 7. Adaptability Dimensions**

	<b>Overall mean scores</b>
1. Solving problems creatively	4.15
2. Dealing with uncertain or unpredictable work situations	3.87
3. Learning new tasks, technologies, and procedures	3.98
4. Demonstrating interpersonal adaptability	4.09
5. Demonstrating cultural adaptability	4.21
6. Demonstrating physically oriented adaptability	4.11
7. Handling work stress	3.60
8. Handling emergencies or crisis situations	3.46

(Table by author)

Table 6 presents the mean scores for the respondents' ability to develop. This consists of three components: self-awareness (identity clarity and stability and emotional awareness), complexity (integration and differentiation as well as social

**Table 8. Army Culture Focus Group Responses**

Learning agility related (Is the culture supportive?)	Leader development related
"...encourage initiative and creative problem solving"	"Senior Army Leaders owe their subordinate leaders, commissioned and enlisted, at all levels, the structured education and practical experiences that create the diverse set of tools necessary to succeed in VUCA [volatility, uncertainty, complexity, and ambiguity environments]."
"Accept candor and support difference of opinion..."	"What may be a better approach is to look where great commanders are assigned post command. Send them to the schoolhouse where they can continue to inspire the greatest number of junior officers and reinforce the character of the profession as well as what good leadership looks like."
"Allow for diverse opinions and points of view..."	"Incorporate the 360-degree leader feedback into Army selection and promotion boards."
"Continue to empower commanders and senior enlisted leaders to influence, build, develop, and lead their Soldiers and units."	"Poor military preparation of leaders: Most leaders fail to understand what it is to mentor, the committed time required. Army <i>must</i> train its force to understand the value of soft power; huge investment on the front end, lasting results at the tail."
"Empowering junior leaders, with proper oversight–leadership, will go a long way to improving the culture and climate of units across the Army."	"Require leaders to attend proven leadership courses that involve a self-assessment and group exercises to make them really think about leadership and to improve the way they communicate, provide recognition and feedback, and influence others."
"Encourage candor. If leaders don't know what people really think, they won't be able to know how their decisions are affecting others. There is no room for leaders who just want 'yes men.'"	"Spend a week or short period of time at a university (Dean level) department to see just how broad their group of people is and how they work together. The diversity and inter-workings at a school are very unique and give a very good perspective (appreciation). Maybe before brigade command."
"It takes someone with a strong sense of self to seek out opinions and perspectives contrary to those they hold"	

(Table by author)

and self-complexity), and metacognitive ability (knowledge of cognition and regulation of cognition). The range of scores is from one to seven with a higher score indicating a greater perceived level of ability. The results show that respondents view their ability to develop in each of the components generally the same. In the extremes, they see their ability to differentiate as well as integrate various sources of information as greatest and their ability to think beyond reflection and engage in deeper examination of their experiences as lowest.

**Adaptability.** Adaptability was measured across seven dimensions. Table 7 (on page 105) presents the overall mean scores for each of these dimensions; the range of scores is from one to five.

The scores indicate the respondents' self-assessment of effectiveness within each dimension. The higher score represents a greater perceived level of effectiveness. The results show that the respondents believe they are less effective in handling emergency or crisis situations and most effective in demonstrating cultural adaptability. In general, however, the scores demonstrate a high level of adaptability.

**Organizational culture and leader development.** As part of the ongoing Army Profession campaign, CAPE conducted a series of surveys and focus group in-

interviews on a wide range of topics relevant to the campaign. One open-ended question is particularly relevant to this discussion: What do you recommend senior Army leaders do to improve unit/organization culture and climate?<sup>46</sup> The 251 colonel/O6 responses to this question were analyzed for those comments that address whether Army culture is supportive of learning agility and leader development in general. Table 8 (on page 106) summarizes the responses with common themes.<sup>47</sup>

Considering the responses related to learning agility, the respondents recognize the importance of creating an environment that facilitates learning. Candor, initiative, empowerment, sense of self, creative problem-solving, and encouraging differences of opinion are all factors that allow learning agility to flourish. In a culture characterized by such traits, leaders will be more likely to seek, perform, and reflect—and less likely to be defensive and risk averse.

For those responses relevant to leader development, several are assignment-related and speak to the idea of increasing broadening experiences. The respondents indicate the need to increase the diversity of assignments, to include assignments outside of the army and in either the business or academic realm.

There was also an expressed desire to keep quality officers in the institutional Army teaching leadership and other relevant subjects to the next generation of officers. Often these officers are assigned to “non-schoolhouse” positions. Finally, there was a trend to include more multirater feedback in the Army development and evaluation process.

## Discussion

The Army senior leaders who participated in this research are generally representative of the larger population. This allows several inferences with respect to the findings. First, one can infer that Army senior leaders have a perceived high level of leader developmental readiness. They view both their motivation to develop and ability to develop as high (although perceived motivation is higher). Next, senior leaders perceive themselves as adaptable, especially when it pertains to cultural adaptability and creative problem solving.

Finally, for learning agility, Army senior leaders perceive themselves to be high on those behaviors that enhance learning agility (seeking, performing, and reflecting) but also high on those behaviors that potentially derail learning agility (risk aversion and defensiveness). Given that learning agility is the ability to apply previous learning and/or embrace learning in new, novel, or ill-defined environments, the conditions within the Army’s culture may not currently exist to get the most out of this ability. To do this, leaders need to maximize the enhancing behaviors and minimize the derailing behaviors. The responses to the open-ended questions about Army culture show the need to create the conditions for learning and development but point to the Army not being there yet. That the Army is “zero

defects” was a common response to the question of what to fix in Army culture. This creates an environment for risk aversion and defensiveness.

The proposed leader development model begins with leader developmental readiness. High leader developmental readiness promotes learning agility in leaders, which results in adaptable leaders. Army culture moderates these linkages, however, and determines to some degree whether development succeeds or fails. This model requires further research in order to truly understand the value of its efficacy. Time and measures of assessment other than self-reporting will provide a more meaningful understanding of the model and will help to clarify direction of causality. The current research suggests, however, that senior leaders have high developmental readiness, they are learning agile—to a point—and they are adaptable. In the eyes of the population assessed in this study, Army culture is currently moderating learning agility in a negative manner by creating the conditions for defensiveness and risk aversion.

The current Army Leader Development Strategy (ALDS) states that the operational environment,

demands that [the Army] develop leaders who understand the context of the factors influencing the military situation, act within that understanding, continually assess and adapt those actions based on the interactions and circumstances of the enemy and environment, consolidate tactical and operational opportunities into strategic aims and be able to effectively transition from one form of operations to another.<sup>48</sup>

The model proposed in this research fits within this strategy, especially as it applies to learning agility. Leaders who are able to apply previous learning and/or embrace new learning are exactly the leaders the ALDS seeks to develop.

The ALDS is anchored in three paradigm shifts.<sup>49</sup> The first is the effect of increased complexity and time. Institutional policies and processes optimized for a world of mass and rapid decisive campaigns against predictable peer competitors must adapt to the new norm of uncertainty and protracted conflict. The evidence is only beginning to be amassed, but early results indicate that learning-agile leaders are able to manage themselves in these challenging situations and deal with these new situations in a way that maximizes their performance and that of their subordinates. Second, the effect of decentralization requires the hierarchical Army to match tactical agility with institutional agility and to develop leaders who can create an environment of collaboration and trust to promote adaptation and innovation. This can happen only if there is a culture that minimizes defensiveness and risk aversion, thereby allowing learning-agile leaders to seek out new ways of doing things and reflecting on these new experiences to surface critical information. Finally, with the need to frame ill-structured problems, learning-agile leaders

Table 9. Correlations

	Motivation to develop	Ability to develop	Adaptability	Months deployed since 9/11	Months in unit	Number of people supervised
<b>Seeking</b>	0.377*	0.468*	0.467*	-0.077	0.042	-0.077
<b>Performing</b>	0.505*	0.637*	0.670*	-0.035	-0.038	0.063
<b>Reflecting</b>	0.353*	0.497*	0.409*	0.045	0.111	-0.087
<b>Defensiveness</b>	-0.160	-0.129	-0.043	-0.026	-0.261**	0.136
<b>Risk aversion</b>	0.261**	0.266**	0.336*	-0.031	-0.155	-0.097

\* Correlation is significant at the 0.01 level (2-tailed) \*\* Correlation is significant at the 0.05 level (2-tailed)

(Table by author)

can seek and reflect within a supportive culture to understand a problem and appreciate its complexities before seeking to solve it.

## Limitations and Recommendations for Future Research

There are several limitations with this study for which future research needs to account. First, the sample should be more representative of the larger population to allow for precision in generalizing the findings. Also, all scores on the survey are self-reported. The incorporation of a multirater feedback system (peers, subordinates, supervisors) would provide for a more complete assessment of the survey measures. In addition, a longitudinal study potentially would allow the researcher to assess how and why learning agility, developmental readiness, and adaptability develop over time. Finally, the theoretical model outlines several links between the variables. These propositions are based on the existing research and literature on leader developmental readiness, learning agility, and adaptability. Future research should empirically test these relationships.

Table 10. Theoretical Model Correlations

	Motivation to develop	Ability to develop	Adaptability
<b>Learning agility</b>	0.675*	0.659*	0.576*

\* Correlation is significant at the 0.01 level (2-tailed)

(Table by author)

Table 9 shows the correlations between learning agility and several variables: leader developmental readiness (motivation to develop and ability to develop), adaptability, number of months deployed since 11 September 2001, number of months with current unit, and number of people supervised. Future research should focus

on the significant correlations to further understand how and why these relationships exist and the direction of causality.

Table 10 (on page 109) outlines the correlations between the overall learning agility construct and the specific variables in the theoretical model. Again, further research should explore these relationships in more detail.

## Conclusion

The purpose of this research is to elicit thought and discussion about current Army leader development systems and the qualities required of Army leaders. The current Army Profession campaign makes the case for a reevaluation and assessment of the Army as a profession and the attributes of the Army professional. Leadership entails the repetitive exercise of discretionary judgments, all highly moral in nature, and represents the core function of the professional's military art. Discretionary judgments are the coin of the realm in all professions, foremost in the military.<sup>50</sup> Leader development is an investment required to maintain the Army as a profession. The profession is maintained by leaders who place high priority on and invest themselves and the resources of the profession to develop professionals and future leaders at all levels.<sup>51</sup>

The mission of Army leader development is to educate, train, and provide experiences to progressively develop leaders to prevail in full-spectrum operations in a twenty-first century security environment and to lead the Army enterprise.<sup>52</sup> This requires a balanced commitment to the three pillars of leader development: training, education, and experience. As part of this process, Army systems must provide leaders with the motivation and the ability to develop, with the focus on developing learning agile leaders. These are the agile, adaptable, and innovative leaders that the Army requires. An uncertain and complex future security environment demands that Army leader development prepares leaders to operate with competence and confidence in ambiguous, frequently changing circumstances.<sup>53</sup> These are learning-agile leaders. 

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## Notes

**Epigraph.** Todd C. Lopez, "Soldiers Top Priority for New CSA," *Army News Service*, 9 September 2011.

**Epigraph.** Lance Bacon, "A Tested Top Warrior," *Army Times*, 19 September 2011.

1. Field Manual 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office, February 2008).
2. Ibid.
3. Casey Haskins, "A Good Answer to an Obsolete Question: The Army's Culture and Why It Needs to Change," U.S. Army War College Fellowship Paper (Carlisle Barracks, PA: 2010).
4. Ibid.
5. Ibid.
6. Donald E. Vandergriff, *One Step Forward, Two Steps Back: Mission Command versus the Army Personnel System*, Land Warfare Paper 84 (Arlington, VA: Association of the United States Army, August 2011), accessed 10 April 2017, <https://www.ousa.org/sites/default/files/mission-command-versus-army-personnell.pdf>.
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9. Don M. Snider, "The U.S. Army as a Profession," chap. 1 in *The Future of the Army Profession*, eds. Don M. Snider and Lloyd J. Matthews, 2nd ed. (Boston: McGraw-Hill, 2005).
10. Ibid.
11. Ibid.
12. James Burk, "Expertise, Jurisdiction and Legitimacy of the Military Profession," chap. 2 in *The Future of the Army Profession* (2005).
13. Ibid.
14. Snider, "The U.S. Army as a Profession."
15. U.S. Army Training and Doctrine Command (TRADOC), *An Army White Paper: the Profession of Arms* (Fort Leavenworth, KS: Combined Arms Center, 8 December 2010), accessed 10 April 2017, <http://cape.army.mil/repository/white-papers/profession-of-arms-white-paper.pdf>.
16. Ibid., 1.
17. This was previously presented in Don M. Snider and Gayle L. Watkins, "Introduction," *The Future of the Army Profession*, 1st ed. (Boston: McGraw-Hill, 2002); TRADOC, *An Army White Paper: The Profession of Arms*, 5.
18. Tony Pfaff, "Military Ethics in Complex Contingencies," chap. 18 in *The Future of the Army Profession* (2005).
19. Ibid., 410.
20. Sean T. Hannah, John T. Eggers, and Peter L. Jennings, "Complex Adaptive Leadership: Defining What Constitutes Effective Leadership for Complex Organizational Contexts," in *Knowledge-Driven Corporation: Complex Creative Destruction*, eds. George B. Graen and Joan A. Graen (Charlotte, NC: Information Age Publishing, 2008), 80–81.
21. Ibid.
22. Ibid., 102.
23. Peter G. Northouse, *Leadership: Theory and Practice*, 5th ed. (Los Angeles: SAGE Publications, 2010).

24. Ibid., 3.
25. Hannah, Eggers, and Jennings, "Complex Adaptive Leadership," 103.
26. Richard Lacquement, "Mapping Army Professional Expertise and Clarifying Jurisdictions of Practice," chap. 9 in *The Future of the Army Profession* (2005).
27. Ibid., 225.
28. Warner W. Burke and Workgroup (Nathan Gerard, Adam Mitchinson, Robert Morris, and Kate Roloff), "Learning Agility Assessment," unpublished presentation, 2010.
29. This has not been empirically tested. I offer this proposition based on my reading and analysis of the existing literature on adaptability and learning agility; this will be the basis for future research.
30. Hannah, Eggers, and Jennings, "Complex Adaptive Leadership."
31. Bruce J. Avolio and Sean T. Hannah, "Developmental Readiness: Accelerating Leader Development," *Consulting Psychology Journal: Practice and Research* 60, no. 4 (December 2008): 331–47.
32. Burke et al., "Learning Agility Assessment."
33. Edgar H. Schein, *Organizational Culture and Leadership* (San Francisco: Jossey-Bass Publishers, 1985), 6–7.
34. Sean T. Hannah and Bruce J. Avolio, "Ready or Not: How do We Accelerate the Developmental Readiness of Leaders?" *Journal of Organizational Behavior* 31 (November 2010): 1181–87.
35. Avolio and Hannah, "Developmental Readiness: Accelerating Leader Development"; this link between developmental readiness and learning agility is not empirically tested. However, I believe it is a reasonable proposition given the behaviors associated with learning agility and the outcomes of increased leader developmental readiness. This is an area for further research.
36. Hannah and Avolio, "Ready or Not."
37. Ibid.
38. Ibid.
39. Avolio and Hannah, "Developmental Readiness."
40. This measure requires the express permission of Sean Hannah (sean.hannah@usma.edu).
41. Elaine D. Pulakos et al., "Predicting Adaptive Performance: Further Tests of a Model of Adaptability," *Human Performance* 15, no. 4 (2002): 299–323, accessed 10 April 2017, [http://www.tandfonline.com/doi/abs/10.1207/S15327043HUP1504\\_01](http://www.tandfonline.com/doi/abs/10.1207/S15327043HUP1504_01).
42. The Army data are from the Officer Master File, Office of Economic Manpower Analysis, U.S. Military Academy, West Point, NY. The sample includes the current stock of active duty Army lieutenant colonels (O5s) and colonels (O6s), as of 30 September 2011. Branch Grouping: Other includes Judge Advocate General Corps, Chaplain Corps, Medical Corps, Medical Service Corps, Medical Specialist Corps, and Veterinary Corps. Most recent civilian graduate degree type reports the share of officers with at least one civilian graduate degree by type. Most recent civilian graduate degree type indicators are conditional upon having at least one civilian graduate degree (e.g., among colonels with at least one civilian graduate degree, 45.7 percent have a professional graduate degree). Professional degrees include both master and doctoral degrees in professional fields (i.e., health, law, education). Master's includes the remaining nonprofessional or academic master's-level degrees. Doctor includes the remaining nonprofessional or PhD degrees.

## LEADER DEVELOPMENT

43. Pew Research Center, *The Military-Civilian Gap: War and Sacrifice in the Post-9/11 Era* (Washington, DC: Pew Social & Demographic Trends, 5 October 2011), accessed 10 April 2017, <http://pewresearch.org/pubs/2111/veterans-post-911-wars-iraq-afghanistan-civilian-military-veterans>.

44. David A. Kolb, *Kolb Learning Style Inventory* (Philadelphia: Hay Group, 2007).

45. Thoughts in this paragraph were gathered from discussions with Dr. Lee Knefelkamp, professor at Teacher's College, Columbia University.

46. From the Army Profession survey conducted by the Center for the Army Profession and Ethic (CAPE). Contact CAPE (<http://cape.army.mil/index.html>) for more details on survey.

47. This is a summary of the responses and is not all-inclusive. Many responses to this question were not relevant to learning agility or leadership. (Not all responses that were relevant to these topics are included here.) Many said the same thing or something similar. I highlighted the common themes.

48. TRADOC, *A Leader Development Strategy for a 21st Century Army* (Fort Leavenworth, KS: Combined Arms Center, 25 November 2009), accessed 10 April 2017, <http://www.au.af.mil/au/awc/awcgate/army/army-ldr-dev-strat-25nov2009.pdf>.

49. Ibid.

50. TRADOC, *An Army White Paper: The Profession of Arms*.

51. Ibid., 5.

52. TRADOC, *A Leader Development Strategy for a 21st Century Army*.

53. Ibid.

# Combatting Dualistic Thinking in Professional Military Education

Capt. Juan P. Remy, U.S. Army

*This paper summarizes research originally described in Juan Remy, "Combatting Dualistic Thinking with Problem-Based Learning in my Classroom," (paper, U.S. Military Academy Master Teacher Program, 2015) accessed 7 April 2017, [http://www.usma.edu/cfe/Literature/Remy\\_16.pdf](http://www.usma.edu/cfe/Literature/Remy_16.pdf).*

Educational philosophers of the past century, including John Dewey, Malcolm Knowles, Peter Jarvis, and others, emphasized that education in the classroom should complement students' lives. They recognized that personal engagement increases individual learning and allows students to become fully independent and self-directed learners. Higher education attempts to foster those qualities by encouraging students to use critical and innovative thinking in their studies. Similarly, professional military education (PME) must strive to be personally engaging and participatory to facilitate officers' cognitive development beyond dualism—or black-and-white thinking—so they can thrive in uncertainty. This paper describes how integrating problem-based learning with William G. Perry's scheme of intellectual development and William S. Moore's Learning Environment Preferences (LEP) questionnaire can lead to better outcomes.

Perry's scheme describes four cognitive development levels: dualism, multiplicity, relativism, and commitment.<sup>1</sup> In *dualism*, students learn to recognize, memorize, and regurgitate facts to get high grades; answers are right or wrong. In *multiplicity*, students acknowledge that information from the teacher can be questioned and therefore cannot be the ultimate answer. In *relativism*, students challenge data presented to them based on their experiences, and they want to participate and influence the outcome of problem solving, thus taking on greater ownership of their learning. In *commitment*, they adopt a final stand in their studies, and they formulate, research, and validate their opinions compared to their peers.

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## COMBATting DUALISTIC THINKING

Moore's LEP questionnaire can be used to assess students' cognitive level according to Perry's scheme.<sup>2</sup> When administered before the start of a course, the LEP survey enables teachers to identify students' positions on the Perry scheme and tailor the course to promote further cognitive development toward multiplicity and relativism levels. Administering the LEP again at the end of the term can provide students and teachers evidence of students' cognitive growth resulting from their studies.

This approach has been used at the U.S. Army Command and General Staff College and at the United States Military Academy at West Point (USMA) to assess student cognitive growth.<sup>3</sup> At USMA, a group of sophomore students was surveyed to determine their position in Perry's scheme. This information gave the instructor and the students insight regarding their current perspective on learning and helped encourage students to strive to reach higher cognitive levels. When dualism was identified as a challenge, a problem-based learning approach helped reduce it.

Problem-based learning is an inquiry process in which students resolve questions, curiosities, doubts, and uncertainties about complex phenomena in life with maximum practice. The problem-based learning approach uses scenarios to allow teachers to be facilitators, not impediments, to individual learning. Problem-based learning allows students to retrieve, innovate, and use their knowledge to solve problems with current methods; therefore, students become more engaged in their learning.<sup>4</sup>

For example, at USMA, this author used the 2016 United States presidential election campaign to discuss how to conduct "enemy" analysis on each presidential candidate, using the military decision-making process (MDMP). In addition, wedding invitations were used to teach the importance of "the five Ws" (who, what, when, where, and why) in formulating a mission statement. This approach ensured each student had a firm grasp of the fundamentals of military operations while encouraging problem solving and critical thinking applicable on the battlefield and daily life. Using problem-based learning delivered some thought-provoking, attention-grabbing, and out-of-the-ordinary solutions during class while elevating students to, at least, the multiplicity position on Perry's scheme.

Implementing Perry's scheme with LEP and problem-based learning will help teachers keep students engaged in learning that is personally relevant to their own lives. Students will adjust, confirm, or identify their cognitive development level and track their progress. Problem-based learning will raise students' cognitive levels by keeping classrooms vivid with current and relevant discussions, allowing students to reach their own solutions to different problems and be confident that there could be multiple answers to one problem. Ultimately, understanding of Perry's scheme, coupled with a problem-based learning approach, will reduce dualism in the classroom. That approach will facilitate students' ability to develop their intellect and be critical thinkers while creating solutions to problems. Teachers will be a guide, not merely an authoritative figure for grading. ☞

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## Notes

1. See Barbara K. Hofer and Paul R. Pintrich, eds., *Personal Epistemology: The Psychology of Beliefs about Knowledge and Knowing* (Mahwah, NJ: Erlbaum, 2002) for a description of Perry's scheme.

2. William S. Moore, *The Learning Environment Preferences: Establishing Preliminary Reliability and Validity for an Objective Measure of the Perry Scheme* (College Park, MD: University of Maryland, 1987). The Learning Environment Preferences (LEP) instrument is available from the Center for the Study of Intellectual Development, 1505 Farwell Ct. NW, Olympia, WA 98502; see an "LEP Scale" example, not for reproduction, at the University of Southern Maine website, accessed 7 April 2017, [https://usm.maine.edu/sites/default/files/Office%20of%20Academic%20Assessment/assess-res\\_lep.pdf](https://usm.maine.edu/sites/default/files/Office%20of%20Academic%20Assessment/assess-res_lep.pdf).

3. Juan P. Remy, "Combating Dualistic Thinking with Problem-Based Learning in My Classroom." This study was undertaken in the sophomore-level Military Science 200 (MS200), "Fundamentals of Small Unit Tactics" course that I taught in 2015. Some of the scenarios described in this article were used in 2016, after the paper was submitted.

4. Edwin M. Bridges and Philip Hallinger, *Implementing Problem Based Learning in Leadership Development* (Eugene, OR: ERIC Clearinghouse on Educational Management, University of Oregon, 1995).

# Recommended Reading

## Books

### ***Make it Stick: The Science of Successful Learning***

By P. C. Brown, H. L. Roediger, and M. A. McDaniel

(Recommended by Sherry Hernandez, United States Air Force Air Education Training Command, A3T)

This book can completely change a reader's perspective about how to study and learn. The authors look at some of the more popular teaching and learning methods (rereading, highlighting, learning preferences, assessments, etc.) and bumps them up against some of the newest and insightful cognitive science data to show that much of what we think about learning is actually wrong. This book has the perfect mix of empirical and anecdotal evidence that will appeal to students, teachers, developers, trainers, and supervisors.

### ***Small Teaching: Everyday Lessons from the Science of Learning***

By James Lang

(Recommended by Col. Steven Delvaux, Vice Provost Academic Affairs, Army University)

This is an excellent book that provides a good overview of the results of some of the latest learning science studies and then provides practical tips on how to integrate that knowledge on how people learn into the classroom. A must-read for teachers, instructors, and trainers throughout the military's learning enterprise who are looking for very doable ways to enhance their teaching and improve their students' learning outcomes.

### ***What the Best College Teachers Do***

By Ken Bain

(Recommended by Dr. John Persyn, Faculty and Staff Development Division, Army University)

Based on years of research spanning a broad range of campuses, this book provides an insightful look at what characterizes excellence as an educator. The book causes a teacher to think deeply about the knowledge and behaviors that teachers should understand in order to be most effective in the classroom. It is presented in a direct and often humorous style that is an enjoyable and inspiring read for anyone teaching adults—not just those in higher education.

### ***Learner-Centered Teaching: Five Key Changes to Practice***

By Maryellen Weimer

(Recommended by Dr. John Persyn, Faculty and Staff Development Division, Army University)

This is an excellent reference that highlights the value of learner-centered teaching to promote deeper learning for students. The author describes how to enhance

learning by encouraging learners to take greater ownership of their learning. Included is an overview of the theoretical basis for learner-centered teaching and a description of an approach to implement learner-centered policies and practices to improve the learning organization. Also included are techniques and handouts that can be used to implement these practices in the classroom.

### ***Inspired College Teaching: A Career-Long Resource for Professional Growth***

By Maryellen Weimer

(Recommended by Dr. John Persyn, Faculty and Staff Development Division, Army University)

In this book, Weimer emphasizes the importance of continued development throughout the educator's career. She highlights the individual responsibility of the educator to ensure that teaching does not become stagnant, lacking the enthusiasm and passion necessary to inspire students. She describes specific perspectives and considerations for the three phases of an educator's career: beliefs that prevent and promote growth for new faculty, maintaining instructional vitality through the midcareer challenge, and continuing the journey as senior faculty. This is an important read for any professional educator.

### ***10 Steps to Successful Facilitation***

By The American Society for Training and Development

(Recommended by Dr. John Persyn, Faculty and Staff Development Division, Army University)

This book is a useful resource for professionals in education and business whose success depends on effective group facilitation. It provides a variety of tools and techniques to help the facilitator remain neutral while establishing a collaborative climate that promotes active and productive engagement by participants. Also included are tools to help prepare for facilitating sessions and recommendations for evaluating and improving results.

### ***Group Dynamics and Team Interventions: Understanding and Improving Team Performance***

By Timothy Franz

(Recommended by Dr. John Persyn, Faculty and Staff Development Division, Army University)

This book is an invaluable tool in the classroom, on the playing field, or in the workplace. It is useful for both academics and practitioners since it helps provide a better understanding of the dynamics that inform team behavior and improve team functioning. Academics can use this book to help teach team concepts in their courses, and practitioners can use it as a guide for assessing teams within their organizations. In either case, this book offers application and intervention techniques that will help to optimize group and team functioning.

### ***Thinking, Fast and Slow***

By Daniel Kahneman

(Recommended by John J. Edwards, Faculty and Staff Development Division, Army University)

A Nobel Memorial Prize in Economic Sciences winner explains two systems that drive the way we think. He further examines the impact of cognitive biases regarding thinking fast and emotional versus slow and more logical. This book is essential reading to know how the two systems can shape our judgments and decisions both inside and outside the workspace.

### ***Tools of Titans: The Tactics, Routines, and Habits of Billionaires, Icons, and World-class Performers***

By Tim Ferriss

(Recommended by Pamela Hicks, Education Program Specialist, Naval Justice School)

In order to think adaptively, it is important for us to be curious and learn the ways of thinking that have led to success in many walks of life. Tim Ferriss has neatly packaged literally thousands of thought provoking ideas from over one hundred successful “Titans.” More than anything, this book compels us to think, “What are the curious questions we should ask of others and ourselves?”

### ***How to Measure Anything: Finding the Value of Intangibles in Business***

By D. W. Hubbard

(Recommended by Dr. Sae Schatz, Director of DOD Advanced Distributed Learning Initiative)

This easy-to-read book explains the purpose and value of measurement in practical terms, and it highlights the many (often low-cost) ways to measure or forecast seemingly “immeasurable” concepts such as organizational flexibility, technology risk, and return on investment. An excellent book for anyone skeptical (or working with those skeptical) of the utility or viability of evaluating phenomena such as human performance, decision-making skill, or other complex learning outcomes.

### ***Grit: The Power of Passion and Perseverance***

By Angela Duckworth

(Recommended by Dr. Kendy Vierling, Director of the Future Learning Group, United States Marine Corps Training and Education Command)

This entertaining yet scientifically substantive book examines key factors that influence human performance and resilience, specifically concentrating on the factor of focused perseverance described as “grit.” Dr. Duckworth examines neuroscience, educational psychology, sport psychology, and social psychology research to explain not only the key factors that contribute to grit and why grit is important for peak performance, but also how to cultivate grit in students of all ages and backgrounds.

Through a variety of examples, she explains how the organization's social environment, culture, and the type of feedback provided to student all influence grit. She includes humorous personal anecdotes and insightful interviews with individuals who have cultivated grit in themselves and others, such as National Football League Hall of Fame quarterback Steve Young and his father. This book is a "must read" for anyone who would like to better understand a key factor that impacts human motivation, behavior, and peak performance.

## Articles/Studies

"Building a F.A.S.T. Force: A Flexible Personnel System for a Modern Military, Recommendations from the Task Force on Defense Personnel," Bipartisan Policy Center website, March 2017, <https://bipartisanpolicy.org/library/building-a-fast-force/> (Recommended by Lt. Col. Kasey Stramblad, IT Service Provider A6/A5T, Air Education Training Command)

This article shares a theme with the Office of the Secretary of Defense's Force of the Future. It bangs the drum that the military's talent management system and processes need to improve, including how we train and educate our force.

"Corporate E-Learning," *Asia Pacific Journal of Management & Entrepreneurship Research* 4, no. 1 (January 2015), by R. Suhasini and T. Suganthalakshmi (Recommended by Sherry Hernandez, United States Air Force Air Education Training Command, A3T).

The authors address e-learning in a corporate environment, arguing for the necessity of e-learning within corporations based on several factors that are common to the military community as well. They make several important points:

- ◆ Technological changes have increased the complexity and velocity of the work environment.
- ◆ The lack of skilled labor is driving need for learning within organizations.
- ◆ Fierce competition in most industries is leading to increasing cost pressures.
- ◆ The globalization of business is resulting in manifold challenges.
- ◆ Social and demographic changes are directing education toward older target groups.
- ◆ Knowledgeable workers require greater flexibility in the workplace.
- ◆ Learning has become a continual process rather than a distinct event.

# Upcoming Conferences of Note

## **June 2–4: *The Teaching Professor Conference***

St. Louis, Missouri

<http://www.magnapubs.com/2017-teaching-professor-conference>

This conference theme this year is “Cutting-Edge Learning for Exceptional Educators.” Specific topic areas include recent pedagogical research, innovative classroom techniques, new technology tools, challenges of a global classroom, and best practices in teaching.

## **June 9–11: *Adult Education Research Conference***

University of Oklahoma, Norman, Oklahoma

<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 20–21: *ArmyU – Competency-Based Education Network Symposium***

Kansas City, Missouri

Army University and the Competency-Based Education Network (CBE-N) are teaming up to present a two-day symposium that will feature overviews of some of Army University’s work to develop learner profiles, establish cooperative degree programs, and map competencies to academic degrees and industry credentials. The symposium will also include updates from CBE-N associates and organizations on the latest advances in competency-based education and learning.

## **July 25–27: Distance Teaching & Learning Conference**

Madison, Wisconsin

<https://dtlconference.wisc.edu>

The 33rd annual Distance Teaching & Learning Conference is the place to learn from the best and engage with other distance education professionals. Whether you are new to the field or a seasoned expert, you will find many opportunities to network, gain new insights, and transform your day-to-day work.

## **July 31–August 2: iFest**

Alexandria, Virginia

<http://www.ndia.org/events/2017/7/31/adl-ifest>

The National Training and Simulation Association's Advanced Distributed Learning iFest provides unique opportunities for military, government, industry, and academia professionals to share the latest in distributed learning innovations. This year's theme emphasizes learning analytics with associated topics such as technological interoperability (e.g., xAPI), implementation, privacy, and security. iFest will also include an optional "PlugFest" for xAPI and the burgeoning Total Learning Architecture on 2 August.

## **August 7-10: Lilly National Conference**

Asheville, North Carolina

<https://www.lillyconferences-nc.com>

This conference is one of several that are part of the Lilly Conference Series on Evidence-Based Teaching and Learning.

## **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."

## Service Notes

*The Army Learning Concept for Training & Education, 2020-2040* (ALC-TE), <http://www.tradoc.army.mil/tpubs/pams/TP525-8-2.pdf>, was approved and published on 13 April 2017. This seminal Army learning concept document updates *ALC for 2015* and provides the vision for the Army learning enterprise for the foreseeable future. *ALC-TE* calls for the Army to develop a “persistent, blended, adaptable, tailorable, mobile, and accessible learning ecosystem” to optimize learning outcomes.

The Air Force **Instructor/Developer of Online Learning** (IDOL) Course builds organic instructor/developer capabilities by training principles, theories, and teaching strategies for delivering collegiate-level curriculum in an online or blended learning environment. For more information, please contact the 81st Training Group, Keesler Faculty Development Flight at [81trss.tsf3@us.af.mil](mailto:81trss.tsf3@us.af.mil).

Air Force **Enterprise Blended Learning Service** (EBLS) is live and moving toward full operating capability. Air Education Training Command (AETC) partnered with OPM USALearning to add AF services to an IDIQ contract vehicle; asynchronous and synchronous capability. In the future, EBLS will be part of the Air Force’s Advanced Distributed Learning Service (ADLS), which will offer learning capabilities not tied to a single LMS (currently using Blackboard), connected by the Total Learning Architecture API interface. For more information, please contact Air Education and Training Command, Information Technology Service Provider, Business Relationship Managers at [AETC.ITSP.BRM@us.af.mil](mailto:AETC.ITSP.BRM@us.af.mil).

The Marine Corps **Future Learning Group** was created by the United States Marine Corps Training and Education Command (TECOM) in January 2017 as part of the Commanding General, TECOM’s Special Staff. The mission of the Future Learning Group is to seek and assess innovative methods and technologies in order to enhance learning. For additional information, visit <http://www.tecom.marines.mil>.

# Highlighted Learning Organizations

## Advanced Distributed Learning (ADL) Initiative

<https://www.adlnet.gov/about>

ADL's mission is to modernize technology-based, network-enabled training and education across the Total Force, Federal Government, and Coalition Partners. ADL stewards associated distributed learning policy and coordinates across stakeholders to increase distributed learning interoperability, effectiveness, and efficiency.

## Federal Government Distance Learning Association (FGDLA)

<http://www.fgdla.us/>

The Federal Government Distance Learning Association (FGDLA) is a nonprofit, professional association formed to promote the development and application of distance learning in the federal government. The FGDLA actively fosters collaboration and understanding among those involved in leveraging technology and instructional media, encourages the application of all forms of distance learning media, and embraces innovative methods in integrating instructional technologies to meet the training and education needs of the federal government.

## Official Magazine - Government ELearning

<http://gelmezine.epubxp.com/t/12097-government-elearning-magazine>

*Government Elearning! Magazine* is the exclusive publication addressing the unique learning and workplace technology needs of the public sector. Each issue showcases agency best practices, new technologies, processes at work, and lessons learned from the country's largest employers. *Government Elearning! Magazine* is available as a digital magazine (e-zine) accessible on tablets and smartphones. It welcomes readers and partners to contribute case studies, how-to features, product news, and announcements.

# 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 October 2017 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, evi-

dent through the citation of sources. Scholarship must conform to commonly accepted research standards such as described in Kate L. Turabian, *A Manual for Writers of Research Papers, Theses, and Dissertations*, 8th 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. Short book reviews of published relevant works are also encouraged.

Manuscripts should be submitted to [us-army.leavenworth.tradoc.mbx.army-press@mail.mil](mailto:us-army.leavenworth.tradoc.mbx.army-press@mail.mil) by June 30, 2017. For detailed author submission guidelines, see below. For additional information call 913-684-9331 or send an email.

## 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 *Chicago Manual of Style*, 16th edition, chapter 14, but no bibliography is needed. Because of complications with layout software, papers are not to contain any automatic endnotes; all coded endnotes must be replaced 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. Do not submit manuscripts that are being considered for publication elsewhere.

A manuscript that does not conform to the guidelines above will not be considered for publication in the *Journal of Military Learning (JML)*.

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.

Authors are encouraged to supply relevant artwork (maps, charts, line drawings, and photographs) not protected by copyright with their essays but to limit them to those needed to demonstrate their major points. Illustrations may be submitted in the following formats: PDF, JPEG, or TIFF. The author is responsible for obtaining permission to publish any copyrighted material.

As a U.S. government publication, the *JML* does not have copyright protection; articles become public domain. Manuscripts published in the *JML* could be published later in other Army publications.