

PME and Online Education in the Air Force

Raising the Game

By KATHLEEN A. MAHONEY-NORRIS and JOHN ACKERMAN

The U.S. House of Representative's 2010 assessment of professional military education (PME)—*Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel*—was clearly intended to present a comprehensive evaluation of education for U.S. military officers, and in many ways, the report accomplishes that goal admirably.¹ However, *Another Crossroads* does not assess the area of distance learning in much depth or detail. In fact, the 238-page report contains only nine brief comments or references to distance learning. This lack of detailed consideration of nonresident education was certainly understandable in 1989 when the U.S. House Armed Services Committee issued its first critical assessment of PME in the well-known Skelton Report.² After all, that was still the era of the traditional correspondence or “box of books” distance learning method for those who did not attend a PME school in residence.

But the lack of sustained consideration of distance education programs is more problematic today for at least two major reasons. First, a large percentage of U.S. field grade officers receive at least some, if not all, of their required intermediate- and senior-level joint and Service-specific professional military education via flexible, adaptable distance education methods. Equally important, many of the online learning programs are increasingly high quality, employing interactive

technologies and fostering critical thinking, research, and writing skills.

Both of these factors are particularly relevant when considering PME for U.S. Air Force officers, especially at the intermediate level. While the Air Command and Staff College (ACSC) at Maxwell Air Force Base typically educates some 500 majors and equivalent ranks in residence each academic year—awarding them joint PME Phase I (JPME I) credit, their Air Force intermediate developmental education, and a Master's degree—that number pales beside the 3,869 graduates who received their JPME Phase I and intermediate developmental education through ACSC's self-paced distance learning (“correspondence”) program in 2011.³ In fact, at any given point, some 10,000 students are enrolled in the ACSC non-Master's distance education program to attain their required PME. Additionally, for academic year 2012, ACSC's relatively new online Master's degree program (implemented in 2007) awarded JPME I credit and the same Master's degree as the residence program to 488 graduates. The online program now typically enrolls from 1,000 to 1,200 students in each of the six 8-week terms held each year. Comparing these distance education student numbers to resident program student numbers, it is evident that no more than 20 percent of Air Force majors complete their PME via residence methods.

Thus, while granting that the House Subcommittee was correct in assuming in its

2010 report that in-residence education for officers would provide the optimal education, clearly this opportunity cannot realistically be made available to the majority of (Air Force) officers. Limitations such as repetitive operational deployments, the not-inconsiderable costs of educating students in residence (especially in an austere budgetary era), and other resource constraints—such as deficiencies in institutional infrastructure and numbers of faculty—all tend to militate against substantially increasing the numbers of in-residence students.

Some observers would not be as concerned about this situation, perhaps partly because of the perspective that it is legitimate to focus educational efforts on “the best and brightest” officers, who are usually competitively selected to attend PME in residence. Yet it is increasingly difficult to deny that all officers need to be well educated in today's globalized age of complex and continuous military operations—including those in the Reserve Components, who unfortunately are least likely to attend PME in residence. The context of irregular/asymmetric warfare and continuing stabilization and reconstruction missions that require diplomatic, political, economic, and specific military skills means that even the most junior officers are faced with time-sensitive decisions that may have important consequences. In the information age, the misstep of just one military member or small unit can have major political and strategic consequences, as incidents from Abu Ghraib

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 2012	2. REPORT TYPE	3. DATES COVERED 00-00-2012 to 00-00-2012			
4. TITLE AND SUBTITLE PME and Online Education in the Air Force: Raising the Game		5a. CONTRACT NUMBER			
		5b. GRANT NUMBER			
		5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)		5d. PROJECT NUMBER			
		5e. TASK NUMBER			
		5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Defense University, Joint Force Quarterly, 260 Fifth Avenue (Building 64, Room 2504) Fort Lesley J. McNair, Washington, DC, 20319		8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)			
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Air Force officer en route home from Iraq receives Master's degree at ACSC



to accidental civilian deaths during military operations in Afghanistan demonstrate.

Furthermore, it is vital that officers be culturally sensitive and attuned to work effectively together within an interagency and coalition environment. And with more and more U.S. military members involved in security cooperation activities, the necessity for rigorous and substantive education of U.S. officers so they can better serve as effective role models and mentors in the critical task of educating and training other militaries is even more apparent, as highlighted by *Another Crossroads*. Congress could scarcely have been more explicit in underscoring the importance of quality education today for producing competent officers and leaders:

*The primary purpose of PME is to develop military officers, throughout their careers, for the rigorous intellectual demands of complex contingencies and major conflicts. The United States cannot afford to be complacent when it comes to producing leaders capable of meeting significant challenges, whether at the tactical, operational, or strategic levels of warfare. Military officers must think critically, communicate well, conduct themselves with integrity, and lead others to perform strenuous tasks in difficult and often dangerous situations. As a matter of national security, the country's continuing investment in the PME system must be wisely made.*⁴

The authors contend that ensuring a quality educational opportunity for a much

larger percentage of field grade officers via challenging, quality online learning programs would be a wise investment for U.S. national security—one that may also prove cost-effective in an increasingly constrained budgetary environment. To support that contention, this article first provides a short assessment of the increased growth and quality of distance education and online learning programs in the United States. The bulk of the article then details the ongoing Air Force experience with distance education and online learning, making comparisons between the online Master's degree program and ACSC resident education as applicable. Finally, some conclusions and projections are offered based upon the Air Force experience to date.

Expansion and Quality of Online Learning

The apparent congressional lack of focus on distance education in PME is puzzling in light of the rapidly accelerating growth of online education at military and especially civilian institutions—and this growth trend is shared by Ivy League universities and community colleges alike. A recent assessment of online education in the United States by the respected Sloan Consortium noted the following data points which underscore the substantial growth:

- Over 6.1 million students were taking at least one online course during the fall 2010 term—an increase of 560,000 students over the number reported the previous year.

- The 10 percent growth rate for online enrollments far exceeds the less than 1 percent growth of the overall higher education student population.

- Thirty-one percent of higher education students now take at least one course online.⁵

Of course, the quality of online education is crucially important, and in that regard the Sloan report has recorded increasingly favorable opinions in surveys taken since 2003 of top educators who compared learning outcomes for online versus resident (face-to-face) education. The Department of Education's own extensive meta-analysis and review of numerous empirical studies comparing online, resident, and blended learning approaches concluded in 2010:

*In recent experimental and quasi-experimental studies contrasting blends of online and face-to-face instruction with conventional face-to-face classes, blended instruction has been more effective, providing a rationale for the effort required to design and implement blended approaches. When used by itself, online learning appears to be as effective as conventional classroom instruction, but not more so.*⁶

Whether used in conjunction with residence teaching methods or on its own, online learning is poised to make valuable contributions to expanding and deepening military educational efforts.

ACSC: Residence and Online Education Programs

Originally called the Air Command Staff School, the Air Command and Staff College began its residence program for majors in 1946 and has produced over 38,000 graduates, so it has some 60 years of educational experience to draw upon compared to the relatively new online Master's program described below. Nevertheless, the basic components of ACSC's residence and online programs mirror one another; it is commonly stated that ACSC actually has one program with two delivery methods—residence and online. Both the residence and online programs have been certified by the Chairman of the Joint Chiefs of Staff to award JPME I credit (and by the Air Force to fulfill its intermediate-level PME requirements), and both programs are accredited by the Southern Association of Colleges and Schools to award a Master's of Military Operational Art and

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Science degree. Since ACSC is an intermediate-level PME school, the curriculum is centered on the operational level of war and consists of 11 courses (33 credit hours) with the same learning outcomes for both programs in areas ranging from security and culture studies to strategy to leadership to joint warfighting and research. The in-residence degree program takes approximately 10 months of full-time study to complete, and students go through a structured program. They do have some flexibility when it comes to the research/electives program throughout the year, and they may participate in several other special educational programs.

In 2006, Air Force leadership directed ACSC to develop an online Master's degree equivalent to the resident program, underscoring the increasing need for a flexible approach. This flexibility was required in light of continuing high operations tempo and multiple deployments for Air Force members, balanced against joint/Service PME requirements, and growing expectations that officers should earn an advanced degree. In the summer of 2007, majors who had not yet completed JPME I were offered the option of receiving their JPME, their Air Force PME, and an accredited Master's degree through the Online Master's Degree program (OLMP), administered via a Web-based learning management system. The program expanded in 2010 when senior Air Force captains who had completed their initial PME through Squadron Officer School were offered the option to receive their Master's degree online, too, through a modified curriculum track within the OLMP. Then, in 2011, graduates of the Fighter Weapons School were provided the opportunity to receive a Master's degree through a unique blended combination of courses taken online (via the OLMP) and in-residence coursework at the Fighter Weapons School at Nellis Air Force Base, Nevada. As captains obviously do not receive JPME I credit along with their Master's degree, the remainder of this article focuses on majors who complete JPME in the ACSC program.

In contrast to the 10-month residence program, online students would normally expect to complete their PME and degree on a part-time basis in 2 years (although they can take up to 5 years). Flexibility in this program is a priority, as students decide for the most part in what order they wish to take their 11 courses, what number of courses they wish to



ACSC OLMP student participates in National Security Studies Course Online Discussion Group

ACSC

take during each 8-week term (although no more than two courses per term is normally considered appropriate), and whether they wish to take a term or two off from pursuing courses. This is possible because all courses are offered during every one of the six yearly terms, and it is student demand that drives the number of sections scheduled for each course. Another advantage of this flexible delivery method is that students can choose courses based upon upcoming assignments. For example, a student selected for command may decide to take the Leadership and Command course just prior to taking command, or a student being deployed to work with other Services may take the joint courses. However, the online program is less flexible than the residence program in the sense that students in the online program do not have a choice of electives—all of them must complete the Research I and II courses. On the other hand, within some limits, they can pursue a research topic of their own choice.

The OLMP is constantly evolving and adapting; it can quickly respond to increased enrollments in the overall program and/or demands for more sections of particular courses. It is extremely flexible in terms of balancing individual professional and family concerns. Many more officers now have the opportunity to complete their intermediate-level PME requirements and a Master's degree tailored to meet the demands of educating members of the Department of Defense in relevant national security, regional-cultural, strategy, leadership, and

joint and coalition warfare topics. As a representative comment from one graduate noted in 2011 (all students are invited to complete an anonymous exit survey upon graduation from the OLMP):

The ACSC OLMP courses immediately benefited me while I was deployed in a joint billet. As I was taking many of the joint warfare courses during my deployment, I was able to immediately utilize the information I gained from the classes in my job. . . . Overall, the courses in leadership, joint operations and planning, and cultural studies have made me a much better officer and leader in my career field.

However, even conceding that the OLMP has these benefits, such advantages do not demonstrate that the online program would meet the type of rigorous, demanding quality education required by Congress for PME colleges. To assess the quality of ACSC online education, this article next addresses two of the four areas identified by the original Skelton Report as crucial to quality PME: faculty and pedagogy.⁷

Assessing Quality

The Skelton Panel in 1989 and Congressional Subcommittee in 2010 were particularly concerned with ensuring the quality of both PME faculty and pedagogy. In their view, one of the hallmarks of an effective faculty lay in subject matter expertise and scholarly and critical thinking ability as reflected in terminal degrees. *Another Crossroads* singled

out the move to accreditation of graduate degree programs by almost all intermediate- and senior-level PME colleges as one specific factor that had “helped the schools attract higher-quality faculty members thereby improving the PME curricula and quality of teaching.”⁸ In fact, the enhancement of qualifications among faculty at ACSC from 1989 to 2012 is striking. While in 1989 there were no civilian faculty members, by academic year 2012 the teaching faculty consisted of 38 civilian and 91 military members.⁹ All military faculty members have completed at least intermediate-level PME, as have some civilians (often retired military or with some military background), although not necessarily all have done so in residence. Even more telling is the fact that 39 faculty members have doctoral degrees, 26 of whom are civilian faculty and 13 military. Almost all Ph.D.s of the ACSC faculty are in curriculum-relevant areas including political science, international relations, military history, public policy, leadership, and education.

The assumption is that the increased number of civilians improves the faculty’s diversity and depth as does the expansion of terminal degrees among both civilian and military faculty. Presumably these trends

faculty members/course directors commonly teach online courses at least once a year and teach the in-residence versions of the courses (and often an elective) each year. Naturally, they cannot also teach the 8 to 11 online sections of the courses (each with 13–20 students depending on student demand) that may be scheduled per term. Thus, the OLMP depends on credentialed adjunct faculty who are competitively chosen and centrally managed through a contract administrator (a Ph.D. with many years of relevant professional and online educational experience) in residence at ACSC.

Examining the composition of the geographically dispersed adjunct faculty who teach online, out of a pool of some 90 civilian and military members, 38 hold Ph.D.s or equivalent terminal degrees, with several faculty members in the process of completing their doctoral studies. The number of times faculty members teach varies according to their own professional situations and student demand for courses each term. A typical term would feature 52 online faculty teaching with the following characteristics: 22 with Ph.D.s; 28 with prior resident PME teaching experience; 10 sister-Service members; 18 current/former joint officer qualified; 30

automatically or easily mastered by those who teach in brick-and-mortar classrooms.

Based on the type of qualifications and faculty management processes summarized above, it is possible to argue that the overall quality of the ACSC online faculty is comparable to that of the ACSC in-residence faculty. In fact, as the authors can attest, student course evaluations and program exit surveys consistently praise the outstanding caliber and professionalism of the experienced, diverse instructors they encounter online. This particular point has been underscored by focus group discussions held in the last 2 academic years with students in the resident program who had previously completed the online Master’s degree or had at least taken more than one of the online courses prior to attending ACSC in residence. Student comments from these discussions were nearly unanimous in comparing online faculty very favorably to resident faculty, emphasizing in particular the subject matter expertise and strong teaching skills of their online instructors.

While the above discussion provides some perspective on the quality of online faculty, it is equally important to assess pedagogy. In this regard, Congress’s 2010 report noted approvingly that “PME institutions have generally implemented the Skelton Panel recommendations on improving teaching practices and have adopted more demanding standards. Student-centered seminar discussion groups are the core means of instruction at the in-residence schools.”¹¹ At this point, online education as offered via the ACSC OLMP cannot replicate the seminar-based, active learning (Socratic dialectic) of in-residence education. Nonetheless, student-centered and instructor-facilitated discussion groups are the core means of instruction in the OLMP (along with essay and paper assignments and some group exercises).

In the typical course, students are assigned to one of several seminar discussion groups, and for each week’s lesson, they are required to address one or two questions related to the lesson readings and objectives, posting their written responses online. Students must additionally respond to at least two other students’ postings each week. In this way, an asynchronous running “discussion thread” is carried throughout the week (the online program was designed to be asynchronous to accommodate military officers assigned and deployed in many loca-

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have led to better education, which was an explicit presumption contained in the congressional reports on PME. The fact that both the residence and online programs have met the criteria for graduate education standards is also evident in ACSC accreditation by the Southern Association of Colleges and Schools, while Joint Staff evaluations continue to certify that intermediate-level PME requirements are being met.¹⁰

When specifically assessing the credentials and quality of ACSC online faculty, it would be extremely misleading to survey only the numbers of full-time faculty assigned to ACSC’s Distance Learning Directorate (DL). In fact, most of the 24 full-time DLC faculty—16 military (3 with Ph.D.s) and 8 civilian (5 with Ph.D.s)—are categorized as “course directors” who are responsible for the development and oversight of the online curriculum, in addition to monitoring the quality of the assigned sections of their particular course during each term. These

with command experience; and 21 of 0-6 rank (Active duty and retired), plus 1 general officer. The fact that so many individuals with varied military backgrounds are drawn to teaching military officers is probably not surprising, but it certainly adds to the value and relevance of the program.

An online faculty member’s teaching performance is continuously assessed each and every term—weekly if not daily—by the contract administrator, course directors, and other staff at ACSC, along with the students. The very nature of the open online environment means that each online faculty member receives many more evaluations than in-residence faculty. It is quite easy to remove unsatisfactory teachers in this competitive system; thus, the adjunct faculty roster is an impressive list of seasoned senior teachers with appropriate subject matter, scholarly, and professional expertise. Adjunct faculty members have also proven themselves adept at teaching online, a methodology that is not

tions and time zones). Many instructors find student responses to be quite thoughtful, well researched, and informed when they have time to reflect upon a response. Faculty members also note that, unlike face-to-face education, the “discussion” online includes all students and tends not to be dominated by one student or group of several students. In fact, individual course evaluations and exit surveys completed by students as they graduate reveal almost universally favorable comments about the high-quality interaction and learning that take place through these online discussions. Significantly, by a large majority, the ACSC students who took part in the focus groups noted above rated the quality of academic interaction, discussion, and learning between the residence and online programs as comparable (although networking and getting to know other students on a personal level were recognized as clearly superior in the residence program).

Another important pedagogical area involves nurturing critical thinking, research, and writing skills, which are considered essential for the professional development of officers. In that regard, students in the online Master’s program usually write considerably more than in the residence program because all of their discussion postings (and assignments) are written, not presented verbally as in a residence seminar room. Exit surveys

as one of the highlights of the program in terms of its lasting value for improving their research, writing, and critical thinking skills. One data point demonstrating the quality of research conducted in the online program is that the online students’ research papers compete equally with resident student papers for yearly awards sponsored by external organizations such as the Defense Intelligence Agency and the Armed Forces Communications and Electronics Association. For both academic years 2011 and 2012, online students won 8 out of 18 of these externally sponsored research awards.

Regardless of the many favorable aspects that may accrue to an online program, clearly a brick-and-mortar program cannot be fully replicated online, and student experiences will differ in a residence versus a distance education program. To state the obvious, students in a residence program such as at ACSC have the leisure to study and reflect on the curriculum on a full-time basis, all while interacting professionally and socially with fellow officers from various Services and countries. The OLMP as currently structured does not offer that opportunity (although the presence of sister Service and joint qualified officers on the online faculty offers some compensation). Additionally, the OLMP is pursued on a part-time basis (each course requiring 10–15 hours of work per week) as students juggle work and

online education ever more flexible, responsive, and interactive (and presumably cheaper, which seems likely to become an increasingly important factor). In fact, ACSC’s online Master’s program is experimenting with incorporating new social media tools into some of its courseware, from blogs to personal journals to group Wikis, to assess how these new methods may enhance learning.

But it is equally worth considering whether, and how, online tools may help improve in-residence teaching via what is commonly termed “blended learning.” As one example, for the past 3 academic years the authors have experimented with teaching the first truly blended learning, year-long research elective course at ACSC. Students in the unique Future Trends elective begin their consideration of trends that may affect national security and methodological approaches through face-to-face seminar discussions in the fall semester, while also building their initial research proposal via an online seminar discussion group with their fellow students. In the spring semester, they focus on conducting necessary research to support their papers, while regularly posting sections of their papers online in a discussion group. Thus, as students build first their proposals and then their papers, they post these products on a regular weekly/biweekly schedule, receiving constant detailed feedback online from fellow students and faculty on each segment of their proposals/papers.

All faculty observations and student evaluations of the blended learning approach in this ACSC course have been overwhelmingly positive in terms of assessing the amount of learning and collaboration that occurs. As one student put it in the anonymous Future Trends course evaluation for academic year 2012: “An outstanding elective that fosters critical thinking and takes advantage of peer critiques/support through the blended course environment (classroom, blackboard [online learning management system], and self-paced research). Gives students unprecedented leeway in selecting a research topic that is relevant.” This mixed approach has potentially enormous benefits as studies measuring learning outcomes in higher education continue to conclude that a blend of face-to-face and online teaching methods seems to be the most effective instructional method of all.¹²

While to date these online-associated efforts are quite promising, of greatest significance in terms of the number of officers

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often single out the extensive writing required as improving their research, communication, and thinking skills. One student who had first taken ACSC online courses and then attended in residence during academic year 2012 concluded in the focus group discussions, “I can now say that the OLMP challenged me in a much more cerebral way. All correspondence relied upon the written word that you were forced to support with evidence.”

Furthermore, all OLMP students research and write a substantive paper through a two-course sequence as a degree requirement, whereas residence students have several writing options available other than a long research paper to fulfill their requirements. Again, in exit surveys, online students often cite completing their research project

personal commitments. These two factors constitute probably the greatest weaknesses of the online program, but the alternative for the majority of midgrade Air Force officers is to earn what is often viewed as a “square-filler” advanced degree of perhaps dubious quality, primarily with only civilian classmates, and to take required PME via traditional correspondence methods. Fortunately, even this latter, much criticized method of earning PME is being challenged by planned upgrades at Air Command and Staff College as described in the next section.

Transforming PME through Online Learning

Looking to the future, it seems undeniable that technological advances will make

affected is the concerted effort under way to move the 10,000 students enrolled at any one time in ACSC's non-Master's PME correspondence methods to the next generation of a fully online learning environment. (Notably, this effort resonates beyond the Air Force as 17 percent of enrollees are U.S. Navy officers; other Services and civilians are also well represented.) By the fall of 2012, all seven ACSC courses required to fulfill JPME I certification and Air Force intermediate-level PME objectives will be Web-based and accessed through the Blackboard learning management system—the same system used in the OLMP.

Within the self-paced portions of each course, students will first complete a variety of computer-based interactive learning activities—lesson checks, critical thinking activities, and exercises. In one unique component, students will deepen their understanding of national security themes by completing an individualized, self-paced National Security Decision Making simulation where students act as junior staff members assigned to the National Security Council staff. (This simulation has already been successfully beta-tested, generating extremely positive student feedback.) Additionally, at three different points within the new program, students will be placed into cohort groups to complete 2 to 3 week seminars that feature peer-to-peer interaction and instructor facilitation, concluding the program with a Joint Warfare phase. This structure, with its enhanced technology, will help to address the student demands consistently revealed in PME correspondence program surveys for greater interaction with fellow students and faculty and a more stimulating learning experience. It seems safe to say that the new program will foster enhanced levels of learning and, ultimately, critical thinking.

As noted above, the congressional 2010 assessment of PME did not consider distance education to any great extent. Yet online learning has moved far beyond those traditional distance learning correspondence programs that were not interactive, let alone intellectually rigorous. The capability now exists to provide many more officers with carefully designed, intellectually challenging programs that take advantage of highly interactive online technologies. The assessment provided here of ACSC's online Master's program presumably provides some evidence for the contention that online programs can provide high-quality graduate and required

military education for officers, although clearly more systematic empirical studies are required to substantiate this conclusion. In any case, the ongoing transformation of ACSC's non-Master's program should prove to be immensely valuable for enhancing JPME I and Air Force intermediate developmental education for exponentially greater numbers of officers and civilian employees of the Department of Defense.

If, as has been argued here, all officers (indeed, one could argue all military members and most civilian members of the Department of Defense) need professional military educational programs that help them to better understand and support national security needs in today's complex threat environment, then alternatives beyond the constraints of residence programs need to be seriously examined. Furthermore, online learning can also provide the opportunity for lifelong learning and study so necessary for nurturing critical thinkers and strategists. Indeed, as pointed out by John Nagl and Brian Burton in their insightful comprehensive study *Revitalizing America's Military Officer Corps*, "distance learning and self-directed online education can provide important and flexible education program [sic] for officers. Although the face-to-face interaction available at 'brick-and-mortar' schools is preferable, current technology makes the establishment of a continuous PME program more practical than ever."¹³ **JFQ**

NOTES

¹ U.S. Congress, House of Representatives, Committee on Armed Services, Subcommittee on Oversight and Investigations, *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel* (Washington, DC: U.S. Government Printing Office, April 2010).

² U.S. Congress, House of Representatives, Committee on Armed Services, *Report of the Panel on Military Education of the One Hundredth Congress*, 101st Cong., 1st sess. (Washington, DC: U.S. Government Printing Office, 1989). The report is often referred to as the Skelton Report as Congressman Ike Skelton (D-MO) chaired the Panel on Military Education.

³ While for simplicity's sake the term *Air Force officers* is used, the residence and distance education programs for the Air Command and Staff College (ACSC) enroll a certain percentage of officers from other Services, international officers, and some Air Force civilian employees.

⁴ *Another Crossroads?* vii. Emphasis added.

⁵ I. Elaine Allen and Jeff Seaman, *Going the Distance: Online Education in the United States, 2011* (Newburyport, MA: Sloan Consortium, November 2011), 5, available at <http://sloanconsortium.org/publications/survey/going_distance_2011>.

⁶ U.S. Department of Education Office of Planning, Evaluation, and Policy Development, *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies* (Washington, DC: Department of Education, September 2010), xviii, available at <www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>.

⁷ The Skelton Report considered students, faculty, pedagogy, and leadership to be the "bedrock" areas of quality requiring assessment within professional military education (PME). As senior leadership for all ACSC programs is the same and this article has made the case that all officers need quality PME, the assessment here keys on faculty and pedagogy.

⁸ *Another Crossroads?* 70.

⁹ ACSC Mission Briefing, February 2012.

¹⁰ For details, consult *The Air University Catalog, Academic Year 2011–2012* (Maxwell Air Force Base, AL: Air University, October 2011), available at <www.au.af.mil/au/catalogs.asp>.

¹¹ *Another Crossroads?* xv.

¹² U.S. Department of Education, xv.

¹³ John A. Nagl and Brian M. Burton, eds., *Keeping the Edge: Revitalizing America's Military Officer Corps* (Washington, DC: Center for a New American Security, February 2010), 70.