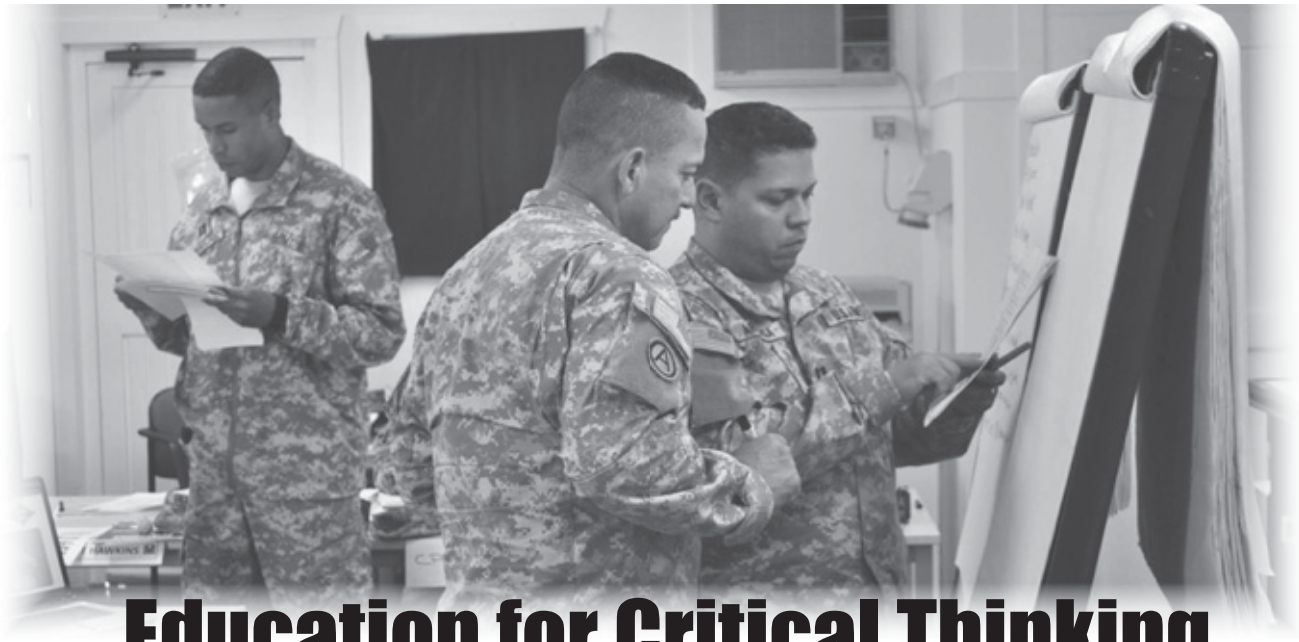

Education for Critical Thinking

Colonel Thomas M. Williams, U.S. Army Reserve

IN THEIR REVIEW of Army Leader Development and Leadership in the January-February 2012 issue of *Military Review*, Ryan Hinds and John Steele detail how many of today's Army leaders are dissatisfied with their Professional Military Education (PME), particularly in the areas of critical thinking and problem solving. This revelation is not new. A search for the words "critical thinking" in the Army War College library database will yield hundreds of articles, ranging from calls for cultural change to prescriptions about leadership development. Despite years of writing about it, teaching it, and calling for more of it, the profession remains rather unsettled about its success.

For some insight as to why, try this critical thinking exercise: put any 10 Army leaders in front of a white board and ask them to come up with a good definition of the word "bold." They will think it is easy until they begin. Most quickly discover that despite Webster, words convey different understanding to different people (bold to a young armor platoon leader means something very distinct from what it means to a mid-career finance officer), and they hit an impasse. Few are able to provide an effective defense of their views or to challenge the views of their peers with more than a personal opinion. Often they give up, yielding to time, the majority, or a dominant voice. The above is an admittedly unscientific experiment, but it reveals a lot about how we apply the critical thinking skills we have developed through years of PME. Our common understanding of what to do often fails us when we try to apply our knowledge in a real-world setting.

In their excellent analysis, Hinds and Steele recommend that we review the Army's PME curricula, and add somewhat offhandedly that if we find that content is relevant and up to date, then "the process in which we deliver the content to leaders would then become the most likely reason that leaders are not learning the skills they need to be effective."[1]

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MAJ Erick Vega, Cabo Rojo, Puerto Rico, and CPT Melvin Arreaga, Bayamon, Puerto Rico, both of the Puerto Rico National Guard, work together on a case study of the countries involved in the 1956 Suez Crisis using the ends-ways-means methodology during Intermediate Level Education, Camp Bondsteel, Kosovo, 30 September 2010. (U.S. Army MAJ Jorge I. Medina-Cintron)

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Antithetical to Honest Critical Thinking

They are correct. The Army's PME system needs work. Although we profess to teach "how to think," not "what to think," the amount of content to which we expose our students works to impede that development. If we want better results, we should consider Hinds' and Steele's thoughts and change the way we teach.

A better strategy for the Army's PME is to adopt an educational philosophy that focuses less on knowledge and content and more on the ability to question and argue. Critical thinking means the ability to construct and defend an argument using reason, applying intellectual standards of epistemic responsibility, and recognizing and countering logical fallacies as we see them in others and ourselves.

Argument is not conflict but the ability to form a logical conclusion from a set of premises; argument means supporting a claim with reason. One source for the intellectual standards we use to develop arguments is Linda Elder and Richard W. Paul's infamous *Miniature Guide to Critical Thinking*, "The Blue Book" that most Army leaders get at some point during their PME.

Think of fallacies as the dirty tricks we see from pundits on television or radio talk shows nearly every day—appeals to authority or fear, ad hominem attacks, red herrings, straw men, "begging questions" (circular arguments), and emotional blackmail. Developing and practicing these tricks (in pedagogical good faith) is an effective way to develop critical thinkers because knowing the pitfalls of logic can hone one's understanding. Because logic is so important for parsing complexity, such understanding can prepare a soldier for the rigors of the current operational environment and the perceived needs of "mission command."

If we pay attention to our doctrine, this shift in thinking about professional education is a strategic imperative. We now accept as common knowledge that military operations defy rules, calling them instead "human endeavors, characterized by the continuous, mutual adaptation of give and take, moves, and countermoves among all participants."[2] We agree that war is about identifying and solving ill-defined problems where experts can and do disagree on the range of solutions. In this operational environment, leaders have to prepare themselves to do more than apply doctrine and follow rules.[3] Army doctrine—Mission Command—welcomes this possibility and gives us license to be unorthodox if the situation warrants. Army Doctrinal Reference Publication (ADRP) 6-0 states that it is "a guide for action rather than a set of fixed rules," adding that effective leaders know when the doctrine or training and experience no longer apply, when they must adapt.[4] This is not a legal indemnification; it is a call for honest critical thinking.

The problem is that we have a PME system that relies on an educational approach in which instructors are guides for each new class to rediscover the same hackneyed truths as their predecessors. Although in some ways a useful program, the Intermediate Level Education (ILE) curriculum for majors is a good example of this ossification. It uses active learning, with a syllabus dominated by practical exercises, group discussions, case studies, and writing assignments. Although most of the learning objectives are at the top of Bloom's taxonomy (synthesis, analysis, and evaluation), students receive grades predominantly on how they apply the content their small group leaders teach.[5] This formula is antithetical to honest critical thinking.[6] Students should be able to do more than gather and assess existing information. They should be capable of forming and defending original hypothesis, even if these suppositions run counter to published doctrine. If critical thinking is the learning objective, this flexibility of mind is not only prudent but also essential.

Presupposing that teaching to Bloom's "knowledge, comprehension and application" is easier than developing creative and critical thinking and that officers at the operational level are capable of reading any material necessary (such as doctrine) to underwrite their knowledge of process and procedure, it should be acceptable to deemphasize the role of doctrine in our educational program. This is not a call to ignore or toss out doctrine as principle. Structure serves a useful purpose in that it prevents chasing "intellectual novelties, or encouraging rudderless behavior."[7] Yet Army leaders in favor of developing a mission command culture should know that too much systematic thinking hinders creative and critical thinking. In an environment characterized by ambiguity, our penchant to break thinking down into hyper-rationality may cause us

to miss the big picture and mistake the compiling of products for sound judegment.[8] Leaders should be able to reassemble and synthesize the parts to complete their understanding.[9]

Responding to the Objection

Proponents of the content-laden PME curriculum might reasonably argue that the objective of the program is to teach doctrinal literacy to the Army's diverse leadership, and that my proposal strays too far from that intent. Yet the program's own mission expresses a broader sentiment, stating that the ILE mission is to "educate and train officers to be adaptive leaders, capable of critical thinking." This debate is not new. Sixty-five years ago, when speaking at Oxford University, the novelist Dorothy Sayers likened our method to learning how to play a musical instrument by memorization. We might get remarkably good at playing particular songs and congratulate ourselves on our performance, but it is not the same as mastering the instrument and understanding music. When asked to play a new song, our limited knowledge forces us to memorize anew. She lamented that society had simply lost the tools for learning, that we focus too much on established content and therefore fail to teach discernment.[10] Our PME strives to teach "how to think," but recent articles, including Hinds and Steele's article, appear to resonate with Sayers, saying in effect that we are still far from the operational culture we need.[11]

The defense of content is representative of the Army's culture and is typical of bureaucracy. In 2010, Dr. James Pierce studied the Army's culture looking for evidence that it was sufficiently receptive to this adaptability. He found that at present it was not, that it was dominated by stability and control, rules and policies, coordination for efficiency, and hard-driving competitiveness.[12] Nevertheless, he found a strong desire to build a mission command culture of innovation and creativity, risk taking, and emphasis on flexibility and discretion. In many large organizations, teaching and learning exist to affirm the role of the organization's doctrine, not to expand the body of knowledge. Protecting "what is" creates an institutional bias against change, and when faced with calls for reform, an organization's leaders often stymie calls for reform by debating old truths in new forms, accepting and cherishing these "acceptable minor heresies."[13]

Mission command requires that we do more than allow for minor heresies. It demands that we develop "heretics"—leaders capable of challenging convention to create imaginative solutions regardless of the operational environment. An inquiry-based educational approach is the best way to develop these "heretics" because it is about questioning, and good questioners unequivocally make better thinkers.[14] A classroom focused on inquiry asks students to always use their own ideas—not someone else's ideas–and to use evidence to support their assertions or inquiries. The act of asking and answering is not between student and teacher but reciprocal between students. They are seeking answers to their own lack of understanding, knowledge gap, or misconception, not to teacher prompts.[15] There are also no wrong answers because judging an answer correct or incorrect is not the goal. The goal is to judge the quality of the thinking that led the student to the answer, which requires that we apply intellectual standards or break our thinking down into discrete elements to "improve and recast it as necessary."[16] Understanding the need for change requires that we see thinking as a social activity where students actively learn how to share ideas and argue with the purpose of finding the best solution, not winning.[17]

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According to author and psychologist Deanna Kuhn, good thinking comes from the discourse people engage in to advance their individual or shared goals.[18] She explains that good thinking is a function of the perceived value of that thinking, and that people will seek expediency over quality if a group believes consensus is paramount. Dr. Irving Janis came to similar conclusions in 1971. He labeled this function "groupthink," showing how group norms such as this hinder critical thinking with predictably disastrous results.[19]

(U.S. Army, SSG James E. Zingg)

MG Bill Gerety, commander of the 80th Training Command, U.S. Army Reserve, speaks to students attending the Command and General Staff College Intermediate Level Education course conducted by the 7th Warrior Training Brigade, 7th Civil Support Command, USAR, at Camp Normandy, Grafenwoehr, 29 July 2012.

Too often, we see argument as inimical to teamwork, but arguing is not the same as bickering. We are used to untrained argument that is more like a series of "egocentric monologues" where the participants incur no obligation to modify their views in response to another's.[20] Because of this we tolerate debate only when it does not delay group consensus.[21] Skilled argument helps leaders discriminate between fact and opinion, and to tie conclusions to evidence while avoiding familiar cognitive traps such as "false cause," or an "appeal to unqualified authority."[22] Argument helps leaders expand their perspectives and opens up new alternatives.[23]

Argument is useful even where there is initial agreement because it forces questions into the open, making us confront hidden assumptions and biases. It should not end with mere tolerance for dissenting opinion—where all "agree to disagree." Effective argument ends with a synthesis of all views and stronger collective understanding of the problems' dimensions before moving on toward identifying solutions.

Implications for Army Leadership

For mission command, this shift is crucial because the very nature of ill-defined problems is that they do not have apparent or distinct answers. A military staff's ability to wrestle with a problem's dimensions may prove more valuable than trying to decipher a solution.[24] The ability to argue well does not come naturally, so it is imprudent to assume operational leaders will simply pick it up during their career or studies. The ability to think well takes training, and practice.[25]

If ILE were organized around critical thinking and not content, students would spend far less of their 300 hours learning the content prescribed by the syllabus (where there is always just enough time to debate some minor heresies before the discussion yields to the pressure of moving on to the next module). Instead, they would learn more about creating and sharing knowledge developed through problem solving.

Currently ILE graduates do a 60-hour end-of-course exercise during which they apply what they learned in the first 240 hours. This is backwards. They should start with a complex problem and little guidance (an ambiguous environment) and have days—if not weeks—to hypothesize, research, learn content, and write out their reasoning and conclusions. Their faculty advisor should guide them and hold them accountable for intellectual rigor and sound reasoning. Notably, they should be held to standards of documentation of reference material evinced in good research papers. Advisors should never provide answers. We are looking for a program similar to what the Naval War College famously did during the 1930s when leaders like William "Bull" Halsey not only exchanged ideas but also had the chance to test "pet theories" in an unconstrained environment.[26]

Such a program caters to a more diverse set of learning styles and personality traits. Defending ideas through facilitated discussions encourages discourse and reflection, not approval or winning, and reflective thinkers have time to process and form responses. Even the manner in which the faculty requires students to develop and ask clarifying or challenging questions should foster learning and improved critical thinking.

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Adjusting an educational strategy to this degree has risks and tradeoffs, and we must be ready to accept them or mitigate their effects. For instance, allowing debate of major heresies accepts that, as students explore their course work, they may find current doctrine ill advised or even epistemologically contemptuous. A seminar may ignore convention and doctrine completely. These are prudent risks. The facilitator can ask the seminar to go back into the doctrine to explain their specific reasons for rejecting parts of it. When asked to apply lessons (as they return to their assigned duties), they will have a keener understanding of doctrinal strengths and weaknesses, and one might improve upon use in the field. They will also have a greater sense of circumstances that suggest abandoning convention and creating their own way.

Ignoring the Current Learning Model Dangerous?

There is another risk to an inquiry approach. Some students may graduate from a PME program without the same basic knowledge of operations found in the current learning model. With nearly 300 hours devoted to study and learning, this is unlikely. There is still ample time to master fundamentals, and colleges using this approach report that having an appreciation for inquiry and reflection is more valuable to success than simply being grounded in fixed, accepted knowledge.[27] Students will have the confidence and incentive to obtain missing knowledge through reading, and are more apt to evaluate this new information on their own. If there is a tradeoff, it is on the positive side; that is, gaining students capable of critical and creating thinking as opposed to having doctrinal experts who become what Professor Greg Foster calls captives of the "military mind."[28]

Despite the risks, there are opportunities. Having operational leaders from each of the services is an occasion to standardize what critical thinking means and reinforce the message that it is not just a classroom activity. No matter their branch or educational background, leaders will find this approach a model for all staff interaction. These graduates will also have tremendous influence on the future of the profession. Even if they conflict with peers or superiors more interested in easy answers or rationalizing instead of making decisions, they can still let imagination, questioning, and criticality flourish where they have control.

Regardless of how you structure the course, the intent is to maximize the time when students can work face-to-face to practice questioning and arguing, to become more comfortable with ambiguity, and to minimize the time allowed for the familiar processes that put us at risk of regressing to the comfort of old *truths*.

There is some irony in the question of what to do about critical thinking because it happens to be an ill-defined problem without a simple solution. Nonetheless, the strategic imperative is clear, and it calls for disciplined but "heretical" thinking.

Today's PME attempts to balance knowledge with critical thinking, but falls short and produces officers well schooled in content, but unable to see beyond "what is." We owe our officers an educational experience commensurate to the demands of today's operational environment, one where they can envision what "ought to be." An anecdote from the Army War College relating a general officer's quip captures the sentiment of this choice. The general said, "Stop sending officers who understand the system and start sending those who could identify creative solutions to unforeseen problems."[29] By adopting an inquiry-based learning model, we can turn all PME facilities into leadership laboratories focused on the development of critical thinkers and send the general the kind of operational leaders he needs. ***MR***

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