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Aim High

The Effects of Online Teaching in Air Force Enlisted Leadership Education

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About the Author

Dr. Mack Arthur Cockrell is the interim dean of the Ira C. Eaker Center for Professional Development. Dr. Cockrell develops policy and directs professional continuing education and technical training programs across all subordinate organizations to help ensure compliance with Air Force and Air University directives. Dr. Cockrell serves as principle advisor to the commander on all academic affairs and assists the staff and faculty in program oversight and development of curriculum, methodologies, and research focusing on education foundations. In coordination with subordinated schools, he works to measure the effectiveness and efficiency of education outcomes at the program level.

Dr. Cockrell is a retired Air Force chief master sergeant with over 26 years' experience leading Airmen. He served five years developing and managing curriculum for the Air Force Senior Noncommissioned Officer Academy (SNCOA). He spent over 2,500 hours delivering instruction to Air Force enlisted leaders. Dr. Cockrell received numerous Air Force honors and accolades including the Air Force Leadership and Management Award for exceptional scholarship as a student attending the Air Force SNCOA. He also earned numerous meritorious service awards for outstanding accomplishments during his Air Force career.

Dr. Cockrell's educational accomplishments include a doctorate in educational technology, a master's degree in management, and a bachelor's degree in business administration. He also has associate degrees in instructor of technology and military science, logistics management and electronics technology.

Abstract

Recent budget cuts caused Department of Defense (DOD) agencies to change operating methods. Instead of eliminating expensive military force structures to produce the required cuts, the DOD began combing through individual programs to achieve savings. Former Chief Master Sergeant of the Air Force (CMSAF) James A. Roy believed budget constraints would drive many changes over the next ten years. His biggest concern was the affect budget cuts to instructional programs of the Air Force would have on the enlisted force. CMSAF Roy's concern was warranted; one area some leaders thought would result in substantial savings was the conversion of enlisted leadership education from resident to online instruction.

The purpose of this Delphi study was to analyze the beliefs of a panel of experts in the field of enlisted leadership education concerning the effectiveness of converting the Air Force's Enlisted Professional Military Education (EPME) program from resident to online instruction. The program's transition from resident to online learning could result in significant cost savings; however, a premature transition of the program—without verifying the outcomes—could render graduates of the program less effective leaders. Michael Simonson, Charles Schlosser, and Dan Hanson's equivalency theory was used to develop theory for this research.[1] Similar to the Hanson, Schlosser and Simon's theory, an expert panel was used to compare the ability to achieve desired learning outcomes between resident and online instruction for this essential Air Force education program. Faculty, graduates, and educational administrators from Air University, Maxwell Air Force Base, Alabama were interviewed. The data analysis was qualitative and thematic. The qualitative responses from the expert panel were read line-by-line and coded to develop themes through content analysis using competitive frequencies.

The present Delphi study investigated the experts' opinions about the transition of the EPME Air Force training program from a residential to an online format. The first stage was a qualitative study. Participants were interviewed and their commentary was subjected to a qualitative thematic analysis. The themes identified in stage 1 were subsequently converted into survey items. These items were used for stages 2 and 3 of the study. Seventeen participants chose (stage 2) or ranked (stage 3) the five most important issues for each of the nine questions. Overall, the quantitative stages

2 and 3 reinforced and/or clarified the findings obtained for stage 1. Specifically, most participants favor a blended learning or mixed residential-online instruction approach. The residential part of the course allowed them to acquire interpersonal skills (e.g., team building, networking and feed-backing), difficult to develop in online environments. It also allowed them to practice, experience, and apply certain critical or more complex leadership skills. On the other hand, online instruction was cost effective, and therefore could be used to transmit theoretical, mainly simple information and skills. The online part of the program should be carefully considered and involve a preassessment or training stage.

Notes

(All notes appear in the shortened form. For full details, see the appropriate entry in the bibliography.)

1. Simonson, Schlosser, and Hanson, "Theory and Distance Education."

Chapter 1

Introduction

As the United States works to reallocate financial assets and shrink national debt, budget cuts are prompting Department of Defense (DOD) agencies to change their operating methods. The automatic spending cuts imposed by Congress in the 2011 Budget Control Act reduce spending outlays by $487 billion between 2013 and 2021, splitting these cutbacks evenly between defense and nondefense agencies. However, instead of meeting these requirements by eliminating expensive military force structures, the DOD has combed individual programs, including the enlisted professional military education (EPME) program, to identify cost-saving measures.[1] The Air Force in particular has been looking for ways to reduce spending on education and training without negatively affecting performance.[2]

EPME provides essential leadership skills to enlisted personnel, the backbone of the Air Force and the group most responsible for accomplishing the Air Force's mission.[3] The branch's former senior enlisted leader, CMSAF James A. Roy, made it his priority to ensure that the enlisted force is prepared for the future through the EPME, and he and other leaders have been concerned that budget cuts to this program could negatively affect military readiness.[4] The Air Force faces the challenge of finding ways to offset budget decreases while continuing to provide top-notch leadership instruction to those in charge of developing enlisted personnel.

Military travel is the primary educational expenditure associated with EPME; the Air Force must currently relocate personnel so that they can participate in resident professional military education courses and other learning programs.[5] To maintain a highly skilled force, the Air Force has for four decades sent more than 29,000 personnel per year to attend resident EPME schools, spending over $40 million in per diem, lodging, and transportation.[6] Unfortunately, the sequester could reduce the budget allowed for this travel, and the military expects budgets to shrink even more in proportion to the country's gross expenditure, putting this robust program in danger.[7]

However, the EPME program is essential. It provides enlisted leaders with four required levels of education that develop airmanship and war-fighting skills and familiarize personnel with each new stage of

leadership. From an understanding of the expectations placed upon Airmen, to the management of Air Force units, the support of national security objectives, and the arrival at a strategic perspective as senior enlisted members, leaders rise through the ranks of staff sergeant, technical sergeant, master sergeant, senior master sergeant, and chief master sergeant by attending, through EPME, Airman Leadership School (ALS), Noncommissioned Officer Academy (NCOA), Senior Noncommissioned Officer Academy (SNCOA), and the Chief Master Sergeant Leadership Course (CLC).[8] The curriculum is broad, including topics in national security, airmanship, human resources, and organization management. Senior leaders emphasize that EPME is prestigious and that by requiring all enlisted personnel to complete this education, the Air Force gains valuable leaders fully prepared for specialized employment after graduation.[9]

Leadership in the military prioritizes mission success, a goal that requires the effective use of teams, as leaders must translate guidance and directives from their superiors into specific duties and responsibilities for their teams.[10] But military leadership also requires strong interpersonal skills, as enlisted leaders monitor both their subordinates' personal and professional lives, showing empathy toward them and inspiring them toward greater achievements.[11] Leaders in the enlisted ranks are usually best situated to notice early signs of personal, spousal, monetary, substance abuse, and stress-related difficulties. This helps them prevent discrimination, sexual harassment, self-harm, and suicide, thereby supporting a professional environment that enables all personnel to achieve success.[12] Enlisted leaders are also responsible for assisting personnel as they develop professional and technical skills, for clarifying standards, for providing performance feedback, and for counseling subordinates on unprofessional behavior and military bearing.[13] Leaders must serve as visible examples of exemplary performance while cultivating their subordinates into effective team members and, in time, managers and leaders themselves.[14]

These relational responsibilities cannot be underestimated, since adequate education in this area allows leaders to fulfill their primary goal— mission success. The core of military leadership is to make a difference, create positive change, move people to get things accomplished, and get rid of anything that does not contribute to the mission. Leadership includes imposing principles, motivating personnel, and communicating goals and visions for the future, thereby fostering teamwork among subordinates and successful completion of common

goals.[15] Leaders—whether in the military or in the private sector—attain goals by establishing direction, shaping strategy, executing decisions, and managing and developing talent.[16]

These goals are achieved by mobilizing one of several leadership styles, as the leader's current task and personnel require. Autocratic leadership refers to a situation in which the leader has exclusive decision-making power and the experience and ideas of subordinates are discounted; this is often effective in battlefield or training situations when authority and discipline are the focus.[17] Another option is democratic leadership, in which the leader includes their subordinates in the decision-making process and in developing organizational visions. This leadership style relies on collaboration, and therefore decisions can take a while to coalesce.[18] On the other hand, a leader who inspires positive performance by providing rewards or praise is considered a transactional leader. This type of leadership incorporates a blend of short- and long-term positive reinforcement to inspire subordinates toward a common goal.[19] Finally—and arguably the most effective approach in a majority of situations—transformational leadership emphasizes the subordinates' intrinsic motivation and personal development. Leaders who use this style try to align their subordinates' ambitions and desires with preferred organizational outcomes. Transformational leaders promote their subordinates' commitment to the organization and motivate them to exceed even their own expectations. In complex organizations, subordinates tend to have more confidence in transformational leaders to lead them through chaotic or high-risk situations and are more devoted to the cause.[20] While all of these leadership styles are useful in the military structure, transformational leadership is often the most effective.

In war, leaders must inspire their followers to exceed expectations and must show unerring commitment to their subordinates, the unit they lead, and the task at hand.[21] In times of crisis, transformational leaders accomplish these things better than other types of leaders, as they can encourage their subordinates to suppress their own interests for the good of the group and the nation.[22] This is the type of leadership EPME seeks to engender in its participants, producing enlisted leaders who promote the success of both the organization and the individual, in cooperation.[23]

While the Air Force EPME program aims to produce transformational leaders and has proven to be an advantage for military personnel who go on to work as chief executive officers (CEO) in the private

sector after leaving the service, enlisted leaders must also learn skills unique to military and emergency environments.[24] Central among these are the skills that prepare them for leadership in crises. Unlike civilian leaders, leaders in the military must be prepared to work under stressful and volatile combat conditions, in which outcomes are unforeseeable and often dangerous.[25] As in the case of firefighters, police, and emergency medical personnel, the actions of the military leader and their team can result in harm to not only the team but also to civilians. The leader must be able to motivate the team to follow orders in dangerous situations and to use force when necessary. In order to choose to risk their lives for the mission, team members must be confident that their leaders can make good decisions quickly. Leaders must also recognize that failure to perform their leadership duties could have catastrophic results for the team, for the military, and for the people to whom the military is accountable.[26] Although corporations may expect their executives to be available 24 hours a day, ready to make great sacrifices for stockholders, these executive job descriptions do not include leading subordinates to their deaths in the service of their country.[27] The Air Force's military enlisted leadership education program prepares enlisted personnel for the heavy responsibility of crisis leadership and to inspire within their subordinates—even in the midst of extremely volatile situations—integrity first, service before self, and excellence in all they do.

However, budget cuts could endanger the essential education necessary to produce quality military leaders, as the drive to be cost effective has motivated the service to consider alternative methods of instruction that may weaken EPME's training in relational, transformational, and crisis leadership.[28] Encouraged by the success of major universities and civilian organizations, which have reported both a drop in education costs and a rise in technical competence and long-distance collaboration skills after implementing online instruction programs, the Air Force has begun EPME Next, an online course designed to prepare students for the resident program and reduce their time in the physical classroom.[29] Some Air Force leaders believe that converting part, or even all, of the EPME program to an online modality like EPME Next will allow enlisted personnel to continue receiving essential education despite the military's financial restrictions.[30] Leaders interested in continuing to manage budget constraints without reducing educational outcomes have advocated going further, replacing all resident programs with online instruction and

removing the interactive, synchronous component of the existing EPME resident program.[31]

Others disagree. Opponents to online instruction argue that moving prematurely to an unproven, fully-online platform could have negative consequences. As of yet, there is no empirical evidence that indicates an online program will continue to achieve the learning outcomes that have become expected of EPME, and some doubt that moving EPME entirely online would be effective for enlisted instruction.[32] Many faculty members, including former Air University Chief Academic Officer Dr. Bruce Murphy, have expressed reservations, and even Congress seems reluctant to embrace online instruction for this program, barely mentioning it as an alternative to resident instruction during their 2010 Congressional EPME review.[33] Because the nature of military leadership differs from that of civilian leadership, the realities that make asynchronous, online education viable in civilian organizations may not parallel those of the military. Those face-to-face skills that make transformational and crisis leadership possible are indispensable, since enlisted leaders must engage with their subordinates and be familiar with their backgrounds and temperaments; detecting whether an individual is experiencing depression or being sexually harassed can only be achieved through personal contact.[34] Everything positive associated with good leadership among enlisted ranks, such as boosted morale, retention, job performance, trust, and mentorship, could be jeopardized if EPME moves to an entirely online format.[35]

In addition, because military educational systems bear a greater burden than civilian systems—because the US armed forces protect the nation—any weakening in the educational environment of EPME could be disastrous. Military personnel must demonstrate a qualitative educational advantage that allows them to guard against multiple adversaries and a very diverse set of dangers from around the globe.[36] It is essential that the military improves instructional programs like EPME instead of undermining them, and there is no evidence that conversion to a fully-online program will continue to produce the Air Force's necessary learning outcomes. Moreover, even in civilian universities, online instruction is often considered less preferable than traditional classroom instruction, and online courses are sometimes not even counted for credit toward a final degree.[37]

Despite these objections, the move to a partially online platform for EPME training, beyond EPME Next, seems inevitable. As far back

as 1995, then-Air Force Chief of Staff Gen Merrill McPeak recognized that the needs and methods of conducting EPME would require significant transformation over the following decades, with technology at the center of that change.[38] In the midst of these fateful developments, Air Force leaders should be equally wary of letting tradition get in the way of considering both the significant cost savings and educational benefits that online education can provide, as well as letting budgetary restrictions diminish the quality of enlisted education by prematurely reducing resident learning opportunities without evidence of online success.

My aim in writing this paper is to address the lack of adequate research into the benefits and disadvantages of using online education in an enlisted leadership education setting and to provide an empirically solid recommendation for the future direction of the Air Force's EPME program. I challenge the equivalency theory set forth by Michael Simonson, Charles Schlosser, and Dan Hanson, which states, in short, that courses taught online produce the same results as courses taught in a traditional classroom setting.[39] While numerous other investigators have supported this idea, and research has determined online education can in some cases be even more effective than classroom education, there is some doubt this applies to courses in management or crisis leadership.[40] Further—since no military branch has yet attempted either a fully online or blended EPME program—there is precious little evidence from within the military leadership educational system to support a hypothesis either way.

My answer to this dilemma was to convene a panel of experts in the field of enlisted leadership education from Maxwell Air Force Base (AFB), Alabama, and to engage them in a qualitative Delphi study that explored their opinions on the matter. In the absence of hard data regarding the results of online education in an enlisted military leadership setting, this consensus approach allowed me to use the panel's collective knowledge and foresight to determine if the EPME program can continue to achieve desired learning outcomes if converted to an online platform and to assess the impact on enlisted leadership if the program is prematurely transferred online. My goal was not to measure the value or effectiveness of EPME as currently taught, nor to explore the potential cost benefits of converting to an online model, but simply to determine if doing so will achieve equal or improved learning outcomes. Through a series of three questionnaires, I surveyed 18 panelists who are or were at one point assigned

to Air University at Maxwell AFB. These participants included faculty who teach Air Force leadership courses, graduates who have completed the residency EPME leadership program, and administrators who manage the Air Force's educational programs.

This paper presents not only the results of this research and a final recommendation regarding the usefulness of online teaching in Air Force enlisted leadership education but also a historical overview of classroom and online education, as well as military pedagogy. Chapter 2 (Investigating Pedagogy) considers the similarities and differences between classroom and online learning, as well as the price in time and money of converting a course from brick-and-mortar to online. Chapter 3 (Military Leadership) outlines the core elements of Air Force enlisted leadership education, including the relational and decision-making skills necessary for military leaders who serve in crisis situations. Chapter 4 (The Air Force EPME Program of the Future) describes what an online EPME program would look like and details the advantages and disadvantages of this choice. In short, this paper explains why I do not recommend a complete transition to an online format and why the Air Force should adopt a mixed online-residential approach instead. Providing exceptional education to rising Air Force enlisted leaders in relational, transformational, and crisis leadership is not a responsibility to be casually transformed according to budgetary needs, but rather one to which the budget—and the mobilization of both classroom and online teaching as appropriate to the program's goals—should be subservient. In this area, the Air Force must aim high.

Chapter 2

Investigating Pedagogy

The increased responsibilities bestowed on enlisted Airmen during the personnel drawdown that followed the Korean War led the Air Force to develop the EPME program.[41] Realizing that enlisted, noncommissioned officers were more than capable of performing many of the duties previously performed only by junior officers, the Air Force reduced the number of commissioned officers by assigning their duties to enlisted personnel. However, before the 1950s, enlisted personnel were considered specialists in their assigned tasks, but not leaders, so these noncommissioned officers needed the specialized education previously provided only to commissioned officers. The first NCOA for enlisted personnel was opened in 1953. The goals of this academy were not only to educate enlisted personnel in leadership and management but also to promote the prestige of the enlisted NCOs. Personnel selected to attend the newly established academies were assigned to preeminent, and private, dining facilities and dormitories, separate from other personnel facilities. At the time, their education included counseling, leadership and management, public speaking, and military law.[42]

The Air Force EPME program has evolved over the years. The five-stage program (NCO Orientation Course, USAF Supervisors' Course, NCO Leadership School, NCOA, and SNCOA) has been converted to a four-stage program (ALS, NCOA, SNCOA, and Chief Master Leadership Course [CLS]).[43] The curriculum within each level has also developed over time. The original enlisted NCO Leadership School course load covered the essentials of leadership, drill and command, military law, writing, and public speaking. The NCOA curriculum covered military management, military instructor training, speech, problem solving, world situation, and drill.[44] The current NCOA curriculum, on the other hand, prepares Airmen to be professional war fighters who supervise, manage, and lead teams in the employment of airpower, and that prepares personnel to lead the enlisted force in the employment of airpower in support of US national security objectives.[45]

The program's attendance requirements have also changed, and regulations now emphasize that personnel must continue participating

in professional development opportunities while enlisted. Air Force leaders emphasize that EPME continues to maintain its prestige and that requiring all enlisted personnel to attend this education makes enlisted personnel highly valuable assets, able to be fully utilized after graduating EPME.[46] Everyone is a winner in this setup: the NCOs, the Air Force, and the American people.[47]

As explained in Chapter 1, the primary issue facing the Air Force EPME program is how to maintain its current efficacy and prestige while responding to budget pressures, and one solution may be integrating online learning more fully into its structure. Through its EPME Next module, the Air Force has already employed online classes to prepare enlisted personnel for its resident program, but it would be unwise to transition further into an online mode without additional research and analysis. There has, however, been very little research on the topic of online instruction in enlisted military education, let alone in enlisted leadership education in the Air Force. Because of this, we must analyze the efficacy of online education in civilian organizations, other US military service branches, and military services in other countries to determine whether the Air Force can convert its enlisted leadership education programs to an online mode and still achieve its desired learning outcomes.

Finding Answers: A Survey of Air Force Education Experts

In order to allay some of this uncertainty and to provide actionable data for Air Force education leaders regarding the wisdom of pursuing a more fully online platform for the EPME, I mobilized a qualitative study using a modified Delphi technique, a method designed to obtain the opinions of and a consensus among a panel of 18 Air Force personnel with expertise in the field of enlisted leadership education—senior-level EPME faculty, senior-level EPME graduates, and administrators of the Air Force educational programs.[48] The goal of this study was to determine the effectiveness of using online instruction in the Air Force senior-level enlisted leadership education program.

The Delphi technique is a "hybrid survey design that aims to reach consensus on important issues. It is characterized by a specific sequence of events; response of an expert panel, formulation of questions, generation of statement of opinion, reduction and categorization, rating analysis and iteration."[49] The traditional technique usually starts with the researcher developing a set of open-ended questions

on the issue being researched. The researcher then presents these questions to a panel of experts, who provide answers. These answers are analyzed and summarized and then redistributed to the experts to allow them to clarify any areas of disagreement. The Delphi method was particularly apropos in this case, since no hard data on the efficacy of online teaching in the EPME program currently exists and so decisions at this stage must be made by considering carefully formulated expert opinion. The modified Delphi used in this study differs from the traditional Delphi, however, in that the first-round questionnaire consisted of questions prompted by a literature review.[50] Because literature on the success of online education in other fields and organizations does exist, the modified approach let me urge my respondents closer to actionable answers from the very start of the process. The Delphi method also employs confidential questionnaires completed in writing, which allowed respondents to answer more honestly and to verify their responses before submission.

In answering the following questions, the study's respondents provided essential guidance regarding the use of online learning in the EPME program.

1. Which aspects of EPME, if any, are best taught using resident instruction?
2. Which aspects, if any, of military leadership can be taught equally effectively using either online or resident instruction?
3. In what ways, if any, do you think military leadership differs from civilian or corporate leadership?
4. In what ways, if any, do you think EPME improves enlisted leadership skills?
5. What, if any, impact do you think it would have on military effectiveness if EPME were converted from resident to online instruction and it proved to be ineffective?
6. What role, if any, do you think the cost of educating enlisted leaders should play in influencing the method for conducting EPME programs?
7. Explain what harm, if any, you think changing EPME from traditional classroom instruction to an online platform would have on the credibility of the EPME program?

8. Accepting the fact that Air Force enlisted leadership requires face-to-face execution, which aspects, if any, of enlisted leadership do you think cannot be successfully taught using online instruction?
9. Considering that some people are more comfortable using technology than others, how should the Air Force consider this comfort level in deciding whether to use the traditional classroom or an online method for conducting EPME?[51]

The solutions garnered through this survey inform data and solutions presented throughout the entirety of this paper and support and extend the research of others who have considered the merits of online education in leadership training in both the military and in the civilian sector.

The Perceived Benefits and Limitations of Online Learning

Business and educational organizations are successfully using online learning in conjunction with many disciplines, and research indicates that online instruction is a viable alternative to resident instruction.[52] According to Cindy Ann Dell, Christy Low, and Jeanine F. Wilker, for instance, no significant difference in student achievement is tied to the online or residential modality of a course.[53] Further, while a 2004 meta-analysis of more than 200 studies that compared differences between online and face-to-face classes showed mixed results concerning the benefits of online learning, another conducted in 2009 examined 51 studies and found that 11 strongly favored blended or online instruction, while two favored traditional in-resident instruction and 38 rated online and resident instruction as equally effective.[54] These findings suggest that online courses and courses taught at least partially online generally produce equal or stronger learning outcomes than courses conducted solely with traditional in-resident instruction and that the quality of instructional method is a more significant determinant of success than is the mode of attendance.

Scholars have also identified several distinct benefits in online education. Tony Bates believes, for instance, that the greatest advantage of this mode is the prospect for collaboration between learners and teachers, especially when students can work directly with the teachers who designed the course.[55] Moreover, online education

provides easy access, lower costs, and wider availability—important considerations for students with financial or geographical limitations.[56]

Despite the advantages offered by online learning and the successful outcomes of this approach achieved in many disciplines and organizations, there are those who claim it is inadequate, and in the Air Force, some are concerned that the learning outcomes required for enlisted leaders cannot be achieved solely through online instruction.[57] While the majority of chief academic officers in the Air Force believe online education is as effective as resident education, others feel there are still important road blocks to address. One issue is that online learning requires a substantially greater amount of discipline on the part of students. Another is the fact that online courses have continuously experienced lower retention rates.[58] In addition, it is difficult to assess student performance in online courses; it is easier with residential instruction because instructors can more closely monitor students and note those who are not participating in class discussion and activities.[59] Finally, some researchers of online education, broadly conceived, flat-out contradict Bates's view that collaboration is an advantage of online instruction.[60]

Although the credibility of online learning is steadily increasing, research shows that many educators and students still do not perceive online learning to be as effective and desirable as traditional, face-to-face learning.[61] A study conducted by Chad J. McGuire and Sidney Castle analyzed student assessments in resident, blended, and online learning environments and found that of the 4,038 students sampled, the majority preferred on-site learning over online and blended learning; these students also preferred blended learning to fully online learning.[62] However, a 10-year study conducted by I. Elaine Allen and Jeff Seaman, which compared online learning with resident learning, found that many academic leaders now believe that online learning is equivalent to resident instruction and that their numbers are growing. Nevertheless, the same study showed that many still do not believe adequate learning outcomes can be achieved using an online platform.[63] This may be especially true among Air Force education leaders tasked with teaching military leadership courses.

Addressing Student Needs and Tricky Topics

Online learning is undoubtedly beneficial for some students. Research shows that online learning has proven most beneficial at the top levels of education, and some studies reported that this method produces better learning outcomes among the highly educated than does resident instruction.[64] In addition, the learners' generation can affect their response to the online environment, as each tends to have vastly different learning preferences.[65] Some generations require faster speed, more visuals, and greater active engagement, and it is a mistake to teach members of different generations using the same methods without considering their generational differences. Understandably, millennials, with their greater exposure to and reliance on technology, are usually best suited for online education.[66]

Not all students do better in the online environment, especially when the course topic does not lend itself to that mode. Todd A. Farmer conducted research on leadership preparation for the twenty-first century and emphasized that incompatible learning styles must be accommodated according to the approach followed.[67] Some students, for instance, may need more technical assistance than others when taking online classes.[68] In addition, some professional occupations are not well served by online education. Research has proven that fire services, public work utilities, homeland security, safety and health, technology, and search and rescue employees are best educated through face-to-face interactions.[69]

Other topics for which online education has proven inconclusively effective are public speaking, counseling, and the management of sensitive employee-related issues—all of which are essential in the EPME program. Using a hybrid format for speaking courses should not yet be discounted; one study compared the effectiveness of teaching public speaking through a hybrid course to doing the same through a traditional classroom course and did not find that one was better than the other.[70] The same uncertainty holds true for training counseling skills. While most educators prefer to conduct counseling training in classroom settings—since it is easier to evaluate students' nonverbal behaviors and their ability to demonstrate empathy when they are being taught in person—videotaped role-play shows potential.[71] Finally, learning to deal with sensitive employee-related issues requires a personal touch that online education cannot provide. Controversial topics such as diversity, sexual assault, suicide awareness,

gender issues, and affirmative action can be uncomfortable to discuss face-to-face, yet personal discussions are nevertheless preferred, both by students and by employees.[72] The benefits and limitations of online education when dealing with topics that require interpersonal communication and care—topics that are essential in Air Force leadership education—remain uncertain.

The Military Budget and the Cost of NCO Education

As emphasized in chapter 1, government budget cuts could threaten EPME, and it is possible that the budget for education in these communication-centered topics may be reduced. The Air Force is considering ways to decrease the per diem, lodging, and travel costs associated with EPME, which currently come to over $40 million for the more than 29,000 enlisted leaders who participate annually. Online learning can alleviate some cost, but should it?

Despite monetary pressures, the 18 experts I consulted agreed, fairly unanimously, that though the cost of education should be taken into account, it should be the least determining factor in deciding whether EPME training should be moved to a more fully online environment. Most agreed that online courses could save money but were adamant that, in preparing enlisted personnel to take on critical leadership roles, the quality of their education was of paramount importance and that the benefits received from EPME should determine its cost. This is an understandable response from Air Force leaders who have been tasked with maintaining the safety of the United States in war and in peace; the importance of this education must trump financial concerns.

Despite this, the expert panel suggested two courses of action that could mitigate the effects of the budgetary crisis on Air Force leadership education. First, conducting a cost-benefit analysis of online education should be the first step in determining whether the current financial burden of EPME could be satisfactorily eased by moving to this modality while maintaining the program's educational rigor. The long-term and invisible factors of both residential and online learning should be taken into account as part of this process, including the expected technological difficulties and lowered efficiency that many leadership students will likely experience. Second, a mixed-method approach—blending residential and online learning—could be safely

employed and could reap the benefits of each modality's strengths. One respondent commented, "You can still bring the people together [in residential learning], but do it for a shorter amount of time. That way you still gain the networking and comradery piece to EPME."[73] Adopting this approach could provide decision makers with a more precise idea about the educational advantages and disadvantages associated with online formats, while saving some money besides.

Military Versus Civilian Leadership

The acute and wide-ranging responsibilities of military leaders raise the stakes of the education process, often beyond those experienced in civilian and corporate environments; this is why my panel of experts emphasized that the cost of education is immaterial when compared to the importance of preparing military leaders for these responsibilities. In a private business, it could be argued that cost is the most important factor in determining whether an online education is feasible. In the military context, operational effectiveness is most important. The next chapter will consider military and Air Force leadership responsibilities in more detail, though it is essential that we recognize the primary differences between military and civilian leadership and how this must affect the way education is treated among enlisted personnel. While the polled experts acknowledged that similarities between the two leadership environments do exist, they, for the most part, emphasized key differences that speak to both the content and consequence of military leadership education. Primarily, they noted that military leadership is weighted more heavily toward hierarchical and structural rigor. Both leaders and followers in the military are more disciplined, committed, self-controlled, and accountable for their actions. One participant noted that this is simply efficient, "It often facilitates getting things done without so much 'red tape.'"[74]

Additionally, the experts noted a greater seriousness among military leaders' decisions (e.g., "Military leadership involves total commitment. It can and frequently does involve life and death decisions"). Because of this, precision, attention to detail, and broad knowledge are key. Leaders must be life-long learners, investing in a continuum of learning that keeps them up to date on military regulations, leadership expectations, and field-specific details. The heightened responsi-

bilities placed on military leaders require that the quality of their education remains paramount. Military leaders make life-or-death decisions and are therefore more accountable for their decisions than their civilian and corporate counterparts, requiring a higher degree of discipline and care. The question thus remains: Though online education seems to work well in civilian contexts, can it provide for Air Force leaders the rigorous education they need in order to meet the challenges of their greater responsibilities?

Chapter 3

Military Leadership

According to Air Force Pamphlet 36-2241, enlisted leaders play a critical role in helping the Air Force project airpower.[75] The Air Force requires that its senior enlisted personnel be highly effective leaders with the primary purpose of leading and managing teams to accomplish their missions. These leaders must use their extensive experience and abilities to leverage personnel and resources against mission requirements, translating the guidance and directives provided to them by their superiors into specific duties and responsibilities that their subordinates can comprehend and perform.[76] Air Force enlisted leaders must be visible leaders, cultivating subordinates into effective leaders and managers themselves.[77]

The US Air Force expects its enlisted leaders to serve on an interpersonal level as well, helping their subordinates resolve personal, monetary, spousal, alcohol, and stress-related difficulties. These leaders are usually in the best situation to notice early signs of trouble and can address and resolve these issues before they escalate. A major responsibility of enlisted leaders is to persistently watch for signs that Air Force members may be at risk of harming themselves, since supervisors can quickly notice early signs of suicidal behavior and take prompt action. Further, enlisted leaders help prevent discrimination, sexual harassment, and other misconduct.[78] They clarify workplace standards, provide performance feedback, and counsel personnel on how to behave professionally and with a military bearing.[79]

Defining Leadership

John Kunich and Dr. Richard Lester explained that the core of military leadership is to make a difference, create positive change, motivate others to get things accomplished, and get rid of anything that does not contribute to the mission.[80] This resonates with definitions of leadership from nonmilitary settings. In general, leadership requires that leaders impose principles, motivate personnel, and communicate goals and visions for the future. Leadership is an interactive process in which leaders inspire their followers to achieve common goals, establish direction, shape strategy, manage and develop

talent, and act with personal proficiency.[81] Successful leaders know what is expected of them and do it, motivating their subordinates to do the same.

Leadership is more than management. Management is a structured process that must comply with rules and regulations. It is hierarchical and focuses on control and influencing people. Decisions are routine and made within established parameters. A leader, on the other hand, is someone who manages goals and establishes values for the people in their organization. They inspire their subordinates and help them achieve the agreed-upon goals. While managers maintain day-to-day operations, leaders generate change, motivate, inspire, and cultivate interpersonal relationships with their employees.[82] Not all managers are leaders, but all leaders must be capable of managing. In the corporate arena, managers are more prevalent; in the military, leadership is key.

There are three levels of leadership: strategic, operational, and direct.[83] Strategic leadership involves the total environment and requires that the leader balance budget constraints, oversight, research, and development. The strategic leader must often make long-standing and widely impactful decisions without concrete data and know that many of their decisions will be fulfilled long after they have left their current position. This type of leader must be less concerned with instructing individual employees and more concerned with directing the overall trajectory of the organization.[84]

Operational leadership, on the other hand, builds structures and systems that allow strategic leaders' visions to be achieved. This level of leadership lies between the strategic and tactical level, and leaders at the operational level craft supporting infrastructure and the frameworks necessary for processes, systems, structures, and incentives. This leadership type is indirect, as several layers of leadership separate the organizational leader and the individual employee. There is more uncertainty, more complexity, and a greater possibility for unknown outcomes at this level.[85]

The most personal level of leadership is face-to-face, or direct leadership. This level of leadership occurs in groups where leaders and subordinates interact on a daily basis. In the Air Force, this becomes relevant in work teams, flights, units, and squadrons. Leaders at the direct leadership level are in a better position to notice morale problems, performance issues, and social matters that affect personnel. Direct leaders are also in the best position to determine how the team's

output is affecting unit performance and can take immediate and appropriate actions to correct deficiencies.[86]

In the military, the rank of leaders can indicate their leadership level, but leadership level often comes down to how the leader is expected to interact with immediate subordinates. For example, most noncommissioned officers in the grades of E5–E6 provide direct-level leadership. However, some noncommissioned officers, especially in grades of chief master sergeant, may provide operational or strategic leadership. Command chiefs and the chief master sergeant of the Air Force are examples of noncommissioned officers performing operational and strategic leadership. Therefore, when examining the Air Force's leadership education programs, the level of leadership for which the education is designed should be considered. Corporate education programs tend to be designed for leaders operating at the strategic or operational level. The Air Force's EPME program is mostly concerned with preparing enlisted personnel for tactical or direct-level leadership.

Leadership Style

Researchers have identified a number of different leadership styles, and the key to a leader's ability to positively influence followers is to understand the requirements of any given task and apply the leadership style that best suits the situation.[87] There are four leadership styles most prominently used in military organizations: autocratic, democratic, transactional, and transformational.

Autocratic leaders rely mostly on power and control to get things accomplished.[88] These leaders make decisions almost exclusively on their own, discounting the experience and ideas of their team members. They tend to lead by force and intimidation. Communication flows mostly upward, and relationships between the leader and subordinates are not nurtured.[89] In the military, this type of leadership is often effective in the battlefield or in training situations, where authority and discipline are the focus.

Democratic leaders, on the other hand, realize how important employees are to the organization and tend to include them in the decision-making process and in developing organizational goals. These leaders encourage strong relationships throughout the organization, and subordinates feel valued when leaders consider their opinions. However, a negative aspect of democratic leadership is that

it can present problems if followers do not get to participate in the workings of an organization at any given time. Because democratic leaders often rely on collaboration, it is difficult to make quick decisions.[90]

When used in the right circumstances, democratic leadership can be tremendously beneficial. For example, Air Force Secretary Deborah Lee James has championed an Airmen Powered Innovation program across the service. The goal of this program is to encourage Airmen of all ranks to provide ideas that generate savings and improve quality, productivity, processes, and morale. By using a democratic style of leadership, leaders encourage ideas from Airmen, both affirming the value of their input in the decision-making process and making positive, significant changes for the Air Force. The Airmen Powered Innovation program championed by James is projected to save over $120 million.[91]

Transactional leaders reach goals by setting up a series of transactions between themselves and their subordinates. These leaders seek mutually satisfying outcomes by providing clear direction and holding subordinates accountable for their actions. This style is often successful in military environments because it removes the guesswork. Transactional leadership creates clear leadership structures whereby it is obvious what is required of subordinates, and subordinates receive rewards for following orders.

Bruce et al.'s study of 72 Army light infantry platoon leaders found that effective transactional leaders do not interfere with workflow unless an issue arises.[92] These leaders anticipate problems and issue corrective actions only when necessary. Transactional leadership works best in organizations where structure is important. Gen Norman Schwarzkopf, for instance, successfully used military rules and regulations to coordinate combat operations on several continents during Operation Desert Storm. He led a group of talented leaders, fully capable of delivering expected results. Because of this, he did not try to engage with every unit commander on every issue. Instead, his focus was appropriately placed on the cutting edge of his attack. When the Iraqis countered with their unanticipated actions, General Schwarzkopf focused his attention to counter the unanticipated threat.[93] The general exemplified transactional leadership, creating an ideal structure for his joint service commanders to perform effectively. He also recognized them for their outstanding accomplishments and his leadership led to one of the most successful military operations in history.

Transformational leaders engage with their employees on a more personal level, emphasizing their followers' intrinsic motivations and personal development.[94] These leaders try to align their subordinates' ambitions and desires with the preferred outcomes of their organization. Transformational leaders promote their employees' personal growth and their commitment to the organization, motivating these individuals to exceed even their own anticipated performance. This type of leader incorporates subordinates' needs and values into a joint vision that motivates them to pursue the same goals as the organization.[95]

Personnel working for transformational leaders are empowered to make decisions in pursuit of organizational goals, as their leaders tend to be apt at developing a shared organizational vision, stimulating their subordinates intellectually, establishing high performance goals, and making sure employees know that excellence is expected. These leaders promote cooperation between employees and challenge them to reexamine many of their assumptions about the nature of their work. In environments characterized by transformational leadership, the successes of the individual and the organization are viewed as complementary, and leaders support their followers by showing respect and concern for their well-being. This type of leader acts as an appropriate model by setting an example for his or her subordinates. Research shows that in complex organizations and in vigorous business environments, subordinates often see transformational leaders as model change agents who can successfully lead others in times of indecision and high risk-taking.[96]

Leadership effectiveness, and the employee job satisfaction that goes with it, is fundamental to organizational success.[97] Ideal leaders are those who manage tasks *and* relationships in ways that get the job done while also achieving a high level of job satisfaction among subordinates.[98] However, leadership styles that primarily focus on tasks at the expense of relationships can be highly damaging.[99] Poor leadership is characterized by micromanagement, aggressiveness, poor decision making, self-interest, unethical behavior, having a poor attitude, and setting a bad example. The results of this include decreased employee retention, nonproductive work, over-penalizing for minor mistakes, decreased organizational performance, and, in the military, mission jeopardy. In this setting, personnel feel deprived of deserved promotions, leaders are unwilling to implement subordinates' positive ideas, creativity is discouraged, and morale declines. The most critical result of poor leadership, especially in a military

environment, is when subordinates are not confident in following their leaders' instructions in life-or-death situations.[100]

Effective and positive leadership is therefore essential in military settings, and transformational leadership best achieves the ideal work environment. Research pertaining to the use of leadership to increase the commitment of Air Force personnel in time of conflict found that transformational leaders accomplished this better than leaders that employ other styles. Transformational leaders encourage subordinates to suppress their own interests for the good of the group, organization, and society.[101] Transformational leadership most fully aligns with the mission and vision of the Barnes Center, which develops the curriculum for all Air Force enlisted leadership education.[102] Convincing subordinates to commit to the profession of arms requires transformational leaders who can persuade their subordinates to align their values with the values of military service. Transformational leadership improves troop morale among junior subordinates, which can increase reenlistment rates.[103] The employ of transformational leadership is required for leaders to persuade followers to commit to the Air Force framework of integrity first, excellence in performance, and service above self.

The Air Force EPME program is responsible for preparing enlisted personnel to be transformational leaders. In my study on EPME and the possibility of employing online learning in this program (see chapter 2), respondents identified four advantages to the current program: training in interpersonal skills, training in organizational skills, exposure, and practice. The organizational benefits of EPME centered on the creation of shared knowledge and skills and on improving the organization's efficiency. In regard to the exposure benefits, one participant remarked that "there are so many aspects of leadership and it is hard to become exposed to all of them in the workplace, whereas in the EPME setting one can have the opportunity to see all the tools available." Gaining hands-on experience using these tools is one of the benefits of practice. This opportunity "reinforce[s] those 'tried and true' techniques that enhance effective leadership."[104]

Above and beyond these three assets, respondents identified the interpersonal benefits of EPME as the most important. EPME plays an important role in giving participants the opportunity to interact, communicate, and network with their peers. As one participant noted, "interaction with peers in person improves communication. It

also fosters relationships and builds teams." Responses suggest that EPME allows participants to develop a more acute self-awareness and an ability to assess their present strengths and weaknesses accurately. This research emphasizes the centrality of EPME's interpersonal interaction, highlighting the fact that the program allows enlisted leaders to share knowledge with each other, prepares them for future challenges, promotes peer-to-peer feedback, facilitates networking, and trains leaders to self-evaluate. Given this, it is essential that no matter the mode of education employed in EPME in the future—brick-and-mortar, online, or blended—the interpersonal aspects of the program must be emphasized. These skills are key to creating transformational leaders.

Comparing Military and Nonmilitary Leadership

Because there is precious little literature on the outcomes of online learning in enlisted military leadership education, we must both consider the results of similar programs in the civilian sector (which have been successful on the whole) and determine whether differences between military and civilian leadership—especially business leadership—indicate that a different outcome should be expected in the military setting. In short, research has shown that military leadership is not the same as civilian leadership, although military leadership *can* be similar to business leadership during times of peace. Still, a survey of Army, Navy, and Air Force personnel found that these military leaders evoke a higher level of respect from their subordinates than their civilian counterparts do. Civilian leaders, on the other hand, tend to be better at management; this makes sense, since the military aims to cultivate holistic leaders, while civilian agencies focus more on organizational performance. Military leaders must generate higher levels of motivation and commitment from their employees.[105]

However, the major difference in military and civilian leadership occurs during times of crisis. For the military, a crisis involves life-or-death decisions for citizens of the US and, sometimes, the entire world. In business, on the other hand, a crisis may involve a significant drop in stock prices, which certainly affects lives but is not immediately critical.[106] Crisis leadership in the military requires working under volatile conditions during combat, placing military leaders in situations with significantly higher stakes than those faced

by civilian or corporate leaders. Military leaders must be prepared in advance to operate under these stressful conditions.[107] In fact, leaders in the military tend to believe that the quality of leadership among nonmilitary personnel is lacking because most civilians have not had this education.[108]

In a study comparing military leadership with local-government emergency personnel, including firefighters, police officers, and emergency medical service personnel, Patrick J. Sweeney, Michael D. Matthews, and Paul B. Lester noted that crisis leadership *can*, however, share important characteristics across the military/civilian divide.[109] They used the September 11, 2011 tragedy as an example—a crisis in which members of all ranks in all three of the listed groups died, including both leaders and subordinates. They noted that, in crisis, it is imperative that followers trust their leaders, and that in order to do that, followers must have confidence that their leaders have the capacity to make good decisions quickly. Sweeney, Matthews, and Lester defined "dangerous context leadership" as an unpredictable situation in which the outcome is unforeseeable, and the leader's decisions can result in harm to their personnel or to a wider group of people. The leaders and their subordinates recognize that failure to perform leadership duties could have catastrophic results for the organization and for the people to whom the organization is accountable. Dangerous context leadership requires (1) a distinct set of skills that take special training to develop and (2) the ability to motivate personnel to follow a leader in dangerous situations.[110]

Members of the military profession argue that military members are a profession of arms, with the essential purpose of defending the interests of the nation—using force when necessary. This is unique to dangerous context careers, including the military profession. The military profession, in particular, is a calling that requires devotion to service and a willingness to sacrifice far beyond what the marketplace requires.[111]

While corporate education is insufficient for military leaders, education in military leadership has conversely proven to be highly advantageous among leaders who later transfer to civilian leadership roles. A 2009 study of leadership in aerospace organizations reported that a significant number of aerospace companies listed on the Standard and Poor's 500 index had CEOs with prior military experience.[112] These CEOs possessed hands-on experience unavailable in the civilian leadership trajectory and demonstrated better leadership performance

than others in the corporate world. Leaders with military experience excelled in boardrooms because they could work more effectively in teams and were skilled at establishing goals, acting ethically, and remaining calm under pressure. These leaders remained in their jobs over 50 percent longer than CEOs without military experience. Based on this, we can conclude that though military leadership is very different from corporate leadership, the military is an excellent training ground for business leaders.[113]

Leadership Education among US Military Branches

Other branches of the US armed forces are employing online learning in their leadership education models, creating a blend of resident and distance learning meant to provide enlisted personnel with face-to-face development opportunities and continued, non-resident development. The Navy's program is perhaps the most like the Air Force EPME program, in that the core of the education employs resident instruction, and the online portion of the program occurs before resident instruction as an introduction to the topics to be covered. As with the Air Force EPME program, these courses follow the trajectory of the enlisted person's career and encourage continued development.[114]

Though the US Army trains its leaders primarily through resident learning, it also employs a distance education program that fosters lifelong learning and continued self-development. Unfortunately, this program has come under criticism as a poor substitute for resident instruction due to its lack of social interaction—a key characteristic of successful learning in the Army. The proposed solution is to include more interpersonal learning, encouraging conversations between Soldiers around relevant content. The Army Learning Concepts document for 2015 particularly addresses making collaborative problem-solving events part of resident education. Unless the Army addresses this problem, Soldiers will continue to find the program too solitary to finish. Currently, less than 15 percent of Soldiers are on track to complete the course within their anticipated timelines.[115]

The Marine Corps is the only one of the four main military branches that allows its enlisted personnel the option of completing EPME entirely online. However, it is considering making the attendance of resident leadership courses by enlisted personnel mandatory in order to receive promotions. Driving the push for change is both

an update to the Corps' mission and troubling issues surfacing among personnel, including hazing, bad behavior in the war zone, and sexual assault. Resident courses should result in increased professionalism and discipline and will prepare younger enlisted leaders to take on more responsibilities when the Corps starts deploying smaller units. Marine leaders believe that resident leadership education will better prepare personnel for the challenges they will face. Officials acknowledge that requiring all eligible Marines to attend resident leadership education will present many challenges, including the significant cost of transporting and lodging approximately 5,600 new enlisted leaders annually. Despite this, they believe that there is no substitute for sitting down with Marines and talking to them about important leadership issues.[116]

Global Military Leadership Education

Other military organizations around the world are, or are considering, using online education in preparing their leaders for the realities of their responsibilities. Several of them have leadership education programs that closely parallel programs in the US, though because each organization's requirements are slightly different, there are still distinctions to be made between each country's military leadership education program. The US approach to military leadership education prefers in-house instruction using military scholars to facilitate active learning through student-led seminars. Students are prepared for syndicated discussion facilitated by faculty and staff, and classroom size usually ranges from 13 to 16 students. Student-centered discussion, field research, exercise simulations, and case studies are prioritized, and the US Congress requires that this sort of active learning comprises at least 70 percent of the curriculum.[117]

Similar to US military leadership programs, 75 percent of the Australian military leadership curriculum is composed of active learning activities, including student-led discussions, practice exercises based on actual scenarios, visiting lectures, and question-and-answer sessions led by students. The majority of both US and Australian leadership education is conducted through residential programs, rather than through online instruction. Still, Australia brings in more nonmilitary teachers than the US does; the US tends to primarily use military scholars.[118]

The Canadian Air Force conducts enlisted leadership education in a way similar to the Air Force's top two levels of EPME. In fact, a delegation from Canada visited Air Force EPME headquarters in 2010 to discuss an initiative between the two countries, aiming for conformity between the Canadian advanced leadership qualification course and the Air Force SNCOA. The two countries established a plan to allow service members from each country to attend the other country's leadership programs and receive full credit.[119]

The Taiwanese military is exploring the idea of using distance learning to conduct advance military education. Taiwanese officials noted that their personnel need military education but that many of them had little time to attend on-campus courses. Taiwan has considered the regular correspondence courses used by other military organizations but determined that these courses were not adequately efficient. Their proposed approach to forming a leadership education program begins by comparing their current resident curricula with available online education options to determine how to convert the resident program into an online format, but at the time of concluding this paper, the results of the research were not yet available.[120]

Some military services, however, have major concerns with using online instruction to deliver leadership education programs. While online learning management systems, such as Blackboard, Moodle, and Canvas, can make a curriculum available to a larger number of students and can make fully online learning a possibility, they can also create problems. Since it is harder for institutions to control and measure the effects of curriculum material when it is made widely available, legal and copyright issues and concerns over content control need to be addressed. Materials can be misused, misunderstood, or misapplied. Still, the preferences of younger generations for increased technology and for online connection may force military organizations to convert to online platforms regardless of these concerns.[121]

Teaching Military Leadership Online

With all of this in mind, the Air Force EPME program must consider whether—and how much—online instruction will be beneficial to their enlisted leaders. Particularly, they must consider which aspects of enlisted leadership education can be taught online effectively, and which cannot. There is a lack of consensus among Air Force education experts on how much material *should* be imparted to

learners through online distance learning. Some participants in my study thought that leadership could be taught with equal effectiveness both online and in person, while others were skeptical and cautioned that only basic knowledge should be taught at a distance. They worried that the online platform could not adequately impart knowledge and skills surrounding theories of leadership, theories of power, project management, and effective writing. For them, online teaching could only work for material that does not involve interaction and application. Based on their responses, however, they agreed that the following topics could be taught online, with a decreasing level of efficacy: basic information (such as vocabulary and general concepts), curriculum requiring little or no interaction, introductions to leadership theories, writing skills, and curriculum that does not need to be practically applied.[122]

Respondents also considered which topics should *not* be taught at a distance. Key aspects of the EPME training process currently include the application of leadership skills, experiential learning, networking with other enlisted leaders, sharing ideas with and learning from peers, and direct feedback from peers and instructors. Online education could weaken these areas, resulting in a loss of both higher-order thinking and interpersonal skills among Air Force enlisted leaders. Further, ethical considerations are harder to transmit at a distance than in person. General leadership and management could suffer, as could briefing practices, team building, and the effective feedback and guidance currently provided by Air Force enlisted leaders to their subordinates. The experts I consulted also emphasized the experiential, performance-level losses that would likely occur through online education—those gained from demonstrations, drills and ceremonies, and residential practice scenarios. Efficiency, one of the Air Force's most lauded tenets, could be irrevocably damaged.[123]

The heritage and prestige associated with the Air Force's resident enlisted leadership education program is a result of the active and social learning emphasized in its residential learning approach. Other military organizations in the US and around the world also foreground this approach, since they directly benefit aspects of military leadership that are not necessarily echoed in civilian and corporate organizations. Because military leadership requires the ability to lead in dangerous contexts and to motivate subordinates in difficult situations, military leadership education must center around interpersonal training, organizational training, exposure, and practice. The Air Force

is committed to producing transformational leaders that excel in times of crisis and danger and who connect with their subordinates personally and with care. While online instruction may be able to provide for some of our leaders' educational needs, experts are rightly concerned that distance learning of this sort could undermine the core values and skills that allow our enlisted leaders to excel.

Chapter 4

The Air Force EPME Program of the Future

Leadership in the US military, including the Air Force, must foreground the ability to respond efficiently and effectively in crisis, a responsibility that sets military leadership apart from most civilian and governmental organizations, save, perhaps, civilian first responders. Military leadership involves critical life-or-death decisions, and the acquisition of leadership skills, knowledge, and attitudes by enlisted leaders is a serious matter that, if insufficiently addressed, could have grave consequences. In addition, military leadership must be transformational, focusing on not only setting goals and expectations but also nurturing subordinates' personal motivations and development; without this form of leadership, subordinates are both less likely to trust their leaders in times of crises and less likely to reenlist. Preparing enlisted leaders to excel in these areas is therefore a priority for the Air Force, and any decision to change the mode of leadership education—including a move toward online tools—must be carefully considered.

The expert respondents in my study have indicated, in line with the above expectations placed on military leaders, that enlisted leadership education must prioritize experiential learning, the application of leadership skills, networking among enlisted leaders, and the sharing of ideas among peers.[124] These can only occur adequately in face-to-face learning situations. In discussing these priorities, respondents also emphasized the need to teach self-awareness among leaders as well as the ability to correctly and quickly assess high-stress situations. The development of interpersonal skills in the brick-and-mortar setting, as well as the opportunities provided to students there for practicing what they are learning, can make them more effective in crisis-time planning and execution.[125] As impressive as current technologies and online learning options might be, there are certain things students cannot learn by sitting in front of a computer—effective leadership in times of crisis is one of them. Leaders do not lead inanimate objects; they lead people. Personal, face-to-face interaction is key to honing the interpersonal and leadership skills necessary in high-stress environments.

Classroom-based learning offers a unique experience since learners have face-to-face interactions with their classmates and instructors.

In-class settings may also offer more opportunities for spur-of-the-moment questioning. Despite technological advances, traditional education is likely still the better option for those who thrive on face-to-face communication. When students have questions, the faculty can address them right away. Students develop social networks with the peers they meet in school. More hands-on application and group projects are offered in a resident EPME environment. Sharing life experiences between faculty and classmates occurs more readily in resident than in online situations, and doing so can be extremely valuable in preparing leaders for real-world situations. Sidebar conversations, normal for resident instruction, also significantly contribute to the learning experience.

In addition, the sense of community and face-to-face interaction experienced in the classroom can help students build personal and professional relationships. The connections learners make in class become significant resources throughout their studies as well as later in their careers. Special events that take place in resident programs, such as graduation or dining-in ceremonies, can have a lasting impact on enlisted leaders. While these things are nonacademic and entirely social, they raise morale and camaraderie and instill a sense of community pride. Online programs cannot foster these things.

Whether it is through classroom-based discussions or scientific experiments, physical classrooms offer more opportunities for interaction than online classrooms can provide. With more ways to interact with new subject matter, students may develop a deeper understanding of the curriculum, with longer-lasting retention of the material. The social component present in traditional classroom learning supports instruction, while the lack of it in online courses compromises instruction. These types of interactions humanize the educational experience in a way that online learning cannot.

Still, as discussed in chapter 3, respondents indicated that there *are* some topics that may be effectively—and perhaps more successfully—taught through online learning; these include vocabulary, basic concepts, introductions to theories on leadership, writing skills, and other topics that do not require face-to-face feedback or practical application.[126] This, along with the lowered costs of distance learning, suggests that a blended approach that employs both resident and distance learning may be most advantageous for the Air Force EPME program.

However, this is not a decision to be made lightly. If enacted without adequate preparation and research, online learning could drastically curtail leadership effectiveness. A reduction in interpersonal training, in particular, could lessen effectiveness in the field, limiting the ability to achieve organizational goals. Respondents frequently noted that the lack of residential education could jeopardize the social aspects of the program, such as team building, networking, peer interaction, feedback, and guidance. In addition, the application knowledge developed from in-person demonstrations, practice, and situational leadership application activities could also suffer.

Participants expressed that the development of leaders is best accomplished through application-based education, where leaders practice and demonstrate their learned skills in a collaborative learning environment. By applying leadership theories in real-world scenarios, and in receiving feedback from peers, enlisted leaders gain confidence in their leadership abilities. The confidence gained from peers in the collaborative learning environment promotes ongoing leadership development. The study's participants commented that role-playing, reflective practice, and feedback helped to develop and refine leadership styles and effectiveness, building long-lasting and supportive relationships. For enlisted leadership education to be effective, an environment conducive to application-based learning is essential.

One participant strongly emphasized that the learning *environment* in EPME is key, and that its protocols, social events, networking opportunities, and collaborative structure provide experiences and tools inaccessible from an online platform.[127] These experiences are fundamental for the success of EPME training. Many respondents were skeptical about how the interpersonal aspects of EPME could be reproduced online; as one participant pointed out, online "chat rooms" are a poor substitution.[128] The use of digital platforms could cause a team-building blockage, as peers would be prevented from fully interacting with each other and therefore from establishing networks and forming support groups.[129]

Adding an online platform to EPME could also damage the program's credibility, hurting perceptions of the program and its trainees. Senior leaders might be less confident of enlisted leaders who have had less interpersonal and practical training than those who came before them. Enlisted leaders could be perceived as less credible both inside and outside the Air Force. Respondents predicted that some of this negative perception would also be due to the assumption that the

experts behind the EPME program cared more about saving money than about their trainees and the quality of their education. As one respondent commented, moving to an online platform could "diminish [EPME's] credibility because it shows a greater concern for cost savings than it does for creating an environment in which students are there solely to learn and develop."[130] Any move to even a partially online program would need to address these issues.

Another fear among respondents was a general decline in leadership skills among enlisted leaders due to loss of motivation; students as a whole are often less engaged in online learning situations. Respondents argued that students could find it hard to focus and remain dedicated to their online studies, particularly if the studies were conducted alongside their regular professional and familial duties.[131] A reduction in motivation at the educational level could then lead to a decrease in the desire to lead and a reduction in the enlisted leader's commitment to the service.[132]

Finally, there was a concern that a transition to an online learning platform could be unduly difficult for the few enlisted personnel who lack the technical knowledge such a switch would require. Though enlisted leaders will need to become comfortable with current technologies and software regardless, some participants many have difficulties in this area. Age, for instance, may translate into a reduced experience with technology; younger personnel have been born into a digital world, and, as Sue Bennet, Karl Maton, and Lisa Kervin have pointed out, the "immersion in this technology-rich culture is said to influence the skills and interests of digital natives in ways significant for education."[133] While they were fairly confident that most students would not struggle in this area, respondents indicated that providing support to less-experienced students is paramount and that assessing students' comfort level with computers and online learning systems before they begin will be an important step in this direction. They also suggested offering a preenrollment navigation course to ensure personnel are able to navigate the system before they start classes. Further, online tools should be adapted to suit individual differences in learning styles and technological expertise; one respondent commented that "everyone learns differently, and to be effective, learning styles should be targeted to the extent possible."[134] This approach is in accordance with the reservations and suggestions of other researchers regarding online and blended learning outcomes.[135]

A 2014 study commissioned by Everest College found that of 1,000 adults surveyed, slightly more than 52 percent believed hands-on education was the best way to learn. Watching visual presentations ranked second. Collaborating with other students and learning through teaching others were also preferred methods. The survey shows people still crave interactivity and engagement.[136]

In 2006, the Emerald Group conducted a study—published in the *International Journal of Information and Learning Technology*—that concluded online learning can be improved by providing instruction consistent with each student's learning style. The four distinct learning styles identified in the study were visual, aural, reading/writing, and kinesthetic. The study indicates students with auditory learning preference do not select online education as their first choice for learning.[137] This is something the Air Force should thoroughly consider in developing online courses.[138] The conclusions made in this research emphasize that instructors must understand how students learn, how they perceive, and how they process information. Students' learning styles must be identified so the instructor can plan teaching strategies to accommodate individual strengths and needs. The teacher must share information about learning styles with students as well as help them understand their personal style and their own learning process.[139]

Despite these concerns, the benefits of online learning—especially in presenting noninteractive and nonpractical material—combine with its cost effectiveness to make it worth serious consideration.[140] To be clear, for the majority of respondents, financial issues were the least important factor or at least a nondeterminant factor when considering whether a transition to online learning should occur and how that transition should be structured. Only two respondents out of 18 thought that cost should be *the* determining factor in whether online education was adopted by the Air Force EPME program. However, financial factors are not insignificant (the introduction to this paper presented some of the primary issues at play in the armed forces' need to shrink their educational budgets).[141] In addition to reducing costs, online education—even in a blended situation that mixes residential and distance learning—can lead to a more efficient use of time, reducing the overall length of the EPME program, and might appeal to a younger generation of leaders who are more comfortable with online platforms and digital learning.[142] Younger learners prefer faster learning speeds, a more visual approach, and greater active engagement.[143] They also tend to be more stimulated by

digital, online platforms, and incorporating technology can better captivate their interest, transmitting information in a way they can more easily grasp.[144]

Taking all of the above into account, as well as the argument laid out in the entirety of this paper, the most effective choice is to transition the Air Force EPME program into a blended program, mixing an in-residence, face-to-face environment and an online, digital platform, according to the strengths of each approach. Online teaching is insufficient, in and of itself, but could be successfully integrated into the residential program. The residential part of the course could allow students to continue acquiring interpersonal skills (e.g., team building, networking, and feedback), which are difficult to develop in online environments, and to practice, experience, and apply critical and complex leadership skills (e.g., transformational leadership, crisis leadership, and self-awareness). The more cost-effective online platform could be used to transmit theoretical information and simple, noninterpersonal knowledge and skills. Together, a blending of residential and online learning could not only alleviate budgetary concerns for the Air Force but also produce a learning experience that better equips enlisted personnel for the special demands of military leadership.

Next Steps

The online aspect of such a problem should not be implemented without further research and a careful plan for transition. First among these considerations is a thorough cost-benefit analysis. Residents who did not prioritize financial concerns in the consideration of online education in EPME, and who were more concerned about the efficiency of the process and the leadership it produces, indicated that "long-term" and "invisible" (or unforeseen) factors should enter this analysis.[145] If, for instance, the value and influence of EPME ends up suffering under the inefficiency produced either in the transition toward blended learning or through the failure of blended learning, the cost—both in terms of quality leadership *and* in terms of financial loss—of implementing a blended program could be disastrous and long-term.[146] Unless the cost-benefit analysis determines that a switch to a blended program will actually save the Air Force money, it should not be implemented.

When considering the cost benefits of online over resident education, most educators mark reduced travel costs, flexible scheduling, greater

access, and greater scalability as the primary advantages of online learning. Students save time as they no longer must drive to campus, buy parking permits, and walk to classrooms and libraries. Learners usually have access to materials such as lectures and library resources 24 hours a day, seven days a week. Technologies and digital sources such as social network sites, blogs, wiki sites, online communities, and video telecommunications options provide opportunities for students to interact with instructors and other students from great distances. Online instruction can be delivered instantaneously around the world, removing limitations on geography and time. Access to new markets means the same courses can be used to educate more people, thereby increasing the scalability of online courses.

However, when considering the cost advantages for online instruction, some areas are often overlooked. There are a great many caveats concerning the cost of technology within education. It is not driven simply by the cost of hardware and software. The working practice of the software itself must be included and is perhaps the most important factor in determining true costs. It is also important to consider whether and how often web technologies are used to create interaction between instructor and students, and instructors facilitate and monitor student-to-student interactions.

Researchers must also consider cost variations. A joint study conducted by Indiana University, Purdue University, and Ball State University on the cost effectiveness of online education found the cost varies substantially from one situation to another and is influenced by many factors. Generally, cost increases as the number of students increases and the number of courses declines. Another challenge in dealing with the variability of costs is the variability of faculty and the balancing of faculty-student ratios, since to achieve satisfactory faculty-student interaction classes typically need to be smaller and are therefore costlier.[147]

More difficult to determine are hidden costs. When attempting to calculate the cost of online education, particularly when trying to compare online costs with the cost of other forms of education, there will usually be unaccounted costs. These can distort the basis of comparison. The cost of the established method is usually well understood, whereas the cost of the emerging method may not be. Comparisons of this type therefore tend to understate the costs of the newer method.

Another reason researchers assume that online education is less costly than resident instruction is that online instruction does not require classroom space. This assumption neglects the fact that instructors will need space to record lectures for viewing by students. The cost of recording and editing equipment should also be considered. The staff to record and edit, as well as the necessary facilities, must be considered. Researchers must also consider whether testing will require the use of a proctor.

According to a joint report from Indiana University, Purdue University, and Ball State University, "For more progressive online course models at Purdue, an upfront course conversion effort is required. Generally, 10 hours of development are required for each hour of instruction, and these hours may be distributed among an instructor and instructional development personnel. The development of a three-credit course may represent about 450 hours of effort . . . ."[148] Indiana University and Purdue University both reported that the effort spent updating and revising online courses is more time-consuming and expensive than for traditional instruction. For a traditional course, the instructor generally works alone modifying the lecture notes. Revising an online course requires the involvement of various technologies and, often, instructional support staff.[149]

For this reason and more, the transition to a mixed-residential/online EPME program should be gradual and reliant on further research. In addition to the aforementioned cost analysis, program planners and administrators must prioritize the needs of military leadership education and ensure that effectiveness in both the learning program and the ultimate leadership abilities of participants will not be adversely affected either because of the transition or during it. Credibility concerns must also be addressed, as senior leaders must be convinced that the enlisted leaders trained in this program are prepared for their duties, and both the civilian sector and the enlisted leaders' subordinates must be able to trust these younger leaders. Preparing students for the technological demands of the blended platform will be another concern and should include both an assessment of current abilities and an introductory course on navigating the online portions of the program. Finally, the Air Force EPME will need to invest in the new educational materials and technology necessary for this new approach; failure to be prepared on this front could have long-term negative effects.

Decision makers must conduct research on the best methods and technologies for online and blended education. Instructional technology experts will need to construct a new online platform, and course materials and structures will need to be reorganized for online dissemination and student testing. My respondents agreed that the quality of the education and the efficiency of the learning process are the most important factors in this process and that existing online materials and tools already need to be improved, as they do not yet meet the quality and efficiency of the current EPME residential program. As experts in education have noted, designing quality online materials and platforms is difficult.[150] The evaluation of EPME's current online materials and the development of new, intuitive, and functional online designs are necessary.

In addition, in preparation for this transition, further research on all of the issues presented in this paper must go beyond my preliminary, qualitative Delphi survey to include quantitative surveys of a larger informant group, as well as several pilot studies to identify the multiple variables that will affect the quality of the blended education and its micro-, mezzo-, and macro-results. The nature of my study had limitations due to the limited number of respondents involved (18) and the inability of these respondents to comment beyond the purview of the questions asked or to clarify the various relationships between these questions. Future studies will need to be constructed to address these limitations, and the higher-order issues identified so far will need to be addressed in research and planning prior to taking any concrete steps toward reorganizing the program.

This study was aimed at clarifying whether the Air Force's EPME program could successfully transition to an online format, in order to ease budgetary concerns. The hypothesis stated that the study's findings would support the equivalency of learning theory—that students would learn equally as well online as in a face-to-face, residence program. However, respondents to the questionnaires made it clear that, at least for the present, a complete transition to an online format is inadvisable. There are skills, knowledges, and attitudes that simply cannot be taught online without significant losses in leadership and organizational performance. Instead, Air Force education leaders should consider and further research a transition to a blended approach that utilizes both brick-and-mortar education and online platforms.

Conclusion

The looming specter of budget cuts has endangered the Air Force EPME program, a series of courses that provide essential education to enlisted military leaders. As such, directors of the Air Force education programs have had to consider alternative learning platforms. Some have gone as far as to advocate replacing all resident programs with online instruction, removing the interactive, interpersonal component of the existing resident program.

A fully online program, however, will not meet the needs of the Air Force's enlisted leaders. Military leadership requires that an individual be not only a transformational leader—invested in his or her subordinates' successes *and* professional growth—but also an effective leader in times of crisis. This requires that leaders have impeccable interpersonal, communication, and team-building skills, as well as effective and adequate practice of crisis leadership skills, through face-to-face discussion, role-playing, and simulations. Higher-order skills, including the ability to quickly and sufficiently assess all responses to a crisis, are essential for successful military leaders.

However, there are topics in the Air Force EPME program that may be adequately, or even more successfully, transmitted through an online learning platform. These include basic and below-application-level skills and knowledge, such as vocabulary, leadership theories, and introductions to basic topics. The only practice-related exception to this rule is the teaching of writing skills, which may also be effectively taught in a digital environment.

Based on research and my qualitative Delphi study, which involved 18 experts in military leadership education, it is evident that the best choice is to move the Air Force EPME to a blended program that continues the highly successful and respected residential program but also employs online learning where it can be most effective. This choice would require both further research and a slow and considered transition. A number of issues must be more adequately addressed, including a thorough cost-benefit analysis, a consideration of how to build a blended program that ensures the continued effectiveness of EPME and its graduates, and a plan for preparing incoming students for the new, technological aspects of the program. One concern is that some students may not yet have the technological skills necessary

to excel in this new environment. Another is that others may lose motivation due to the less social nature of online learning. All of these issues must be considered and adequately addressed to ensure that the Air Force EPME program does not lose credibility in the eyes of the program's students, the civilian sector, and senior Air Force leaders.

In the end, a blended Air Force EPME program, which retains its current residential structure but employs online courses for lower-order and noninterpersonal topics, appears to be the best solution for the Air Force's budgetary concerns. This approach has the potential to reduce the program's costs while also making it more time-efficient as well as more stimulating for younger generations of leaders who thrive in a technologically rich culture. More importantly, it prioritizes the program's primary goals: producing transformational leaders who are skilled in team-building; fostering their subordinates' professional and personal growth, creating essential contacts across their professional landscape, and teaching enlisted leaders to perform effectively and successfully in crisis situations. The Air Force must motivate and equip its enlisted leaders to excel in times of peace and peril.

Appendix: Research Methodology and Results

The purpose of the qualitative, modified Delphi study, conducted in 2015, was to determine if the Air Force's enlisted leadership education program could be converted from resident instruction to an online platform while still achieving the desired learning outcomes. The lack of existing empirical data on whether enlisted professional military education (EPME) can be conducted effectively through a fully online platform made it necessary to seek an alternative form of evidence—expert opinion. The research was structured as a Delphi study, using a series of three questionnaires designed to obtain agreement on several issues from among a panel of experts—participants with expertise in enlisted leadership education and personnel experienced in administering Air Force educational programs. This appendix provides an overview of the methodology and design of the study, as well as its findings.

Rationale and Appropriateness of Design

This research project aimed to determine if the Air Force can convert the educational program for enlisted leaders from traditional resident instruction, used by the Air Force for over 40 years, to an online platform. The study was designed to determine whether learning outcomes could still be achieved through online instruction, or if enlisted personnel would instead be rendered less effective leaders, jeopardizing the service's ability to accomplish its mission. The design of this study is similar to the design described by Matthew R. Hallowell and John A. Gambatese in 2010 and Johann Steurer in 2011, a qualitative methodology that systematically assembles beliefs from among a group of experts in the issue being investigated.[151] The current research was best achieved using the qualitative method described by Ruth McNeil, because the goal was to collect the descriptive opinions of participants through open-ended questions and then analyze this textual (rather than numerical) data.[152] The flexibility in design offered by a qualitative approach was another benefit of this method, since participant responses played a role in determining whether additional questions needed to be asked or if some answers needed further clarification.

The Delphi method in particular has proven effective in gaining consensus among experts.[153] In the business sector, accurately predicting

the future of demand, cash flows, and other factors is crucial. Quantitative forecasting methods, however, are in many instances not an option, because historical data is typically not available. This makes projecting the effects of a new project using quantitative methods nearly impossible. In such cases, qualitative methods like the Delphi method can instead provide reliable forecasts.[154] It provides a technique for studies in which the problem cannot be addressed through precise analytical techniques and can only be solved by using the subjective judgments of a collective group.[155] Leaders in many disciplines have used Delphi studies; faculty at the University of Nebraska, for instance, used a Delphi study to measure the quality of education delivered through distance education programs.[156] This technique was used in this study because it facilitates the collection of expert opinions and analyzes the data in a way that leads to a consensus.[157]

The lack of previous research on the topic also suggested that a modified Delphi technique would be most beneficial.[158] Considering the absence of empirical evidence for using an online platform in enlisted leadership education, an effective alternative was to seek the expert opinions of highly experienced individuals in the field of Air Force education. These expert opinions provided data for Air Force leaders to consider in choosing whether to convert the EPME program to an online platform or to continue teaching the program using resident instruction alone.

Another option was the Nominal Grouping Technique (NGT). NGT is a group process that incorporates the creative features of brainstorming into a controlled framework for needs analysis, problem solving, and decision making. The process consists of four steps: (1) generating silent ideas for recording, (2) using the round-robin process for sharing and recording each idea, (3) discussing and clarifying each recorded idea, and (4) voting and assigning weights to each idea.[159] This structured decision-making process is similar to the Delphi method, and many researchers consider it an effective brainstorming process; however, NGT requires members to be physically present with a facilitator. This was not feasible for this study.

In addition, the heterogeneity of participants needed to be preserved in order to ensure the validity of the results. It was important to avoid letting individuals with strong personalities dominate the discussion (i.e., the bandwagon effect).[160] With the Delphi method, participants generate ideas silently and individually, producing a greater number of ideas. Responses are more valuable because participants write

them at their own convenience rather than under a time constraint. This flexibility makes it more likely that participants will think critically through each problem. Because participants are anonymous and isolated, they can provide responses without pressure from other group members.[161]

The instrumentation and data collection for this research was also based on the Kirkpatrick Evaluation Model, an approach favored by Air University.[162] This model recommends evaluating the effectiveness of education in four phases. Phase one is the reaction phase; the goal of this phase is to gauge how students feel about the education or learning experience.[163] One important area of focus was how students reacted to the idea of online instruction for the EPME program compared to how they currently react to the residential EPME program. The purpose of this portion of the research was to predict whether these reactions were the same or different and, if the latter, whether the students' reaction to online learning would impact learning outcomes.

The second phase of the Kirkpatrick Evaluation Model is the learning phase, in which the objective is to measure students' increase in knowledge, based on the education or training experience.[164] Again, in this study, research questions were aimed at predicting whether learning using an online platform to teach EPME would be equally as effective as the current classroom instructional method.

The third phase of the Kirkpatrick Evaluation Model is the behavior phase, which evaluates the extent to which learners have applied the knowledge gained from the course in work situations.[165] In the case of the current research, the aim was to predict whether EPME graduates would be as capable to apply leadership skills they learned through online instruction as those gained in resident instruction.

The fourth and final phase of the Kirkpatrick Evaluation Model is the evaluation phase. Evaluating the results helps organizations determine how educating the learner improved the overall organization. In the case of the current project, the goal was to predict the overall impact converting this education from the traditional resident instruction to online instruction would have on the leadership abilities of Air Force enlisted personnel.[166]

The Delphi Method

When the goal of a research project is to collect facts relating to human behavior that, when accumulated, verify a theory that allows the researcher to predict an outcome with certainty, it is best to use a quantitative methodology. Conversely, when the goal of the research is to gain a better understanding of human behavior and to gain knowledge of how people construct meaning, a qualitative method is best.[167] The goal of this project was to develop a recommendation for future decision making based on expert opinion; therefore, the latter approach was best. In particular, this research was conducted using the Delphi technique. Nicola Clibbens, Stephen Walters, and Wendy Baird define the Delphi technique as a "[h]ybrid survey design that aims to reach consensus on important issues. It is characterized by a specific sequence of events: response of an expert panel, formulation of questions, generation of statement of opinion, reduction and categorization, rating analysis and iteration."[168] Zachary D. Cole, Holly M. Donohoe, and Michael L. Stellefson further summarize that the Delphi technique is "a group method that is administered by a researcher or research team who assembles a panel of experts, poses questions, synthesizes feedback, and guides the group toward a consensus."[169]

The Delphi technique originated in the 1950s, when the Air Force asked the Rand Corporation to develop a method for gaining a consensus of opinion from a group of experts to determine how the Soviet Union might launch a potential military attack against the United States.[170] Since its original development, researchers have used the Delphi technique to resolve other issues, objectively establishing a consensus on how to approach complex problems. The Delphi technique is a way to obtain solutions for difficult issues when there is no accurate, concrete data available.

The traditional Delphi technique usually starts with the development of a set of open-ended questions on the research problem. These questions are presented to a panel of experts, and their answers are analyzed and summarized before being redistributed to the experts so that they can clarify any areas in which they disagree. The modified Delphi technique used in this project differs from the traditional Delphi technique because the first-round questionnaire consists of planned questions based on information found in the literature

review. Researchers have noted that this modified Delphi technique is fitting if secondary literature is available.[171]

The Delphi technique offers many advantages, as described above. It allows researchers to administer questions in writing rather than in person, which enables participants to respond at their convenience. This also allows contributors with varied credentials and in distant locations to participate in the study, leading to a larger panel of respondents who together can formulate a better decision. Administering the questions in writing rather than in person also helps keep the focus on the issue.

Another advantage of the Delphi method is that it increases confidentiality, and this confidentiality helps avoid many communication barriers. Participants can remain anonymous, which encourages them to freely provide information they might otherwise be reluctant to reveal. Anonymity prevents those with authority and those with forceful personalities from dominating the process. It helps prevent groupthink, in which one or two people end up manipulating the direction of the conversation.

The steps of the Delphi technique are as follows:

1. The moderator develops an initial questionnaire and distributes it to a panel of experts.
2. The panelists independently generate ideas as they answer the questionnaire and return it.
3. The moderator summarizes the responses to the first questionnaire and develops a feedback report and a second set of questions for the panelists.
4. Having received the feedback report, panelists independently evaluate earlier responses and vote on answers to the second questionnaire.
5. The panel ranks the response from the second set of questions and the moderator develops a final summary and feedback report, distributing it to the group.
6. Variations of the basic technique include:
    a. The number of iterations.
    b. The method of response.
    c. The size of the panel—anything from five or six respondents to several hundred participants.
    d. The scoring system and the rules used to aggregate the judgment of the panelists.

e. The extent of anonymity afforded to the panelists.
f. How consensus is defined and how to deal with disagreements.[172]

Research Focus

This study prioritized the following research questions:

RQ1. What aspects of EPME, if any, can be achieved best using an online platform?

RQ2. What aspects of EPME, if any, cannot be achieved using online instruction?

RQ3. What aspects of EPME, if any, can be achieved best using traditional classroom instruction?

RQ4. What aspects of EPME, if any, can be achieved equally effectively using either online or classroom instruction?

RQ5. What negative impact, if any, will converting to an online platform have on enlisted personnel's ability to lead if desired learning outcomes cannot be achieved using online instruction?

Research Design

This research project consisted of three phases. First, a panel was selected from a group of Air Force EPME graduates, EPME faculty, and educational program administrators (see "Sampling Frame and Population" below). The EPME graduates were personnel who had completed the senior level of EPME and have spent at least two years applying the leadership skills they learned in the EPME leadership course in their Air Force assignments. EPME faculty were personnel with two or more years as current or previous EPME faculty members, who taught EPME at the senior level. Educational program administrators were personnel who had experience managing or directing an Air Force educational program.

During the first phase, 18 participants completed the first round of a three-round survey. Through an online survey platform, participants answered seven demographic questions, nine open-ended questions, and one commentary question. Answers to the demographic questions helped in analyzing the results of the data collected.

(It was useful to know whether certain responses were unique to certain age groups. It also was helpful to know if graduates, faculty, or administrators perceived the situation differently by category.) Codes assigned to identify participants were used to send reminders to those who had not responded to the questionnaires or to ask for clarification if needed.

For the second phase, the summarized answers from the first round were sent to the participants, and they were asked to select the top five responses to each question. In the third and final phase, the top five choices for each of the nine questions were sent back to the participants, who were asked to rank the responses in order of importance using a numerical scale from one to five.

Sampling Frame and Population

The sampling size for Delphi studies varies widely, since the expertise of participants is a more important consideration.[173] In order to ensure the credibility of this study, all participants had to have a significant amount of experience in education and enlisted leadership, so the panel was drawn from those with experience in administering Air Force education, in teaching senior-level EPME courses, or as a senior-level EPME graduate.

Because graduate personnel have completed all levels of EPME and have served in positions where they applied educational practices learned in real-world situations, they were considered experts for the purpose of this study. Their experiences allowed them to determine which aspects of the EPME program are or are not effective. Expert faculty members, with two or more years' experience in delivering instruction or developing enlisted leadership curriculum for senior-level EPME, were also considered experts, since they are familiar with how students perceive the curriculum. The administrators who manage this curriculum often serve as members of think tanks themselves and are prepared to make recommendations regarding the effectiveness and efficiency of existing programs. They have experience conducting field evaluations to this end and often receive feedback from, and provide advice to, senior leaders as well.

The sample was selected from Air University, the school that teaches senior-level EPME. Most EPME faculty are at this location. Since this location is the educational center for the Air Force, many

program administrators work there and are experts in developing and delivering online and resident instruction.

The population for this study was thus Air Force EPME graduates, EPME faculty, and educational program administrators who work with senior-level EPME programs at Air University. The university's chief institutional effectiveness officer granted permission for these individuals to participate in this project. The Maxwell AFB global access network (GAL), which contains contact information for all personnel who work at Air University, was used to select participants. None of the population for this research were in any of the protected research categories.

The GAL presented approximately 40 people located at Air University who would most likely possess the qualifications and experience required for this study. Of these 40 people, 32 responded, and 28 of the 32 possessed the qualifications necessary. All 28 potential participants were contacted by email or telephone to discuss the nature of the study using an interview protocol that explained the purpose and design of the study and that provided a letter of consent that explained the individual's right to participate, or not participate, in the study. This letter also described how confidentiality would be maintained and how to withdraw from the study at any time during the process. Those who agreed to participate in the study were sent a link to the Allegiance software program used for the survey questionnaire.

This study used a combined purposive selection and stratified sampling technique, which helped to increase the probability that all categories of the population would be included.[174] This is an especially useful sampling method when participants must be selected for their expertise in a specific area.[175] Purposive selection is a procedure used in qualitative research that allows the researcher to choose participants with the expectation that each person has valuable information to contribute to the study.[176] This research required experience in enlisted leadership education, online instruction, traditional instruction, and overall Air Force education.

In the end, 18 voluntarily consenting participants contributed to this research. The majority were male (N=12, 67%) and older than 45 years old (N=13; 72%). Others were either female (N=6; 33%) or between the ages of 36 and 44 (N=5; 28%). Panel members' affiliations with EPME included deans, instructors, curriculum writers, and graduates of the program. Their job titles varied and included

dean of academic affairs, academic instructor, curriculum writer, information technology specialist, instructional system specialist, educational course director, training manager, and chief of business operations. Seven of the 18 participants held the highest Air Force enlisted grade of chief master sergeant.

The education level of the panel ranged from associate's degree to doctorate; two participants held an associate's degree, two held a doctorate, six held a bachelor's degree, and eight held a master's degree. Nine of the participants were previous faculty members who currently held administrator responsibilities. Five of the participants were distinguished only by being graduates of the EPME program. Four participants were current or former faculty members. Only one participant did not have online course experience.

The survey had 10 questions, wherein the last requested additional commentary. All questions were answered in full by every participant, and 10 participants offered additional commentary in the last question of round one of the survey.

Confidentiality

After receiving institutional review board approval, each potential participant was sent a copy of the informed consent letter, confidentiality statement, and interview protocol. The interview protocol addressed how the research would be conducted. The consent letter explained the prospective panelist's right to participate in the study and their right to withdraw at any time during the research. The confidentiality statement explained how identification would be maintained and how the data would be stored to protect each individual's identity. Furthermore, participation was voluntary, and all panelists signed a consent agreement before participating in any part of the study.

To ensure the participants' privacy, the selected panelists were assigned participant number codes for tracking purposes. Each participant was responsible for entering their assigned participant number in each survey so that their feedback would be anonymously attached to them. To protect their identities, only the researcher had access to the documentation used to assign participant numbers and track responses. This information was locked in a container and maintained in the researcher's office for a period of three years, after which it was destroyed.

Publications of this research will not include any information by which participants may be identified, including names, characteristics,

questionnaire responses, incidental comments, or other information accrued either directly or indirectly. No material regarding the research project or its participants will be discussed in places where such discussions might be overheard. All information pertaining to this research will be protected to prevent any confidential material from being accessed by unauthorized persons.

The Pilot Study

Before being used in this Delphi study, the nine survey questions were tested with a pilot group. Pilot studies serve several purposes, but the purpose of this one was to test the adequacy of the research instrument, establish whether the sampling frame and technique was effective, and collect preliminary data. The pilot study also assessed the validity of the projected data examination methods to determine potential problems.[177] The changes made to the study's nine questions, based on the pilot study, were the addition of geographical questions, more thorough definitions of terms, and the addition of demographic questions regarding the participants' education level, age category, gender, job title, and EPME affiliation.

Study Rounds and Data Collection Procedures

In this study, data was collected using a sequence of survey questionnaires—a set of continually narrowing surveys that first brainstormed for central factors, then reduced the list of responses to the most significant ones, and finally classified the responses by the most important factors. The surveys were disseminated via the Allegiance software program, a program similar to Survey Monkey, but with interface features that allow for data transfer and manipulation through several other software programs. This is software currently in use by Air University, and because Air Force members are familiar with this instrument, their responses were more likely to be timely and complete. The survey program also has tracking devices that allow participants to remain anonymous while still permitting automated reminders and messaging as well as the "scrubbing" of responses to remove any personal identifiers. Individual participants' responses were tracked and anonymized through each round and then compared to their own responses from previous rounds. Each Allegiance survey disseminated within Air University must be approved by Headquarters Air Force annually and assigned a survey control number, verifying

that the survey meets Air Force standards and that the researcher is not collecting information that may damage individuals or harm the reputation of the US Air Force.

After the pilot study verified that the questions and the instrument were valid, current and former EPME faculty, graduates, and educational program administrators were invited to join the study, allowing for multiple perspectives. In the first round, the panel answered seven demographic questions, nine research questions, and one open-ended commentary question. Delphi studies with numerous steps and reiterations are much more time intensive than traditional surveys; therefore, an effort was made to keep the time necessary for completing the survey to 30 minutes or less.

The second round asked the same questions from the first phase, but participants were asked to choose what they felt were the best five answers from the most frequent responses (between five and 10) gathered in the first round. The results of the second round thus narrowed the group's responses to answers most agreed upon. This second set of responses provided the baseline for the last round.

In the last round, participants ranked the results from the second round using a scale of one to five, with one indicating what panelists felt was the most important answer and five indicating what they felt was the least important. This ranking was consolidated into one document and demonstrated that the group of experts had reached a consensus. The three rounds of surveys can be seen at the end of this appendix.

Data Analysis

Data analysis was qualitative and thematic. A naivety approach was adopted, since it prevents bias and highlights surprising or unexpected results. The process was inductive and iterative, as well as aided by the qualitative data analysis software, NVivo10. It aimed at identifying what was important for interviewees by means of themes and subthemes.

The main steps were:

a. **Immersion and coding per question**. Repeated reading and line-by-line coding of the transcripts were completed. Codes were simultaneously descriptive and interpretative. The participants' key emphases were detected at this stage.

b. **Theme formation per question**. Questions led to themes. For each question, codes generated during the previous stage were organized into a thematic structure. Given that the data per question was not extensive, there were at most two levels of analysis: (1) subthemes (mid-level categories, descriptive of the qualities of the theme or question); and (2) categories (low-level codes, less abstract and encompassing). The objective was to accurately communicate the views expressed and detected by the codes.
c. **Narrative**. The information was translated into a narrative for each question. It aimed at efficiently communicating the findings.
d. **Overall thematic conclusions**. An overview of the most recurring findings was delineated and transformed into a concluding narrative.

Trustworthiness

The NVivo10 software increased trustworthiness by facilitating coding, consistency checks, and triangulation. The project's naïve approach also helped in this regard; however, the small amounts of data used in this study as well as the slight repetition of findings across questions increased the possibility of error, since greater amounts of data may be more trustworthy due to an increased recurrence of similar ideas in the overall transcripts. For example, participants made multiple references to the benefits of mixed residential and distance-learning approaches, yet this idea only became a distinctive subtheme in question nine. Thus, each subtheme and the overall analysis provided by the project might become clearer if a numerical data analysis approach is taken in the future. Some scattered ideas might even emerge as subthemes in such a case.

Findings

Question 1: Which ASPECTS of EPME, if any, are best taught using resident instruction?

In round one, three subthemes emerged: *certain areas*, *certain techniques*, and *differential beneficial effects*. Generally, participants highlighted *certain areas* and *certain techniques* and skill levels that benefited from residential education. The most frequently mentioned

areas were: communication, leadership, management (including conflict management), team building, and problem solving. The most frequently mentioned techniques, important if not critical for learning leadership skills, were role-playing (including experiential learning), interacting and sharing (via, for example, guided discussions and case studies), and practical applications (including demonstrations, lectures, and drills). Note that these two aspects are not necessarily independent. For example, the communication area often involves receiving and giving feedback about lectures and briefings. This was also coded as a technique.

The majority felt that some aspects of the EPME program benefited from residential learning (e.g., "Any subject matter taught at the application level or higher of Bloom's taxonomy" would benefit). That is, residential teaching had *differential beneficial effects*. These effects varied in accordance with the adopted teaching techniques, the course content, and the cognitive development level aimed for in the program.

In round two, participants more often highlighted interpersonal aspects (encouraging peer and instructor interaction, teaching communication skills, and facilitating team building) and practical aspects ("teaching curriculum through role-playing" and "teaching curriculum through practical application"). There was one additional aspect which can be regarded as partly interactional and partly content related that was less frequently indicated: teaching new leadership concepts.

Round three confirmed this analysis. The descending order of importance of the five selected interactional or practice-related aspects were: "teaching curriculum requiring practical applications," "encouraging peer and instructor interaction," "teaching curriculum involving role-playing," "facilitating team building," and "teaching communication skills." These should be the principal aims and outcomes of the residential course.

Question 2: Which ASPECTS, if any, of military leadership can be taught equally effectively using either online or resident instruction?

In round one of the survey, three subthemes emerged: *lack of consensus*, *basic information*, and *nonapplication and noninteraction levels*. There was a *lack of consensus* about the extent to which the course could be taught online. For a significant number of participants, however, online courses could successfully teach *basic information*:

"basic knowledge," vocabulary, and general concepts. In these lower-order areas, the "myriad of examples" already being provided during resident education could be made available online. Other areas cited as sufficiently teachable through online courses by some participants were leadership (including theories and styles), power, project management, and effective writing. According to other participants, online teaching would only work for material that did not involve interaction and the application knowledge and skills (*nonapplication and noninteraction levels*). There was also one participant who argued that "aspects of instruction [that] require major integrated media teams supporting the employment of air, space, and cyberspace power" could benefit from online teaching as well.

In round two, participants highlighted nonpractice and noninterpersonal issues ("teaching curriculum requiring little or no interaction" and "teaching curriculum below the application level"). This reinforced the idea that practice and interactional aspects were not suitable for online teaching. The only exception was teaching writing skills. Respondents added that both residential and online teaching were suitable for passing along both simple and more complex theoretical information ("providing basic information" and "introducing leadership theories"). Only one participant claimed that resident instruction should be applied to every aspect. This suggests that the majority agreed that online instruction could be effectively used in some instances.

Round three confirmed these findings. The descending order of importance of the items ranked was: "providing basic information," "teaching curriculum requiring little or no interaction," "introducing leadership theories," "teaching writing skills," and "teaching curriculum below the application level." The first choice made by the respondents frequently fell into the "providing basic information" category, reinforcing their consensus about the suitability of online methods for such purposes.

Question 3: In what ways, if any, do you think military leadership differs from civilian or corporate leadership?

In round one, there were two subthemes: *similarities* and *differences*. The differences subtheme further included three distinctive categories: *environment and organizational structure*, *execution*, and *training support offered to leaders*.

Some participants emphasized the *similarities* between military and civilian leadership (e.g., "Leadership is the same anywhere."). One participant went further by identifying some of the areas that were equal in both arenas, including vision, competencies, and outcomes. However, at closer inspection, even the participants who highlighted similarities also noted the differences between military and civilian leadership.

For the most part, participants identified significant *differences* between civilian and military leaderships. Specifically, they noted that military structures differ in *environment* and *organizational structure*. Panelists highlighted, for example, differences in structure or hierarchy weight. The rigid and defined military rank structure, with its hierarchical quality, affects the environment of the Air Force. One participant noted that this was efficient ("Rank structure is important in military leadership. It often facilitates getting things done without so much 'red tape'"). Moreover, participants noted that both leaders and followers in the military are more disciplined, committed, self-controlled, and accountable for their actions. There is also an environment of camaraderie. Although, this environment could sometimes be understood or experienced as coercive and could generate hostility on the behalf of followers.

Military and civilian leaderships also differ in the *execution* of leadership. Namely, the seriousness of the leaders' decisions—the difference between life and death in some cases—in the military is greater than those in the private sector. Therefore, wider scope, precision, and attention to detail are necessary.

In round two, only one participant expressed the view that there are no differences between civilian and military leadership; all others highlighted existing differences. The most commonly chosen were related to the type of attitude military leaders should adopt ("military leadership is more structured," "military leadership requires more self-control," "military leadership requires more accountability," and "military leadership requires more discipline"). In brief, they expressed that military leaders are obliged to take a more direct and strict approach. This response could perhaps be related to the common belief that military decisions are life-or-death decisions. The critical decision making required of military leaders could justify the seriousness and strictness of their leadership style.

Finally, many participants also emphasized that military leadership, more than civilian or corporate leadership, requires *a continuum*

of learning. This suggested that the EPME program was regarded as very important in its professional context.

Round three confirmed this interpretation by demonstrating that decision-making skills were considered the most critical among the panelists. The other items ranked by the participants were less frequently the first choice. In descending order of importance, the panelists ranked the differences between military and nonmilitary leadership as: "military leaders make life-or death-decisions," "military leadership requires more accountability," "military leadership requires more discipline," "military leadership is more structured," and "military leadership requires more self-control."

Question 4: In what ways, if any, do you think EPME improves enlisted leadership skills?

For question four, four subthemes emerged out of round one: *exposure*, *practice*, *interpersonal*, and *organizational*. In regards to the program's *exposure* benefits, one participant remarked that "there are so many aspects of leadership and it is hard to become exposed to all of them in the workplace, whereas in the EPME setting one can have the opportunity to see all the tools available." That is, EPME allows participants to receive thorough instruction and access to all the leadership knowledge and tools available through the Air Force. The *practice* benefits involved "hands-on" application experience and practice. These activities "[reinforce] those 'tried and true' techniques that enhance effective leadership."

The most commonly cited benefits, however, were the *interpersonal* ones. EPME plays an important role in providing participants with the opportunity to interact, communicate, and network with peers. As one participant noted, "interaction with peers in person improves communication. It also fosters relationships and builds teams." This interpersonal benefit was most valued by participants.

Finally, panelists made a few disparate remarks about the *organizational* benefits of EPME. These included the creation of shared knowledge and skills and the improving of the organization's efficiency (e.g., "It prepares future leaders to become future/successful managers which is needed to maintain a strong military presence").

In round two, a greater variety (or answer dispersion) emerged in the participants' answers. Despite this, their answers did not generally include comments regarding participants' knowledge, efficiency, or productivity. Moreover, while panelists offered application and practice

as two main benefits of residential teaching in the surveys for question two, practice was not highlighted as one of the ways EPME improved leadership skills. Instead, some of the most frequently chosen factors were once again related to interpersonal benefits (the fact that EPME "facilitates networking," "allows leaders to share knowledge," "promotes peer-to-peer feedback," and "provides interpersonal benefits"). There were also two common choices that suggested that EPME training develops a more acute self-awareness, or accurate ability to assess present strengths and weaknesses, and thereby to better plan future actions ("allows leaders to self-evaluate" and "prepares leaders for future challenges").

Given the participants' answer dispersion for round two, the findings obtained in round three should be perhaps read with additional care. The descending order of importance of the selected items was: "allows leaders to share knowledge," "prepares leaders for future challenges," "promotes peer-to-peer feedback," "facilitates networking," and "allows leaders to self-evaluate." These findings suggest that the importance of EPME, residential or online, mainly consists of strengthening interpersonal skills (facilitated via residential formats, in their opinion) and leadership skills (achievable via both online and residential formats).

Question 5: What, if any, impact do you think it would have on military effectiveness if EPME was converted from resident to online instruction and it proved to be ineffective?

Four subthemes emerged in the first round of question five: *leadership skills decline*, *learning experience decline*, *team-building blockage*, and *long-term negative effects*. Participants indicated that transitioning EPME leadership education online would provoke a *decline in leadership skills*. This deterioration would involve both the acquisition of leadership skills and their quality (e.g., "It would have a huge impact because there would be a group of ill-prepared leaders guiding subordinates without the proper tools to do so"). Although one participant argued that the change would have little learning impact, some participants expected it to lead to a *learning experience decline* as well. Specifically, participants argued that students could find it hard to focus, remain dedicated, and find time for online studies. This was principally the case if the studies were to be conducted alongside other responsibilities, including familial and regular professional duties. One participant strongly emphasized this aspect, while arguing that residential EPME is about "more than the lesson plans, even

though very important, I think the biggest take away is the learning environment [social events, protocol, networking, collaboration] experiences/tools that you cannot get online."

Many participants also emphasized that a switch to online learning would bear a negative impact on the building of interpersonal relationships and teams. That is, the online structure would work as a *team-building blockage.* Peers would be prevented from interacting, establishing networks, and supporting each other. This was not a minor or insignificant problem. Rather, "this doesn't instill the need for teamwork in accomplishing a greater goal. Nor does it keep people motivated to continue. Without people, we fail."

Finally, some mentioned *long-term negative effects*. First, EPME value and influence would likely suffer from the inefficiency of the change. The program might even become irrelevant. Second, gradually declining quality in leadership education would affect all incoming generations ("What isn't learned can't be shared with the future leaders"). The overall tone for this theme was dramatic: "This problem would take years to overcome, just like with any major change that is not well thought out." Only one participant claimed that no efficiency damage would occur.

In round two, participants agreed that a switch to an online platform would create a general decline in leadership skills, which in turn would affect the leaders' effectiveness. Some argued that this loss of efficiency would partly be a loss in efficacy ("limit ability to achieve organizational goals"). Yet most reinforced that the damaged efficiency would result, mainly, from interpersonal deficiencies ("less collaboration between personnel," "prohibits building interpersonal relationships," and "negative impact on team building"). In addition, for the first time, participants noted that EPME had motivational aspects, which in turn also boosted leaders' efficiency (without the residential structure, there would be a "decrease in desire to lead," and the online structure would "reduce [the] leader's commitment to the service").

Round three reinforced the idea that participants distrusted online instruction due to its assumed negative impact on leader effectiveness. Even though participants did not note leader effectiveness as a primary benefit of EPME, it is clear that its loss would be felt if the program moved to an online platform. The descending order of importance of the items considered in this round was: "decline in leadership skills," "prohibits building interpersonal relationships,"

"less collaboration between personnel," "negative impact on team building," and "reduce leader's commitment to the service." The probable decline in general leadership skills was seen as most problematic, then the three relationship-driven considerations, and, finally, the motivational issue.

Question 6: What role, if any, do you think the cost of educating enlisted leaders should play in influencing the method for conducting EPME programs?

In question six, three subthemes emerged: *polemic money matters*, *education comes first*, and *efficiency as a driving factor*. In regards to *polemic money matters*, only one participant argued that cost should have a determinant role. Most considered money to be a concern, given the "current fiscally constrained environment." Alternatively, they considered money irrelevant, answering the question with a plain "none." In regard to the economical aspect, most were aware that online courses "saved money" but felt that the EPME budget should not necessarily be reduced for this reason alone.

Those who underlined the position that money had little weight offered that *education comes first* (e.g., "Producing a sound enlisted leader should always outweigh monetary restrictions"). They felt that students would be filling critical roles and should not be hobbled by poor education (nor should their followers or organizations). On the other hand, *efficiency as a driving force* was put forward by those who allowed that money was at least a factor to consider. For these participants, "long-term" and "invisible" factors should enter a cost-benefit analysis for residential education, and after this analysis, the most efficient course of action should be chosen. They noted, for example, that mixed online-residential courses could reap the benefits of both pedagogic strategies (e.g., "You can still bring the people together, but do it for a shorter amount of time. That way you still gain the networking and camaraderie piece to EPME"). In such an analysis, the evaluation of efficiency should remain as unbiased as possible, because online courses sometimes also raise technical difficulties and diminish the productivity of the people involved.

In round two, most participants attributed some importance to economics, though only two regarded cost as the most relevant factor ("cost should be the determining factor"); 15 regarded it as the least important or a nondeterminant factor ("cost should be considered but should not be the determining factor" and "cost should be the

least determining factor"). Most frequently, then, participants argued that there were other factors beyond reducing spending that should be taken into account. These factors included educational benefits (i.e., "The benefits received from the education should determine the costs").

Finally, respondents suggested two courses of action: "use a mixed-method approach to reduce spending" and "conduct a cost-benefit analysis." This further suggested that they attributed some importance to education costs, did not stand against the adoption of blended learning approaches, and wanted to have a more precise idea about the educational disadvantages associated with online formats.

Round three confirmed these findings. The descending order of importance of the items ranked was: "conduct a cost-benefit analysis to weigh the benefits," "cost should be considered, but should not be the determining factor," "the benefits received from the education should determine the costs," "use a mixed-method approach to reduce spending," and "cost should be the least determining factor."

Question 7: Explain what harm, if any, you think changing EPME from traditional classroom instruction to an online platform would have on the credibility of the EPME program?

Four subthemes emerged when participants completed round one of question seven: *pedagogical losses*, *little credibility damages*, *considerable credibility damages*, and *resolution suggestions*. The *pedagogical losses* subtheme further included two main categories (*irreplaceable interpersonal losses* and *difficult students' assessment*), as well as other less frequent codes.

In regard to *pedagogical losses*, most participants mentioned that the distance-learning format would provoke irreplaceable interpersonal losses, in terms of peer relations as networking (e.g., "Online courses would limit the professional contacts [networking] that goes along with 'in-class' courses"). Moreover, the assessment of students' "behavior," including their "dedication and engagement," would be hindered. One panelist also hinted that existing online courses were too easy, and students would not feel overly inclined to excel.

In regard to the credibility issue, four participants argued that none or *little credibility damage*s would be incurred from a switch to a distance-learning format (e.g., "I don't necessarily believe the program would lose credibility in an online platform"). The majority, however, felt that there would be *considerable credibility damages* due to factors

such as: interpersonal losses, subsequent users' feedback, the valuing of money over people, and the disrespect posed to senior officers. Many participants described a different reason for the envisaged credibility damage (e.g., "It would diminish its credibility because it shows a greater concern for cost savings than it does for creating an environment in which students are there solely to learn and develop"). One respondent commented that these credibility problems would likely arise from within the organization itself, rather than from the outside. Yet, the panelists mentioned ways for resolving this potential harm, including suggestions about how to sell the transition to an online format to the public. This would be the only way to allow users to overcome their resistance to change. Alternative suggestions were the use of mixed formats and the improving of currently-available and poor-quality online materials.

In round two, participants once more referenced the importance of interpersonal relationships in leadership education (noting a fear of "fewer interpersonal relationships" and "less peer communication and feedback"). Yet, what seemed to be more important was that the online transition could hinder EPME's control over perceptions of the program and its trainees ("senior leaders would be less confident of enlisted leaders," "may create a negative perception of the program," and "enlisted leaders would be perceived as less credible inside and outside the Air Force"). These negative perceptions could perhaps derive from the generalized belief that the use of online instruction had exclusively financial motivations ("implies that money matters more than personnel"). The transition would thus signify that the people behind the program cared more about money than about the trainees or the quality of the education. Moreover, the transition could also affect trainees' motivation ("reduced dedication to the profession of arms" and "lessen leader's desire to excel").

Round three confirmed these findings. The descending order of importance of the selected items was: "enlisted leaders would be perceived as less credible inside and outside the Air Force," "may create a negative perception of the program," "implies that money matters more than personnel," "less peer communication and feedback," and "fewer interpersonal relationships." The primary concerns were the negative perceptions associated with online education. These perceptions are sometimes the result of prioritizing cost over personnel. In addition, the unsuitability of online methods for addressing relationship-related issues was emphasized.

Question 8: Accepting the fact that Air Force enlisted leadership requires face-to-face execution, which ASPECTS, if any, of enlisted leadership do you think cannot be successfully taught using online instruction?

In question eight, four subthemes emerged: *higher-order thinking and behavior losses, interpersonal losses, basic skills losses, and current efficiency losses*. Most participants emphasized higher-order thinking and behavior losses and interpersonal losses. The higher-order losses involved areas of leadership and management (e.g., "Any topics relating to leadership and management that students need to learn at the proficiency level"). They also emphasized the experiential, performance-level losses resulting from the lack of "demonstrations," including "drills and ceremonies." They further suggested that residential practice scenarios were most effective.

In regard to the interpersonal losses, interviewees highlighted once more how "team building," "networking," "sharing with colleagues," and "receiving and learning to provide feedback and guidance would suffer." Few offered that even basic skills like briefing and "correspondence, basic theories, some military history" would be damaged.

Finally, panelists predicted that there would be current efficiency losses. This is because the current system was regarded as very efficient, responsible for "the best militaries in the world." Unless the available online and distance-learning materials were greatly improved, this efficiency would never be matched.

In round two, respondents argued the above issues were related to interpersonal aspects ("how to promote team building," "networking between enlisted leaders," "sharing of ideas and learning from peers," and "peer and instructor feedback") and practice or application aspects ("applying leadership skills" and "experiential learning"). Some participants also argued that ethical aspects and higher levels of expertise were harder to transmit via online teaching.

Round three confirmed these findings. The descending order of importance of the items ranked by panelists was: "applying leadership skills," "experiential learning," "networking between enlisted leaders," "sharing of ideas and learning from peers," and "peer and instructor feedback."

Question 9: Considering that some people are more comfortable using technology than others, how should the Air Force consider this comfort level in deciding whether to use the traditional classroom or an online method for conducting EPME?

Four subthemes emerged from round one of question nine: *comfort as minor issue*, *adaptation suggestions*, *efficiency as main goal*, and *mixed formats are better*. For the *comfort as a minor issue* subtheme, panelists believed that the current technological level in our society makes its use more normal (e.g., "I don't think this is as big of a problem as it once was"). Moreover, leaders currently need to be comfortable with this technology anyway.

Nevertheless, some participants foresaw some difficulties with the transition to distance learning. To lessen the impact of this change, they made many *adaptation suggestions*. For example, support could be provided to less-experienced users (e.g., "if support is provided to those who are less comfortable with technology, then it becomes even less of a consideration"). Additionally, students could prefulfill a comfort-level study or undergo a preassessment task (e.g., "Create technology CBTs [computer-based training] on ADLS [Advanced Distributed Learning Service] that the person must complete to ensure people have the KSAs [knowledge, skills, and abilities] to successfully participate in distance learning"). A significant note was that online tools should be improved and adapted to suit individual differences (e.g., "Everyone learns differently, and to be effective, learning styles should be targeted to the extent possible").

In considering *efficiency as main goal,* a couple of participants reemphasized that efficiency was the most important factor and that assessments should be made to consider the efficiency of each method adopted. Regarding the *mixed formats are better* subtheme, the key idea again was that the best solution would be to implement both residential and online formats. For example, blended learning formats, which adopted online resources during the current residential course structure, could be beneficial. There was the implicit idea that this could be used as a gradual transition method as well, although: "As great as technology is, there are certain things you can't learn by sitting in front of a computer—effective leadership is one of them. Leaders don't lead inanimate objects; they lead people. Personal, face-to-face interaction is key to honing interpersonal and leadership skills."

In round two, the majority of participants argued that comfort levels should be taken into account, even though most believed students

were proficient technology users ("most students are experienced with online learning" and "comfort level is not an issue"). One suggested course of action, which would take user comfort into consideration, would involve preassessing and training the students' technology skills ("conduct a preassessment test and use the test to improve skills prior to enrolling students in the leadership course" and "offer a prenavigation course to ensure personnel are able to navigate the course when they enroll"). In addition, the online platform's design should take different comfort levels into account ("consider the comfort level when analyzing audience and designing the course").

Round three clarified these findings. The descending order of importance of the ranked ideas was: "conduct a preassessment test and use the test to improve skills prior to enrolling students in the leadership course," "offer a prenavigation course to ensure personnel are able to navigate the course when they enroll," "consider the comfort level when analyzing audience and designing the course," "comfort level should be a major consideration," "most students are experienced with online learning," and "comfort level is not an issue."

Additional Remarks

In their final, free-form remarks, participants underlined the opinions that mattered most to them. They emphasized that technology has limitations and that the development and implementation of efficient blended learning courses is challenging and demanding. Nevertheless, they implied that technological resources and know-how should be provided to make this possible. They also generally preferred mixed-method approaches, including blended learning. Either way, before making a definite choice about how to better instruct Air Force leaders, more evaluation should occur.

Three participants made additional remarks. They highlighted the need for an accurate cost-effectiveness assessment and for establishing both residential and online instructor and student goals. They also highlighted the importance of evaluating currently used online formats and of developing intuitive and functional designs. The blended learning solution could draw advantages from both formats, principally if the online format is adopted at the beginning.

Overall

A few key ideas were repeated across questions and rounds. First, most participants argued that basic information was suitable for online teaching. However, more behaviorally and cognitively demanding course material and tools were not. Many participants felt that online teaching would be insufficient in these cases. This was consistent with the recurring suggestion that a mixed online-residential format would be more efficient.

Second, participants frequently noted that the lack of resident education would greatly jeopardize the interpersonal aspects of the program, such as team building, networking, interpersonal interaction, communication, feed-back, and guidance. The application knowledge developed from demonstrations, practice, and situational leadership role-play would also suffer. These skills and experiences were regarded as fundamental for the success of EPME training (e.g., "Along with this is the ability to network; this variable is hard to measure but is one of the most valuable portions of an EPME course"). Most panelists were skeptical about how the interpersonal aspect of EPME could be reproduced online. As one participant said, "chat rooms" were a poor substitution.

Third, although technology has become more normal in learning and teaching and is now considered important knowledge, the exclusive use of an online format could greatly endanger the quality of the leadership being taught.

Fourth, many participants agreed that the quality of the education and the efficiency of the learning process were the most important factors to consider. However, cost-benefit analyses of residential and online teaching should be performed. Moreover, existing online materials and tools need to be improved. These were currently of poor quality or unable to match the quality and efficiency of the current EPME residential program. EPME credibility would only be at risk if these procedures were not implemented.

Interview Protocol

Twenty-eight participants were selected from Maxwell AFB based on their area of expertise. Participants were contacted via telephone and emailing with the researcher explaining the nature and purpose of the study and asked them to participate. The initial email and

telephone conversations included an introduction of the researcher and explained why the researcher chose this research topic. The following introductory statement was provided to potential participants.

> *Hello, I am Chief Master Sergeant (retired) Mack Cockrell. Two years ago I attended an Air University institutional effectiveness meeting and witnessed a discussion between some of the other attendants expressing apprehension of a potential conversion of EPME from resident online instruction. This was an especially interesting conversation to me because I taught and managed EPME programs for the Senior Noncommissioned Officer Academy before retiring from the Air Force. After leaving the meeting, I discussed the topic with some of my colleagues, many of whom had previously taught EPME, and my colleagues had mixed feelings concerning this issue. Considering the lack of literature referencing teaching EPME online, I thought this would be a very worthy cause to conduct a research study. This is valuable research because prematurely converting this program to an online platform without data to validate learning outcomes can still be achieved could negatively impact the enlisted workforces' leadership abilities. Conversely, if learning outcomes can be achieve converting the program to an online platform, the Air Force could gain significant savings in education and training costs.*

Participants were told that the study relied on the opinions of experts and why they qualified as experts in this field. Participants were told the value of expert feedback and how the results of the study would benefit future enlisted leaders and the Air Force. The invitation to participate explained that the research was meant to deliver the data needed to make a well-informed decision concerning the future of the program. They were told the role of each round of the study. It was explained that each round of the survey should take approximately 10 to 20 minutes and that the data collection process should last approximately 60 days.

A letter of consent was sent via email explaining the right to participate or not participate in the study. The consent letter described how confidentiality would be maintained and informed participants about how to withdraw from the study at any time during the process. The consent letter contained the researcher's contact information for the sake of clarifying issues during the process. Those who agreed to participate in the study were sent a link to the Allegiance software program that contained the survey questionnaire.

Pilot Study Questions

D1. Are you an enlisted professional military education (EPME) graduate?
D2. Are you a current or former EPME faculty member who has taught for 2 years?
D3. Are you an administrator of an Air Force educational program?
D4. Please select your age category: Age: 26–35: 36–45: over 45.

Which aspects of military leadership, if any, can be best taught using resident instruction?

Which aspects of military leadership, if any, can be best taught using online instruction?

Which aspects of military leadership, if any, can be taught equally effectively using either online or resident instruction?

Which aspects of military leadership, if any, can be best taught by using a combination of resident and online instruction?

In what ways, if any, do you think military leadership differs from civilian or corporate leadership?

What, if any, impact do you think it would have on military effectiveness if converting EPME from resident to online proved to be ineffective?

In what ways, if any, do you think EPME improves enlisted leadership abilities?

What role, if any, do you think the cost of educating enlisted leaders should play in influencing the method for conducting the educational program?

Please explain what harm, if any, you think changing EPME from traditional classroom instruction to an online platform would have on the credibility of the EPME?

Air Force enlisted leadership requires face-to-face execution. Which aspect, if any, of enlisted leadership do you think cannot be successfully taught using online instruction?

Considering that some people are more comfortable using technology than others are, how should the Air Force consider this comfort level in deciding whether to use a traditional or an online platform for conducting EPME?

Questionnaire — Round One

Converting Enlisted Leadership Education to Online (1)
Survey Questionnaire
SCN 14-119: Expiration date 10/27/2015
Round One

This survey questionnaire is to obtain your view of the feasibility of converting enlisted professional military education (EPME) from resident to online instruction. Your identification will remain completely anonymous. Thank you for participating in this educational research.

Please enter the participant number provided in the email.

Enter your present job title.

Are you a current or former EPME faculty member?
( ) Yes
( ) No

Are you an administrator (commandant, dean, curriculum developer, course director, training manager, etc.) of an Air Force educational program?
( ) Yes
( ) No

Please select your age category.
( ) 26–35
( ) 36–45
( ) over 45

Select your education level.
( ) High school graduate
( ) Less than two years of college
( ) Associate degree
( ) Bachelor's degree
( ) Master's degree
( ) Doctorate degree

Have you previously enrolled in an online course?
( ) Yes
( ) No

Select your gender.
( ) Male
( ) Female

For the following questions, please include a brief explanation with your answers. In the following questions, the word ASPECTS refers to anything that impacts learning outcomes, instructional delivery, content, social interaction, networking, etc.

1. Which ASPECTS of EPME, if any, are best taught using resident instruction?

2. Which ASPECTS, if any, of military leadership can be taught equally effectively using either online or resident instruction?

3. In what ways, if any, do you think military leadership differs from civilian or corporate leadership?

4. In what ways, if any, do you think EPME improves enlisted leadership skills?

5. What, if any, impact do you think it would have on military effectiveness if EPME was converted from resident to online instruction and it proved to be ineffective?

6. What role, if any, do you think the cost of educating enlisted leaders should play in influencing the method for conducting EPME programs?

7. Explain what harm, if any, you think changing EPME from traditional classroom instruction to an online platform would have on the credibility of the EPME program?

8. Accepting the fact that Air Force enlisted leadership requires face-to-face execution, which ASPECTS, if any, of enlisted leadership do you think cannot be successfully taught using online instruction?

9. Considering that some people are more comfortable using technology than others, how should the Air Force consider this comfort level in deciding whether to use the traditional classroom or an online method for conducting EPME?

Please include any additional remarks below.

Questionnaire — Round Two

Converting Enlisted Leadership Education to Online (2)
Survey Questionnaire
SCN 14-119: Expiration date 10/27/2015
Round Two

A few weeks ago you and other members answered a questionnaire that provided opinions of how teaching enlisted professional military education (EPME) online would compare to teaching it in resident. The results of the first-round questionnaire were consolidated and presented in this round-two questionnaire.

The goal of this research is to reach a consensus on the top five responses for each of nine questions. The fact that there are only a few choices for each of the questions indicates that most members agree on how the program would be impacted. However, the goal is to reach a consensus on only the top five areas for each question.

Please enter your participant number.

Please select five choices for each of the questions below.

Select the top five aspects of EPME you believe are best achieved using resident instruction.

( ) Teaching curriculum involving role-playing
( ) Encouraging peer and instructor interaction
( ) Teaching curriculum requiring practical applications
( ) Teaching communication skills
( ) Facilitating team building
( ) Teaching new leadership concepts

1. Select the top five aspects of military leadership you believe can be taught equally effectively using either online or resident instruction.
   ( ) Providing basic information
   ( ) Teaching writing skills
   ( ) Introducing leadership theories
   ( ) Teaching curriculum requiring little or no interaction
   ( ) Teaching curriculum below the application level

( ) All leadership curriculum should be taught using resident instruction

2. Select the top five ways you think military leadership differs from civilian or corporate leadership.
   ( ) Military leadership is more structured
   ( ) Military leadership requires a continuum of learning
   ( ) Military leaders make life-or-death decisions
   ( ) Military leadership requires more self-control
   ( ) Military leadership requires more accountability
   ( ) Military leadership requires more discipline
   ( ) No difference in civilian and military leadership

3. Select the top five ways you think EPME improves enlisted leadership skills.
   ( ) Improves leaders' knowledge and skills
   ( ) Provides interpersonal benefits
   ( ) Facilitates networking
   ( ) Allows leaders to share knowledge
   ( ) Improves leaders' production and efficiency
   ( ) Allows leaders to practice leadership skills
   ( ) Promotes peer-to-peer feedback
   ( ) Allows leaders to self-evaluate
   ( ) Prepares leaders for future challenges

4. Select the top five ways military effectiveness would be negatively impacted if EPME was converted from resident to online instruction.
   ( ) Decline in leadership skills
   ( ) Decrease in desire to lead
   ( ) Reduces leader's commitment to the service
   ( ) Less collaboration between personnel
   ( ) Prohibits building interpersonal relationships
   ( ) Negative impact on team building
   ( ) Limit ability to achieve organizational goals

5. Select the top five roles you think the cost of educating leaders should play in influencing the method for conducting EPME programs.
   ( ) Cost should be the determining factor

( ) Use a mixed-method approach to reduce spending
( ) Cost should be considered but should not be the determining factor
( ) Conduct a cost-benefit analysis to weigh the benefits
( ) Cost should be the least determining factor
( ) The benefits received from the education should determine the costs

6. Select the top five ways the credibility of the EPME program would be negatively impacted if the resident portion of the program were changed from classroom instruction to online instruction.
( ) Fewer interpersonal relationships
( ) Reduced dedication to the profession of arms
( ) Lessen leader's desire to excel
( ) Less peer communication and feedback
( ) Senior leaders would be less confident of enlisted leaders
( ) Implies that money matters more than personnel
( ) May create of negative perception of the program
( ) Enlisted leaders would be perceived as less credible inside and outside the Air Force

7. Accepting the fact that Air Force enlisted leadership requires face-to-face execution, select the top five aspects of enlisted leadership you think would be most difficult to teach using online instruction.
( ) Ethical leadership
( ) Applying leadership skills
( ) How to promote team building
( ) Networking between enlisted leaders
( ) Sharing of ideas and learning from peers
( ) Peer and instructor feedback
( ) Proficiency level learning
( ) Experiential learning

8. Considering that some people are more comfortable using technology than others, select the top five ways the Air Force should consider this comfort level in deciding whether to use the traditional classroom or an online method for conducting EPME.
( ) Conduct a preassessment test and use the test to improve skills prior to enrolling students in the leadership course

( ) Most students are experienced with online learning, therefore comfort level is not an issue
( ) Comfort level should be a major consideration
( ) Offer a prenavigation course to ensure personnel are able to navigate the course when they enroll
( ) Consider the comfort level when analyzing audience and designing the course
( ) Comfort level should not be a consideration

Please include any additional remarks below.

Questionnaire — Round Three

Converting Enlisted Leadership Education to Online (3)
Survey Questionnaire
SCN 14-119: Expiration date 10/27/2015
Round Three

This is the final questionnaire for this research study, which is designed to measure the potential impact of converting enlisted professional military education (EPME) from resident to online instruction. You have played an instrumental role in this research project. Thank you for sharing your time and expertise.

For this final survey questionnaire, please prioritize the responses for each of the nine questions. The first response you select will be assigned the highest priority, the second response you select will be assigned the second highest priority, and so forth. Select all five available responses in the order you feel they should be prioritized beginning with the highest priority and ending with the lowest priority.

Enter your participant number.

Please prioritize the responses from 1 to 5 for each question below. Clicking the cursor on the selection panels assigns priority in the order that you select them. The first selection is the 1st priority, the second selection is the 2nd priority, and so forth. If you want to change a selection, place the cursor in the selection panel and click it again to deselect it. If you deselect and item and reselect, please check all the other responses for that question to ensure the responses are in the order you intended.

1. Rank order the following aspects of EPME you believe are best achieved using resident instruction.
   ( ) Teaching curriculum involving role-playing
   ( ) Encouraging peer and instructor interaction
   ( ) Teaching curriculum requiring practical applications
   ( ) Teaching communication skills
   ( ) Facilitating team building

Rank order the following aspects of military leadership you believe can be taught equally effectively using either online or resident instruction.

( ) Providing basic information
( ) Teaching writing skills
( ) Introducing leadership theories
( ) Teaching curriculum requiring little or no interaction
( ) Teaching curriculum below the application level

2. Rank order the following ways you think military leadership differs from civilian or corporate leadership.
   ( ) Military leadership is more structured
   ( ) Military leaders make life-or-death decisions
   ( ) Military leadership requires more self-control
   ( ) Military leadership requires more accountability
   ( ) Military leadership requires more discipline

3. Rank order the following ways you think EPME improves enlisted leadership skills.
   ( ) Facilitates networking
   ( ) Allows leaders to share knowledge
   ( ) Promotes peer-to-peer feedback
   ( ) Allows leaders to self-evaluate
   ( ) Prepares leaders for future challenges

4. Rank order the following ways military effectiveness would be negatively impacted if EPME was converted from resident to online instruction.
   ( ) Decline in leadership skills
   ( ) Reduces leader's commitment to the service
   ( ) Less collaboration between personnel
   ( ) Prohibits building interpersonal relationships
   ( ) Negative impact on team building

5. Rank order the following roles you think the cost of educating leaders should play in influencing the method for conducting EPME programs.
   ( ) Use a mixed-method approach to reduce spending
   ( ) Cost should be the considered but should not be the determining factor

( ) Conduct a cost-benefit analysis to weigh the benefits
( ) Cost should be the least determining factor
( ) The benefits received from the education should determine the costs

6. Rank order the following ways the credibility of the EPME program would be negatively impacted if the resident portion of the program were changed from classroom instruction to online instruction.
( ) Fewer interpersonal relationships
( ) Less peer communication and feedback
( ) Implies that money matters more than personnel
( ) May create of negative perception of the program
( ) Enlisted leaders would be perceived as less credible inside and outside the Air Force

7. Rank order the following aspects of enlisted leadership you think would be most difficult to teach using online instruction.
( ) Applying leadership skills
( ) Networking between enlisted leaders
( ) Sharing of ideas and learning from peers
( ) Peer and instructor feedback
( ) Experiential learning

8. Considering that some people are more comfortable using technology than others, rank order the ways the Air Force should consider this comfort level in deciding whether to use the traditional classroom or an online method for conducting EPME.
( ) Conduct a preassessment test and use the test to improve skills prior to enrolling students in the leadership course
( ) Most students are experienced with online learning, therefore comfort level is not an issue
( ) Comfort level should be a major consideration
( ) Offer a prenavigation course to ensure personnel are able to navigate the course when they enroll
( ) Consider the comfort level when analyzing audience and designing the course

Please include any additional remarks below.

Notes

(All notes appear in the shortened form. For full details, see the appropriate entry in the bibliography.)

1. Kogan, Potential Across-the-Board Cuts; Redman, "CMSAF Discusses Top Issues"; Sharp, "Down Payment"; and Watson, "U.S. Sequestration."

2. Adams and Leatherman, "Leaner and Meaner Defense"; and Redman, "CMSAF Discusses Top Issues."

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5. Ricks, "PME Continues For Now."

6. Khodamoradi and Abedi, "Assessing Characteristics of Online Education"; and Air Force Pamphlet (AFPAM) 36-2241, 1 October 2011.

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8. Henderson, "USAF Enlisted Professional Military Education"; Air Force Instruction (AFI) 36-2618, 27 February 2009; and AFPAM 36-2241, 1 October 2011.

9. Berger, "Air Force Enlisted Personnel Programs."

10. AFI 36-2618, 27 February 2009.

11. Simonet and Tett, "Five Perspectives."

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13. AFI 36-2618, 27 February 2009.

14. Ricks, "PME Continues for Now."

15. Crevani, Lindgren, and Packendorff, "Leadership, Not Leaders"; and Taylor, Rosenbach, and Rosenbach, *Military Leadership*.

16. Simonet and Tett, "Five Perspectives"; and Ulrich and Smallwood, "What Is Leadership?"

17. Hoozee, Vanhoucke, and Bruggeman, "Comparing the Accuracy of ABC"; and Kalshoven, Hartog, and De Hoogh, "Ethical Leadership."

18. Awan and Mahmood, "Relationship among Leadership Style."

19. Balon, "Leadership versus Management"; and Northouse, *Leadership*.

20. Voon et al., "Influence of Leadership Styles"; and Balon, "Leadership versus Management."

21. Riaz and Haider, "Transformational and Transactional Leadership."

22. Metscher et al., "Leadership to Increase Commitment."

23. Humphreys and Zettel, "Transformational Leader Self-Perception."

24. Winkler, "Comparing Corporate Aerospace Leadership Groups."

25. Sweeney, Matthews, and Lester, *Leadership in Dangerous Situations*; and Schmidt-Wilk, "Teaching for Good Leadership."

26. Sweeney, Matthews, and Lester, *Leadership in Dangerous Situations*.

27. *The Profession of Arms*, white paper.

28. Air University, minutes; and Jackson, "Distance Learning an AU Priority."

29. Mahoney and Ackerman, "PME and Online Education"; Means et al., *Evaluation of Evidence-Based Practices*; Rojek, "CMSAF Roy"; Columbaro and Monaghan, "Employer Perceptions of Online Degrees"; Mortgage Bankers Association of America, "Envoy Mortgage Partners with XINNIX"; and Henheffer, "Setting the Standard."

30. Khodamoradi and Abedi, "Assessing Characteristics of Online Education."

31. Friedman and Preble, "Refocusing U.S. Defense Strategy"; and Ricks, "PME Continues for Now."

32. Mahoney and Ackerman, "PME and Online Education"; Bombgetter, comment on Professional Military Education (PME); and Phoenixdown, comment on Airman Leadership School.

33. Bombgetter, comment on PME; Jackson, "Distance Learning an AU Priority"; and Phoenixdown, comment on Airman Leadership School.

34. Mahoney and Ackerman, "PME and Online Education"; and Rojek, "CMSAF Roy."

35. Voon et al., "Influence of Leadership Styles"; and Davis, "Perceived Leadership Style."

36. Chairman of the Joint Chiefs of Staff Instruction (CJSCI) 1805.01A, 20 September 2011; and AFPAM 36-2241, 1 October 2011.

37. Mayadas, Bourne, and Bacsich, "Online Education Today."

38. Mahoney and Ackerman, "PME and Online Education"; and Joint Chiefs of Staff (JCS), *Joint Vision 2010*.

39. Ferguson and DeFelice, "Length of Online Course"; and McPhee, Marks, and Duffy, "Comparison of Equated Learning."

40. Kayes, Allen, and Self, "Integrated Learning"; Miyazoe and Anderson, "Interaction Equivalency Theorem"; Arbaugh et al., "Research in Online and Blended Learning"; Chen, Jones, and Moreland, "Online Accounting Education"; Ferguson and DeFelice, "Length of Online Course"; and McPhee, Marks, and Duffy, "Comparison of Equated Learning."

41. Henderson, "USAF Enlisted Professional Military Education."

42. Berger, "Air Force Enlisted Personnel Programs"; and Henderson, "USAF Enlisted Professional Military Education."

43. Berger, "Air Force Enlisted Personnel Programs"; and Henderson, "USAF Enlisted Professional Military Education."

44. Berger, "Air Force Enlisted Personnel Programs."

45. The Air Force evaluates the efficacy of its curriculum using the Kirkpatrick Evaluation Model, developed by Donald L. Kirkpatrick in 1996. This model posits that training success can be determined in four phases: (1) the reaction phase (in which the researcher gauges how students felt about the education or learning experience), (2) the learning phase (in which the students' knowledge acquisition is tested), (3) the behavior phase (in which the researcher analyzes the extent to which learners applied in work situations the knowledge gained from a course), and (4) the result phases (in which the overall effect of the students' training on the organization as a whole is determined). Any consideration of whether online education is sufficient and beneficial for Air Force noncommissioned officers must include a review based on this method. (Arthur et al., "Effectiveness of Training in Organizations"; Kirkpatrick, "Great Ideas Revisited"; Pineda-Herrero, "Evaluation of Training in Organisations"; and Praslova, "Adaptation of Kirkpatrick's Four Level Model.")

46. Henderson, "USAF Enlisted Professional Military Education."

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48. For a more complete description of this study and its findings, see Cockrell, 2015.

49. Clibbens, Walters, and Baird, "Delphi Research," 38.

50. Hsu and Sandford, "Delphi Technique."

51. Cockrell, "Converting Air Force Enlisted Leadership Education," 96–117.

52. Beasley Preffer, "Counselor Education Efficacy."

53. Dell, Low, and Wilker, "Comparing Student Achievement."

54. Dell, Low, and Wilker, "Comparing Student Achievement."

55. Simsek, "Interview with Tony Bates."

56. Means et al., *Evaluation of Evidence-Based Practices*; and Farmer, "Leading Leadership Preparation."

57. Rudestam and Schoenholtz-Read, "Flourishing of Adult Online Education."

58. Allen and Seaman, *Changing Course*.

59. Farmer, "Leading Leadership Preparation."

60. McGuire and Castle, "Analysis of Student Self-Assessment."

61. Ke, "Professionals' Perceptions."

62. McGuire and Castle, "Analysis of Student Self-Assessment."

63. The number who believed both methods were equivalent in 2002 was 57 percent, but in 2012 that number had risen to 77 percent (Allen and Seaman, *Changing Course*).

64. Daymont, Blau, and Campbell, "Deciding Between Traditional and Online Formats."

65. In this paper, I consider the three pertinent generations to be the Baby Boomers (1943–1960), Generation X (1961–1981), and the Millennials (1982–2001).

66. Williams, "Generational Perspective of Higher Education."

67. Farmer, "Leading Leadership Preparation."

68. Farmer, "Leading Leadership Preparation."

69. Ke, "Professionals' Perceptions."

70. Prelip, "Learning Effectiveness in Community College."

71. Murdock et al., "Online Versus On-Campus."

72. Meyer, "When Topics are Controversial."

73. Cockrell, "Converting Air Force Enlisted Leadership Education," 108.

74. To be fair, respondents also noted that this environment could be considered coercive and that in some circumstances it could generate hostility among employees.

75. AFPAM 36-2241, 1 October 2011.

76. AFI 36-2618, 27 February 2009.

77. Ricks, "PME Continues For Now."

78. Ricks, "PME Continues For Now."

79. AFI 36-2618, 27 February 2009.

80. Crevani, Lindgren, and Packendorff, "Leadership, Not Leaders"; and Taylor, Rosenbach, and Rosenbach, *Military Leadership*.

81. Crevani, Lindgren, and Packendorff, "Leadership, Not Leaders"; Simonet and Tett, "Five Perspectives"; and Ulrich and Smallwood, "What Is Leadership?"

82. Balon, "Leadership versus Management."

83. Manning, "A Comparative Analysis of Leadership Skill."

84. Manning, "A Comparative Analysis of Leadership Skill."

85. Manning, "A Comparative Analysis of Leadership Skill."

86. Manning, "A Comparative Analysis of Leadership Skill."

87. Wu, Tsui, and Kinicki, "Consequences of Differentiated Leadership."

88. Hoozee, Vanhoucke, and Bruggeman, "Comparing the Accuracy of ABC"; and Kalshoven, Hartog, and De Hoogh, "Ethical Leadership."

89. Hoozee, Vanhoucke, and Bruggeman, "Comparing the Accuracy of ABC."

90. Awan and Mahmood, "Relationship among Leadership Style."

91. Secretary of the Air Force Public Affairs, "Airmen Powered Innovation."

92. Bass et al., "Predicting Unit Performance."

93. Balon, "Leadership versus Management"; and Northouse, *Leadership*.

94. Voon et al., "Influence of Leadership Styles"; and Balon, "Leadership versus Management."

95. Balon, "Leadership versus Management"; and Humphreys and Zettel, "Transformational Leader Self-Perception."

96. Voon et al., "Influence of Leadership Styles"; Humphreys and Zettel, "Transformational Leader Self-Perception"; and Riaz and Haider, "Transformational and Transactional Leadership."

97. Voon et al, "Influence of Leadership Styles"; and Skakon et al., "Leader's Well-Being, Behaviors and Style."

98. Hoel et al., "Leadership Styles as Predictors."

99. Hoel et al, "Leadership Styles as Predictors"; and Riaz and Haider, "Transformational and Transactional Leadership."

100. Steele, *Antecedents and Consequences*.

101. Metscher et al., "Leadership to Increase Commitment."

102. "Thomas N. Barnes Center for Enlisted Education."

103. Davis, "Perceived Leadership Style."

104. Cockrell, "Converting Air Force Enlisted Leadership Education," 102–05.

105. Ballenstedt, "Differences between Military, Civilian Leaders."

106. Winkler, "Comparing Corporate Aerospace Leadership Groups."

107. Allen and Seaman, *Changing Course*; and Schmidt-Wilk, "Teaching for Good Leadership."

108. In 2012, Ryan Kelty and Alex Bierman conducted a study to measure the perceptions of military personnel who work with contractors in combat situations. The researchers also wanted to understand how working with civilian contractors influenced military personnel in turn. Participants were US Army military and civilian personnel working in Iraq and Afghanistan. Though military personnel thought the contractors' performance was on par, the study found that military personnel believed the quality of leadership for contractors was lacking. It also found that a noticeable number of military personnel believed that military personnel had an advantage in creating positive relationships with their peers. Three times as many military as contractor personnel reported that the military had an advantage over contract personnel when it came to support for performing one's job (Kelty and Bierman, "Ambivalence on the Front Lines").

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111. *The Profession of Arms*, white paper.

112. Winkler, "Comparing Corporate Aerospace Leadership Groups."
113. Winkler, "Comparing Corporate Aerospace Leadership Groups."
114. Sanchez, "Naval Leadership Training."
115. Kimball and Byerly, "To Make Army PME Distance Learning Work."
116. Harkins, "Corps to See Complete Overhaul."
117. *Transformation in Progress*, hearing before 111th Cong.
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119. Parish, "Canadian Delegation Visits Barnes Center."
120. Tung et al., "Distance Learning in Advanced Military Education."
121. Peterson, *Nurturing the Australian Military Mind*.
122. Cockrell, "Converting Air Force Enlisted Leadership Education," 98–100.
123. Cockrell, "Converting Air Force Enlisted Leadership Education," 113–14.
124. Cockrell, "Converting Air Force Enlisted Leadership Education," 113–14.
125. Cockrell, "Converting Air Force Enlisted Leadership Education," 138–40.
126. Cockrell, "Converting Air Force Enlisted Leadership Education," 98–100.
127. Cockrell, "Converting Air Force Enlisted Leadership Education," 105.
128. Cockrell, "Converting Air Force Enlisted Leadership Education," 118.
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130. Cockrell, "Converting Air Force Enlisted Leadership Education," 110–11.
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139. Zapalska and Brozik, "Learning Styles and Online Education."
140. Sharp, "Down Payment."
141. Cockrell, "Converting Air Force Enlisted Leadership Education," 135.
142. Cockrell, "Converting Air Force Enlisted Leadership Education," 98–99, 108, 136.
143. Williams, "Generational Perspective of Higher Education."
144. Bennett, Maton, and Kervin, "'Digital Natives' Debate."
145. Cockrell, "Converting Air Force Enlisted Leadership Education," 108.
146. Cockrell, "Converting Air Force Enlisted Leadership Education," 106.
147. Bichelmeyer et al., *Costs and Pricing*, 5.
148. Bichelmeyer et al., *Costs and Pricing*, 6.
149. Bichelmeyer, et al., *Costs and Pricing*.
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154. Hallowell and Gambatese, "Qualitative Research"; and Steurer, "Delphi Method."
155. Yousuf, "Delphi Technique."

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159. Graefe and Armstrong, "Comparing Face-to-Face Meetings."

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162. Arthur et al., "Effectiveness of Training in Organizations"; and Kirkpatrick, "Great Ideas Revisited."

163. Praslova, "Adaptation of Kirkpatrick's Four Level Model."

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165. Pineda-Herrero, "Evaluation of Training in Organisations."

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