

An Air University Approach to the Future of Professional Military Education

Background

The context of global security is shifting rapidly. The competitive world described by the 2018 National Defense Strategy differs fundamentally from the unipolar moment in which most of today's military leaders honed their craft. Air University (AU), together with its partners in joint Professional Military Education (PME), must stay ahead of these shifting realities as we prepare tomorrow's warriors to think, lead, compete, and win our nation's wars. This paper outlines AU's current thinking and approach to the content, methodology, and partnerships that will propel the future of joint PME.

Relevant Content of PME Programs

Given the inherent uncertainties of "educating for the unknown," the optimal focus of PME programs is never a settled question. Curricula function as hypotheses that must be revisited to find a smart blend of both enduring and contingent factors that reflect the emerging security environment. Enduring factors focus on the long-run elements that fundamentally undergird the profession of arms and the science of learning. In joint PME, both today and in the future, these should focus on relevant topics that will posture the widest swath of the joint force to succeed in the widest array of security contexts. Enduring topics include, among others, these six essentials:

1. *Absorption*: the ability to learn new things and apply them in new contexts.
2. *Adaptation*: the ability to shift patterns of thought and action to co-evolve successfully with one's environment.
3. *Decision-Making*: the ability to make principled and prudential judgments in a given context that allow the individual and group to succeed.
4. *Leadership*: the art of harmonizing diverse human effort to accomplish a noble purpose.
5. *Historical Cause-and-Effect*: acquiring a rich body of historical evidence that reveals the complex interactions between individuals, groups, states, and power.
6. *Integrity and Ethics*: for those entrusted with the weapons of war and the lethal mandate of the nation, ends do not justify means. We must consistently reinforce a moral foundation of sound ethics and uncompromising integrity.

These enduring elements should be accompanied by a second set of focus areas: contingent elements that reflect the *specific* factors shaping tomorrow's emerging security challenges. To prepare tomorrow's military for the twenty-first century challenges it will likely face, PME programs should give attention to factors such as:

1. *Great Power Competition*: how do states tend to act as they compete for influence and power on the world stage? Since the end of the Cold War, the United States had so much uncontested power it could afford to live without the hard choices of true strategy. With peer competitors now eroding our military advantage, strategy is back.
2. *Mission Command*: a competitive battlespace will require a joint force that has the habits of mind and practice to act boldly upon commander's intent. Low-resolution communication environments will require a looser coupling between command and control than today's joint force expects.
3. *Rapid Technological Change*: while the nature of war is unchanging, its character—as expressed through its means—is evolving rapidly. Students in PME programs

should have an increasing technical appreciation for the raw materials that are combining and recombining faster than ever, creating new technological opportunities for first-mover advantage and slow-mover defeat. This emphasis on technology, however, must emphasize that technology is never an end to itself but a means toward a strategic purpose.

In pursuit of these aspirations, Air University's many initiatives include the following:

- The Barnes Center for Enlisted Education is overhauling all four levels of its Enlisted PME continuum, giving far greater emphasis to joint warfighting, profession of arms, acting on commander's intent, and critical thinking.
- Officer PME programs have made necessary changes to curricula to reflect the competitive environment outlined in the NDS. The Air Command and Staff College, for example, is in its first year of delivering new focused concentrations in both space and nuclear deterrence studies to a select cohort of joint students.
- In partnership with National Defense University, AU now hosts the China Aerospace Studies Institute to advance understanding of China's aerospace forces and doctrine.
- The Blue Horizons program, which includes both intermediate and senior-level officers, is evolving into its fourth year as a CSAF-sponsored think tank that builds and tests prototypes at the frontier of strategy and technology.
- The Leadership Institute at AU was launched in 2017 to provide integrated leadership education across all of AU's many officer and enlisted academic programs.
- A new 10-day Leader Development Course, targeted at future squadron commanders, is undergoing beta testing in preparation for course launch in January 2019. Among its several objectives, this course will prepare future commanders to lead effective teams with integrity, to include in denied environments through decentralized mission command.

Active and Experiential Methodology

These enduring, translatable, and reproducible skills that PME students need to acquire are *experiential* in nature. These skills cannot be acquired solely from passive reading, static lectures, or writing papers. The future of PME must take an active, experiential, practice-based approach to imparting these critical skills. Our methodologies must grow and evolve, in keeping with the new research on cognitive science and learning. These new discoveries in the science of learning distill to a core insight: "The one who does the work does the learning."¹ Students must actively work their brains in multi-sensory, interleaved, and recall-intensive ways to form and establish the neural pathways that undergird true learning.

The recent reinvigoration of DOD's wargaming enterprise reflects this critical imperative for active cognitive engagement. Wargames are valuable experiential exercises that should be adopted more broadly within PME—but in a smaller and more tailored form-factor than today's massive and regimented games. Most of today's DOD wargames require months or even years of extensive planning, levying a high tax of time, manpower, and money. These costs keep conventional DOD wargames from being realistic or attractive components within time-limited and resource-constrained PME programs.

¹ Doyle, T. (2008). *Helping students learn in a learner-centered environment: A guide to facilitating learning in higher education*. Sterling, VA: Stylus.

The future of PME should find ways to radically reduce the scale and cost of wargames to promote micro-learning on discrete subjects. The video game industry might point the way, particularly as virtual, augmented, and mixed-reality (VR, AR, XR) technologies enter the mainstream. At their essence, games are creative, interactive, and goal-based platforms for decision-making—as such, they make particularly compelling learning platforms. The military wargaming enterprise is ripe for disruption, and PME educators should lead the way in pioneering new methods of game-based learning for the joint force.

In pursuit of these ideas, Air University's efforts include the following:

- AU has partnered with the City of Montgomery to create MGMWerx, a not-for-profit entity run by DefenseWerx, to bring together industry, academia, and government entities to solve civic and military problems. MGMWerx, much like its sister organization SOFWERX in Tampa, FL, will act as a technology incubator and accelerator, moving promising ideas from paper to prototype.
- The LeMay Center Wargaming Institute (LCWI) recently completed a major renovation to its facility, upgrading its security level to a building-wide Secure Compartmented Information Facility (SCIF). The LCWI is expanding its wargaming portfolio in scale and scope, hosting several Title 10 wargames as well as smaller educational games.
- University faculty have initiated a task force focused on educational applications of new VR and AR technology. Currently, several faculty members are teaching a joint PME elective on innovation that includes residential students at Maxwell AFB together with students in the Online Master's Program (OLMP) who participate through VR in real-time. The virtual classroom of the future is being tested today.
- The Blue Horizons program is modeling a PME program that demands actual prototypes for student deliverables rather than academic papers. This radically experiential curriculum has generated deep student learning and valuable capability for the Air Force.

Scaling Excellence through Distance Learning and Partnerships

Our face-to-face learning environments, housed in brick-and-mortar institutions, will endure as the gold-standard of empathetic human learning. Joint acculturation, building social networks, and collaborative learning all thrive in residential programs. But our residential programs have inherent limitations of scale—there is not enough time or space to send the whole joint force to every valuable academic program. Distance learning is the lever that achieves scale. We can and must provide valuable, engaging, friction-less learning environments that help every member of the joint force learn what they need to know, when they need to know it, on any device at any time.

The technical infrastructure to achieve that vision, however, is woefully insufficient. Our hardware, software, and network limitations conspire to create ineffective and frustrating learning environments for the joint force. Military members, already scrambling to find time out of their busy lives, encounter a tangled web of technical hurdles as they try to access the required courseware.

The future of PME must include a distance-learning enterprise that is purposefully learner-centric. The user experience must be engaging, friction-less, and available anytime and anywhere. To build the infrastructure that makes a seamless user experience possible, the DOD should work smarter not harder. Online education is exploding globally, and top-tier universities have cracked the code on delivering compelling distance education at scale. The joint force should consider outsourcing the hosting

and delivery interface of its online learning content to a consortium of colleges and universities who are willing to partner with the DOD.

The future of PME will be strengthened as we find new ways to partner and collaborate with civilian institutions, whose strengths would complement our own. A “Consortium for National Security Education” could bring together military and civilian higher education professionals to share ideas, content, methods, credit, degrees, certificates, badges, faculty, and students. Not only will these sharing arrangements likely improve the quality within each institution, they will build empathy across the civil-military divide that strengthens the civic health of the nation.

In pursuit of these ideas, Air University is currently working on the following initiatives:

- The eSchool of Graduate PME has begun discussions with innovative civilian universities to explore the technical and legal possibilities of a rich educational partnership.
- Air University and the US Air Force Academy are finalizing a formal MOU between the two institutions to strengthen collaboration and partnership opportunities. For example, USAFA’s CyberWorx program, AU’s Cyber College, and AFIT’s Cyber Technical Center of Excellence all have complementary areas of expertise in cyber education that are ripe for further collaboration.
- The university is beginning to expand its use of Intergovernmental Personnel Act (IPA) faculty, bringing high quality educators from civilian institutions to AU for a limited period of time (1-2 years).

Conclusion

The joint force faces complex challenges in the competitive world of the twenty-first century. As PME professionals, we must evolve our methods, practices, and partnerships to keep the force perpetually ready to learn, adapt, make decisions, and lead with integrity. The ideas outlined above, combined with the insights provided by the other services and PME institutions, will prove useful in ensuring that the joint force of tomorrow is ready to compete and prevail.