

# DEVELOPING Creative and Critical THINKERS

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**I**N APRIL 2009, Defense Secretary Robert Gates visited each of the senior service colleges to present his rationale for budget recommendations to the president. We can infer that his purpose was to communicate the critical priorities for the Fiscal Year 2010 national defense budget directly to emerging armed services senior leaders.<sup>1</sup> His FY 2010 recommendations challenged the existing advice and direction of the service leaders and would result in the cutting of major weapon systems.

In explaining his concerns about the Future Combat System (FCS), Secretary Gates related a conversation he had with the senior Army leadership about the design of the FCS variant of the infantry fighting vehicle. The vehicle had a clearance of 18 inches from the ground and a flat bottom hull. His comment was stark: the design revealed, “No lessons learned.”<sup>2</sup> The strategic investment in the FCS program had produced an inherently flawed vehicle. His message was clear: “What were we thinking?”

Several contemporary books and articles question our leaders’ abilities to think strategically about the challenges we face after 9-11. Tom Rick’s *Fiasco* and Bob Woodward’s *The War Within* are outsider accounts of ineffective policy- and strategy-making by senior civilian and military leaders. Chairman of the Joint Chiefs of Staff Admiral Mike Mullen stressed the need to “think ahead at the strategy level” in his guidance to the Joint Staff because we were “still more reactive than anticipatory.”<sup>3</sup> Some within the Army have also cited the lack of strategic thinking. (See Paul Yingling’s “A Failure in Generalship;” Steve Gerras’ “The Army as a Learning Organization;” and at the institutional level, David A. Fastabend and Robert H. Simpson’s “Adapt or Die.”)<sup>4</sup> Several senior leaders have touted the innovations in the operational force, but pointed to ineffective strategies and failures of institutional processes within the Department of Defense.<sup>5</sup> These leaders have observed that we were too busy to think, that we failed to see the big picture, and that our decision making was faulty.

Many senior Army and DOD leaders have said we need to develop better strategic thinking skills for the 21st century security environment.<sup>6</sup> The requirement stems from a realization that the complexity, uncertainty, and ambiguity of the current environment mandates a move away from Cold War methodologies and assumptions. As recent history suggests, a large gap exists between the Army’s desire to develop strategic thinking skills and what actually happens.<sup>7</sup>

This article presents a definition of strategic thinking and then focuses on the two key antecedents of strategic thinking—creative and critical thinking—and

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presents the Army War College approach to educating students in these skills.

Strategic thinking is the ability to make a creative and holistic synthesis of key factors affecting an organization and its environment in order to obtain sustainable competitive advantage and long-term success. Strategic thinking meshes anticipated requirements with future organizational capabilities to ensure the organization “wins” in the future.

Examples of failures in strategic thinking abound. They include the recent failures of U.S. auto companies to understand the key factors facing their industry. Of greater significance is our own failure of strategic thinking in the formulation and acceptance of the many pre-war assumptions about Iraq. The core elements of strategic thinking are the ability to think creatively and critically about national security issues. We believe research in cognitive psychology, neuroscience, and decision making can and should inform the Army’s calculus for developing strategic-thinking skills.

## **Creative and Critical Thinking in the Army**

We believe that providing students with the fundamentals of how to think about the challenges at the strategic level is vitally important because of the unpredictability of both the internal and external environments in which we operate. Consequently, our senior leadership must be skilled in developing and applying creative strategies to circumstances about which we have limited current knowledge or understanding. Creative thinking, therefore, is a critical element of strategic thought and is necessary for successful leadership of our military.

Creativity is the ability to produce novel ideas that others value. Individuals, groups, and organizations at the tactical, operational, and strategic levels need to be creative to provide new and effective approaches to challenges and understand the interaction between an organization and its external environment. The national security and contemporary operating environments are inherently volatile, uncertain, complex, and ambiguous.<sup>8</sup> Operating effectively requires leaders who have the sophisticated cognitive skills appropriate for the multiple demands of such environments. They must learn quickly, adapt when necessary, anticipate the future, be mentally agile and versatile, and look at issues in the correct contexts.<sup>9</sup>

Creativity requires developing new ideas and concepts that are effective in resolving situations at hand. Creativity is as much about observing the internal and external environment and finding problems as it is about problem solving. Particularly at the strategic level, we must be sensitive to how we even *define* problems, since very often the specificity or breadth of the problem statement will limit the generation of viable solutions. The terms “novelty,” “quality,” and “appropriateness” are commonly used in definitions of creativity. These terms apply equally to problem definition as to the other components of decision-making processes.

Creative thinking is a cognitive process that supports divergent and convergent aspects of problem solving and decision making. Thinking creatively provides a means to identify that a problem exists and, therefore, helps with problem definition. It also gives rise to the generation of multiple alternatives and a range of options in this divergent component. Through the application of critical thinking, alternatives are analyzed and judged for effectiveness and appropriateness in solving the problem. The convergence on the problem solution results in a decision for implementation. However, our predilection for quick answers and easy solutions hinders the process of divergent and convergent thinking.

Our profession requires its leaders to be not only creative but also critical thinkers. Creative out of necessity, and motivated out of desperation, our adversaries rapidly adapt to changing circumstances. Our enemies will be creative, so we must be, too. Creativity and innovation must inform senior leaders in critically deciding what to do and how to do it. As Professor Diane Halpern notes, “Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is purposeful, reasoned, and goal directed.”<sup>10</sup> In essence, critical thinking is about using processes to evaluate and select information in order to improve one’s judgment and make better decisions. While this paper does not outline the critical-thinking process, there are good references for detailed analysis of how to do critical thinking.<sup>11</sup>

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How do we develop these judgment skills in Army leaders? In the academic context, one way is to teach logic and reasoning skills that are typically the focus of philosophy. A second way is to emphasize questioning and self-reflection skills that are usually the focus of education and psychology.<sup>12</sup>

One can apply these methods in an environment that is context-free or context-dependent. Context-free development focuses on teaching thinking skills irrespective of a specific subject. Context-dependent development centers on teaching the same skills for a field of study. Based on our experiences at the War College, we think the best way to teach critical thinking skills to military leaders is to provide context-dependent skill development that incorporates philosophy's focus on critical thinking and education and psychology's focus on self-examination.

We argue that we can best develop strategic thinking skills if we—

- Use a multidisciplinary perspective to provide knowledge about thinking skills.
- Practice applying these skills in a context-dependent setting under the purview of a knowledgeable leader or facilitator.
- Encourage and motivate the routine application of strategic thinking skills to important issues by creating a healthy environment in schools and units.

### **Critical Thinking— the Good and Bad News**

The Army has some structural and cultural processes and norms that facilitate critical thinking. The military decision-making process is a rational, methodological approach for making decisions. The joint operation planning process uses it for tactical planning. Followed correctly, it should lead to the best (or at least a better) decision given the degree of uncertainty and complexity of the situation. The challenge is that a wide range of opportunities for failure in critical thinking and a bad decision accompany each step of the military decision-making process. From receiving the commander's initial guidance to generating courses of action, from evaluating courses of action to listing assumptions, innate biases and fallacious reasoning can lead the decision-maker astray. The availability heuristic (recalling the most vivid events) and egocentricity (thinking one's beliefs are better than anyone else's) can lead the unit down the wrong road if the

commander thinks his intuition is infallible and that the last way he dealt with a problem will work in the next case. At the end of the day, a leader must appreciate not only the value of the process, but also the importance of critical thinking.

The U.S. military has other attributes that facilitate critical thinking. For one, the military is extremely diverse. Rich and poor; black, brown, and white; Jewish, Christian, Muslim, and non-believers serve in the U.S. military. Diversity of thought can remove some obstacles to critical thinking and supports creativity and the cultivation of innovative solutions to pressing problems. Of course, the success inherent in leveraging diverse viewpoints and opinions depends on the commander's ability to listen to them.

Unfortunately, the combination of the Army's diversity and its emphasis on the military decision making process does not seem to be overcoming the challenges the Army faces as it attempts to become better at strategic thinking. The Army's biggest obstacle is its hierarchical nature and cultural norms. Reflective skepticism as a technique to improve judgment and decision making is difficult to embrace if officers or NCOs are not comfortable disagreeing with the boss, or even the boss's boss. This is especially difficult if senior leaders have egocentric tendencies toward extreme self-confidence because of numerous accolades and promotions. Unfortunately, leaders who have not taken careful steps to ensure the information they receive from their subordinates is "ground truth," even if it disagrees with their view, seem to be more the rule than the exception.

Because of its preeminence among the world's land forces, the Army has developed the ethnocentric view that the Army way is the best way. The impact of this ethnocentric (in addition to egocentric) view of the world is that the Army often struggles with cultural awareness, which is an artifact of faulty critical thinking. The intense focus of the Army recently on developing culture-savvy officers testifies to this shortcoming as well as a step toward meaningful change.

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An often overlooked requirement for successful creative and critical thinking is the concept of dialogue. The Army's hierarchical nature resists dialogue. Dr. Peter Senge asserts, "There are two primary types of discourse: dialogue and discussion. Both are important to a team capable of continual generative learning, but their power lies in their synergy, which is not likely to be present when the distinctions between them are not appreciated."<sup>13</sup> If commanders and leaders are more interested in discussion than real dialogue, they reduce opportunities to challenge personal assumptions. Several things must occur for dialogue to begin in a command and staff meeting, a troop unit, or staff group at the Captain's Career Course. Most important among these is the requirement that participants regard each other as professional colleagues, not subordinates and superiors. In addition, someone must serve as a facilitator who "holds the context" of dialogue.<sup>14</sup>

In *Adapt or Die*, Fastabend and Simpson posit, "Critical thinking is also an aspect of environment. To foster critical thinking, Army teams must at times leave rank at the door. 'Groupthink' is the antithesis of [creative and] critical thinking and exists in organizations in which subordinates simply mimic the thinking of their superiors."<sup>15</sup> To develop its critical-thinking capability, the Army must educate, train and select officers comfortable with putting their position power (i.e., their rank) to the side to facilitate better judgment through reflective skepticism. Jim Collins in *Good to Great* found that the leadership in great companies was not only about vision, it was "equally about creating a climate where truth is heard and brutal facts confronted. There is a huge difference between the opportunity to 'have your say' and the opportunity to be heard. The good-to-great leaders understood this distinction, creating a culture wherein people had a tremendous opportunity to be heard and, ultimately, for the truth to be heard."<sup>16</sup> This requirement applies not only to unit leaders but also to facilitators and instructors in the educational system.

## How to Improve

Given these challenges and obstacles, how do we make Army leaders better at creative and critical thinking? First, we must teach leaders the knowledge, skills, and terminology associated with thinking competencies. These are acquirable intellectual skills. As suggested earlier, the best way to teach thinking skills

to Army leaders is to provide context-dependent skill development. Officers need to learn these thinking skills within the Officer Education System in Training and Doctrine Command (TRADOC). The real meat of strategic thinking development, however, will occur as TRADOC instructors and facilitators highlight strategic thinking opportunities in the vast array of topics in the TRADOC curriculum.

This recommendation, however, has one single but critical antecedent to success. First, TRADOC should develop in its instructors the requisite skills to enable strategic thinking in a *context-dependent* environment. Most important among these is the ability to facilitate dialogue. TRADOC instructors should understand when it is appropriate to offer direct presentation of information (lectures and demonstrations); when it is best to have a discussion; and most importantly, when to facilitate a context-dependent dialogue to develop conceptual skills. Second, not only does TRADOC need to develop the facilitation skills of its instructors, it needs to select instructors that have the background, intelligence, and requisite knowledge, skills, and abilities to ensure success. Such changes would raise the quality of TRADOC instruction.<sup>17</sup>

Not fully appreciated is the secondary effect of a strong TRADOC climate: its graduates will report to troop units where they can model these behaviors when they discuss complex issues. As Fastabend and Simpson note, "Army leaders must create an environment where critical thinking is the norm and reasoned debate replaces unspoken dissent. Critical thinking is a learned behavior that is underpinned by education. The Army education system . . . can be our most effective lever of cultural change. Many of our most important cultural shifts can trace their origins to the school house."<sup>18</sup>

Of course, Army officers will not immediately pin on the eagles of colonels and become strategic thinkers upon selection for a senior level college. Hence, we have the Adaptive Leaders Course as part of professional military ethics and the Basic Officer

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Leadership Courses (I-III) for pre-commissioning sources and the initial training programs, whose goal is to develop officers with adaptive capacities and mental agility early in their careers.<sup>19</sup> The Intermediate Level Education course at Fort Leavenworth includes lessons in both creative thinking and critical thinking in its L100 Leadership block of instruction. Junior field grade officers gain understanding of these thinking skills and have the opportunity to apply them effectively in operational assignments after graduation.

The thinking skill development that should occur in troop assignments will happen only if the culture of the Army begins to place a high value on it. Within the constraints of the Army force generation model, it simply makes sense that during the first year of the reset cycle, new battalion and brigade commanders and their subordinates should attend further facilitated training. Such training should focus on developing creative and critical thinking skills as well as maintaining a climate that facilitates dialogue. Opportunities to apply creative thought and critical analysis are ubiquitous in our current tactical and operational environments; we see them daily in media reports from the field. If the Army really cares about strategic thinking, it must devote time and resources to its development.

## The War College Approach

The Army War College has long recognized the need to educate its students in creative and critical

thinking skills, but has struggled with finding the best way to introduce the material and develop competencies. For several years, the two topics were presented in a combined lesson during the core curriculum. Through the after-action review process, we realized that the single lesson either covered one topic in detail while giving short shrift to the other, or that both topics were addressed superficially. The realization fortunately coincided with a core curriculum revision that mandated a ten-day core course on strategic thinking in academic year 2006. The new course incorporated a full lesson for both creative and critical thinking. The intent was to introduce students to the concepts of creative and critical thinking early in the academic year so they could be applied in seminar discussions throughout the remainder of the year. In order to develop as critical and creative thinkers, students not only have to learn the concepts, they must practice applying the concepts under the watchful eye of an experienced facilitator.

The survey lessons provided are context-dependent. The seminar sessions begin with a presentation by the faculty of the key concepts and predominant models (Table 1) to ensure that students have the foundational knowledge and a frame of reference for the topics. Within each session, a brief exercise gives students the opportunity to apply the concepts followed by an after-action review facilitated by the faculty to draw out the salient points. This

<b>CREATIVE THINKING</b>	<b>CRITICAL THINKING</b>
<ul style="list-style-type: none"> <li>● To provide the student with a greater understanding of the individual and group creative problem solving processes.</li> <li>● To increase the student's ability to be innovative and creative in an environment marked by ambiguity, complexity, and change.</li> <li>● To increase the student's awareness of and appreciation for the competencies required by a strategic thinker.</li> </ul>	<ul style="list-style-type: none"> <li>● To comprehend the wide range of critical-thinking skills relevant to strategic leaders.</li> <li>● To comprehend the importance of reflection and self-awareness to identify the impact of biases, assumptions, fallacious reasoning, and egocentric thinking on the decisions we make as strategic leaders.</li> <li>● To apply critical-thinking skills to real-world situations such as current events, strategic decision making, and ethical challenges.</li> </ul>

Table 1. Elective objectives.



DOB

**Student Seminar 7 during the Theater Strategy and Campaigning course in the U.S. Army War College core curriculum. December 2008 to January 2009.**

questioning and reflection reinforces development of the thinking skill.

The Army War College also offers separate elective courses in these topic areas taught by faculty subject matter experts. While the lesson and elective course objectives (Table 1) are different, the scopes of the elective offerings are essentially the same. The creative-thinking elective is a senior leader-level course to help students deal with the issues and problems they are likely to encounter that require creative and innovative solutions. This course uses exercises that present unusual and challenging situations requiring creative solutions. The applicability of creative problem-solving techniques to strategic issues such as defense policy and domestic security is examined. Similarly, the critical-thinking elective aims to enhance the development and application of critical-thinking skills to analyze and evaluate complex issues and identify and argue the underlying assumptions that provide the foundation of strategic dialogue. The course develops students' critical-reasoning skills.

In each course, multiple perspectives give students a foundation in the concepts and theories of these cognitive skills. In each seminar session, there is an opportunity to test the concepts and confirm "proof of principle" through several methods. The electives' early lessons aim to develop self-awareness and specific thinking skills that support more complex application later in the courses. For the creative-thinking elective, students complete instruments like the Myer-Briggs Type Indicator,<sup>20</sup> the Kirton Adaption-Innovation Instrument,<sup>21</sup> and Belbin's Team Roles<sup>22</sup> that reveal their prefer-

ences for creative styles as individuals and provide insights into their behavior within groups—either as members or leaders. In-seminar exercises demonstrate the concepts in action for individuals and teams. An example is a project planning simulation that demonstrates the improvement in creativity and decision quality by groups.<sup>23</sup>

In addition to in-house faculty, we offer the perspectives of visiting outside scholars and practitioners for topics such as strategic intuition and climate for innovation. The diversity of thought and material demonstrates the value of tapping into non-conventional (civilian) sources to find ideas that may have applicability for military problem sets. For each session in the creative-thinking elective, students make journal entries to capture their personal reflections on the concepts presented and assess their relevance to their past experiences and future positions.

Case studies are incorporated that present historical events and tough issues that require strategic thinking—creative and critical—to discern areas of concerns and underlying causes. Students attempt to define the problem and then examine the potential solutions. In the academic year 2010 core curriculum, we piloted such a case study using the enduring Palestinian-Israeli conflict. For the integrative lesson, students were required to use concepts from creative and critical thinking to gain a holistic appreciation of the complexity of the problem and the many perspectives that have thwarted solutions over the past half-century.

In the critical-thinking elective, students adopt the lens of strategic decision-makers in a variety of

selected cases and scenarios that require the application of a model of critical thinking, along with additional tools and techniques to develop a rich understanding of the benefits and challenges of applying critical-thinking methods to realistic scenarios. Students also choose contemporary cases and make presentations on strategic-level military issues such as Pakistan and North Korea in order to examine points of view and underlying assumptions. In addition, other issues outside our students' traditional comfort areas, like education reform in America and the national financial crisis, lead to rich discussions.

How do we know that our approach to educating our students on strategic thinking works? The short answer is that we don't. We do, however, have end-of-course surveys and anecdotal comments from our graduates in the field that suggest they are better prepared to operate at the strategic level in the operational and institutional force. Both creative and critical thinking are among topics governmental, educational, nonprofit, and corporate organizations request for workshops and the Senior Leadership Staff Ride program. Clearly, once exposed to the concepts of strategic thinking, people see value in it.

## Conclusion

The continued development of strategic-thinking skills is imperative for a successful Army. Issues currently facing the military will also benefit significantly from the application of strategic-thinking

competencies. First, creative and out-of-the-box ideas are essential to success as the Army strives to develop a culture of innovation across the force, but only to the extent that critical thinking is applied to those ideas to reach viable solutions to complex issues. Creative thinking involves a divergence of thought. Critical thinking involves a convergence and analysis of thought to weed through poor ideas and identify the good ones. Creative thinking tends to be wasteful of time and energy without critical thinking. Without creative thinking, potential solutions may never be explored or discovered. Our leaders must recognize and acknowledge their natural shortcomings in strategic thinking and then take action to encourage the essential skills of creative and critical thinking.

Empowered subordinates will contribute to the decision-making process as Army leaders learn how to facilitate dialogue to encourage creative and critical thinking. Most studies on decision making show the benefit of collecting various points of view and perspectives. The overall quality of the final decision and its implementation improves. Numerous studies also show that empowered subordinates enjoy higher job satisfaction and have a stronger desire to remain in the military.<sup>24</sup> The context for the Army is not getting simpler. Sophisticated decision making must accompany sophisticated understanding. The application of the strategic-thinking skills will begin to move our leaders, and our Army, in that direction. **MR**

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## NOTES

1. Robert M. Gates, "Speech to USAWC," DVD recording (Carlisle Barracks, PA: U.S. Army War College, 16 April 2009).

2. Ibid.

3. Michael Mullen, CJCS Guidance for 2008-2009 (Washington, D.C.: U.S. Government Printing Office, 2008), <www.jcs.mil/content/files/2009-03/031009163310\_CJCS\_Guidance\_for\_2008\_2009.pdf> (7 May 2009).

4. Paul Yingling, "A Failure in Generalship" *Armed Forces Journal*, (May 2007); Stephen Gerras, "The Army as a Learning Organization" Strategy Research Paper (Carlisle Barracks PA: U.S. Army War College, 2002); David A. Fastabend and Robert H. Simpson, "Adapt or Die: The Imperative for a Culture of Innovation in the United States Army," *Army*, February 2004, 14-25.

5. Hence, the need for revised U.S. military strategies. For example see "Remarks by the President on a New Strategy for Afghanistan and Pakistan" (Washington, D.C.: The White House, 27 March 2009), <www.whitehouse.gov/the\_press\_office/Remarks-by-the-President-on-a-New-Strategy-for-Afghanistan-and-Pakistan/> (2 June 2009).

6. Association of the United States Army, *Torchbearer National Security Report* (Arlington, VA: Institute of Land Warfare, Association of the United States Army, March 2005), 21.

7. Based on Stephen Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders" (Carlisle Barracks: U.S. Army War College, 2008).

8. Stephen A Shambach, ed., "The Strategic Environment," in *Strategic Leadership Primer*, 2d ed. (Carlisle Barracks, PA: U.S. Army War College, 2004), 12-14.

9. Based on Charles D. Allen, "Creative Thinking for Individuals and Groups: An Essay on Creative Thinking for Military Professionals" (Carlisle Barracks, PA: U.S. Army War College, 2008).

10. Diane F. Halpern, *Thought and Knowledge: An Introduction to Critical Thinking*, 4th ed. (Mahway, NJ: Lawrence Erlbaum Associates, 2003), 6.

11. For example, see Gerras (2008).

12. A good example of this perspective is presented in Richard Paul and Linda Elder, *Critical Thinking, Tools for Taking Charge of Your Learning and Your Life* (Upper Saddle River, NJ: Prentice Hall, 2001).

13. Senge, 240.

14. Ibid., 243.

15. Fastabend and Simpson, 21.

16. Jim Collins, *Good to Great. Why Some Companies Make the Leap . . . and Others Don't* (New York: Harper Business, 2001), 74.

17. Jeff McNally, Stephen J. Gerras, and R. Craig Bullis, "Teaching Leadership at the U.S. Military Academy at West Point," *The Journal of Applied Behavioral Science*, 32 (2), 1996, 175-89.

18. Ibid., 21.

19. Donald E. Vandergriff, "Adaptive Leaders Course; Old Dogs Teaching New Tricks," *Army* (December 2007): 49-62.

20. Otto Kroeger, Janet M. Thuesen, and Hille Rutledge, *Type Talk at Work: How the personality types determine your success on the job* (New York: Dell Publishing, 2002).

21. Michael J. Kirton, *Adaption-Innovation in the Context of Diversity and Change* (New York: Routledge, 2003).

22. R.M. Belbin, "Team roles and a self-perception inventory," in *The Effective Manager: Perspectives and Illustrations*, ed. Jon Billsberry (London: Open University Press, 1996).

23. For information see "Project Planning Situation," Human Synergetics International, <www.humansynergetics.com/products/business.aspx> (8 May 2009).

24. Katherine I. Miller and Peter R. Monge, "Participation, Satisfaction, and Productivity: A Meta-analytic Review," in *Leaders and The Leadership Process*, 4th ed., edited by Jon L. Pierce and John W. Newstrom (Boston, McGraw-Hill, 2006), 314.