Capturing the Art of Command for Army 2025
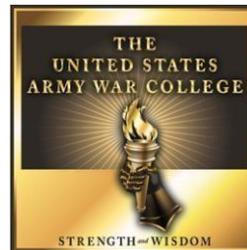
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United States Army War College
Class of 2015

REPORT DOCUMENTATION PAGE

Form Approved--OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)* 01-04-2015	2. REPORT TYPE STRATEGY RESEARCH PROJECT	3. DATES COVERED *(From - To)*
4. TITLE AND SUBTITLE Capturing the Art of Command for Army 2025		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) Colonel James R. Salome United States Army		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dr. Stephen Gerras Department of Command, Leadership, and Management		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College, 122 Forbes Avenue, Carlisle, PA 17013		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Distribution A: Approved for Public Release. Distribution is Unlimited.

13. SUPPLEMENTARY NOTES
Word Count: 5995

14. ABSTRACT

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15. SUBJECT TERMS
Operational Art, Design, Operational Design, Mission Command, Think Tanks, Commanders, PME

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 36	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU	UU		19b. TELEPHONE NUMBER *(w/ area code)*

Standard Form 298 (Rev. 8/98), Prescribed by ANSI Std. Z39.18

USAWC STRATEGY RESEARCH PROJECT

Capturing the Art of Command for Army 2025

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Report Date: 01 April 2015

Page Count: 36

Word Count: 5995

Key Terms: Operational Art, Design, Operational Design, Mission Command, Think Tanks, Commanders, PME

Classification: Unclassified

The art of command, how leaders apply judgment shaped by learning and experiencing their environment, has atrophied over the last 14 years of war. The length of the global war on terrorism, the inability to achieve decisive victory, and the return to Iraq in 2014 reveal a lack of artful command. The complex and ambiguous character of future conflict continues to require judgment under pressure and leaders to rely on their training to produce results. Leaders caught astride a transition between the Industrial Age and a new Information Age struggle to adapt to additional complexity. Generational tensions add strain between leaders educated by sequential Industrial Age models and those educated in a rapidly globalizing Information Age. This monograph will describe how Operational Design provides a tool to restore the art of command, reinforced with examples from transformational business practices and change experts. This restoration requires leaders who commit to demonstrate the art of command, operationalize it, and institutionalize its use.

Capturing the Art of Command for Army 2025

> We're at a strategic inflection point, where we find a different geo-political challenge, different economic challenges, shifting of economic and military power. What we're trying to do is challenge ourselves to respond to that shift.
>
> —GEN Martin Dempsey[1]

The art of command, how leaders apply judgment shaped by learning and experiencing their environment, has atrophied over the last 14 years of war. The length of the global war on terrorism, the inability to achieve decisive victory, and the return to Iraq in 2014 reveal the need for a more artful approach. The complex and ambiguous character of future conflict continues to require judgment under pressure and leaders who rely on their training to produce results. However, leaders caught astride a transition between the Industrial Age and a new Information Age struggle to adapt to additional complexity. Generational tensions add strain between leaders educated by sequential Industrial Age models and those educated in a rapidly globalizing Information Age. This monograph will describe how Operational Design provides a tool to restore the art of command, reinforced with examples from transformational business practices and change experts. This restoration requires leaders who commit to demonstrate the art of command, operationalize it, and institutionalize its use.

This monograph describes the increasingly complex world environment that reflects the shift from an Industrial Age where nation-states measured power in productivity, to a new Information Age where power comes to those most capable of harnessing information to rapidly adapt to their environment. It will describe the evolution of how the Army learns and educates itself as a by-product of the influence of the Industrial Age, and the subsequent impact on its ability to meet current and future challenges. It will examine how the senior leaders of our military recognize the need to

adapt and change, and communicate their vision via numerous documents. Yet despite their best efforts, sweeping change continues to elude the military, and this continuous resistance distinctly lacks new, artful, innovative solutions. The monograph offers a more descriptive definition of the art of command, and how the Army must practice it to prepare for future threats. Examinations of Army and Joint Staff surveys and after action reviews provide indicators that new generations of leaders yearn for artful leadership. Finally, this paper will explain that in the Information Age commanders and staffs must use Operational Design to demonstrate the art of command and increase their collective ability to develop and apply sound judgment. Commanders must demonstrate the behaviors they hope to propagate to embrace ill-structured problems. Staffs must operationalize the art of command through collaborative dialogue and exchange. Professional Military Education (PME) must institutionalize the art of command to enable leaders for the Information Age. The paper begins with an examination of the Industrial Age and its influence on how the Army learns.

<div align="center">The Influence of the Industrial Age</div>

The Industrial Revolution of the 19th century signified a historical shift from a world based on family manufacturing to one based on industrial productivity. With this change, opportunities for social mobility increased and success equated to one's ability to productively contribute to industrial society. Horace Mann, the Massachusetts Secretary of Education in 1843, recognized this global shift to productivity and implemented universal education in the hopes of mass producing educated citizens who contribute to the welfare of his state. He desired to blur the socio-economic divide between white-collar and blue-collar citizens and to "create a tolerant, civilized society."[2] This soon spread across the United States (US) in the hopes of fulfilling one of the key

social functions of education: to create an integrated, stable, and predictable society.[3] This educational model created a structure that enabled students to easily transition into, and contribute to industrial society.[4]

Sequential systems dominated the Industrial Age, where efficient assembly lines converted raw materials into useful creations that made peoples' lives easier. Mann's new American education system replicated these sequential assembly lines of productivity. Students absorbed data, demonstrated proficiency via testing, and eventually emerged from this assembly-line like process certified by a diploma.[5] Efficiency in education, not quality, became the focus. More educated American citizens equated to greater industrial productivity and social opportunity. The US validated this century-long experiment in the post-World War II environment as America dominated a global economy recovering from two world wars and a global depression.

These theories of learning dominated the US education system through the 1980s. In many ways, the Army also defined its role in educating leaders and soldiers using similar, proven educational techniques. In the early 1970s, the Army published Field Manual 100–5, Operations, to communicate its role: "The Army must prepare to fight outnumbered and win, and to win the first battle."[6] The manual used scientific methodology to calculate "force ratios" essential in both offensive and defensive scenarios against a Soviet Army in Europe. This helped focus the Army's education system to train soldiers and leaders to defeat a near-peer threat.

In the 1990s, instruction at Army PME institutions taught the concepts necessary to calculate victory against well-defined, Soviet-based, threats. Courses had predetermined lengths, with instruction focused on ensuring the production of soldiers

with the knowledge to ensure the Army could meet specific strategic requirements. As the Army refined this efficient system to produce forces to win against conventional threats, the threats themselves began to adapt to account for increasing US dominance. While the Industrial Age greatly influenced how the Army approached wartime preparation and readiness, it remains important to consider the adaption of the rest of the world in the face of constant change and adaptation.

The Coming Information Age

In the 1980s the world began the shift from the Industrial Age. A new method of influence and manipulation emerged in the form of terrorist attacks like the US embassy bombing in Beirut in 1983, the hijacking of TWA flight 847 in 1985, and the bombing of Pan Am flight 103 over Lockerbie, Scotland in 1988.[7] These events signified a shift from a bi-polar world dominated by near-peer threats to a dynamic world of competing economic, political, and violent influence.

By 1991 the personal computer emerged and the World Wide Web allowed information sharing on a global scale and with it the shift to a new, Information Age.[8] With this increased access to information came greater understanding of one another and the ability to proactively influence the judgment of others. This increase in information sharing and networking revealed a world that learned more rapidly than ever before, adapted to dynamic global changes, and enabled emergent non-state actors. A world with increased ability to learn at unprecedented rates challenged the US to also adapt and innovate rapidly. Just as the rapid exchange of information calls for the US to embrace change, the Army must reconsider how it learns and innovates to account for an emergent, complex, rapidly adapting environment.

The uncertain character of future warfare concerns many US leaders as they strive to build innovative strategies to meet complex challenges. In 2012, the Chairman of the Joint Chiefs of Staff described future warfare as "an increasingly complex, uncertain, competitive, rapidly changing, and transparent environment."[9] More recently, in 2014, the Army Operating Concept called for anticipatory leaders: "The tenet of innovation challenges us to anticipate changing conditions . . . [and] build leaders and institutions that recognize and leverage opportunities . . . and not allow bureaucratic processes to stifle them."[10] This presents a particular problem in growing adept leaders who see changes in the world and recognize opportunities without becoming anchored in traditional bureaucratic decision-making processes like the Joint Operational Planning Process (JOPP). The Army Learning Concept (ALC) highlights this challenge to leaders: "Leaders must be adept at framing complex, ill-defined problems through design and make effective decisions with less-than-perfect information."[11] These statements highlight a trend facing US leaders and planners; ill-structured, ambiguous conditions exist in all future environments requiring the US military.

The military's recognition of dynamic change in the Information Age challenges the Army to frame what and how it needs to learn. The structured, Industrial Age methods grow increasingly less effective as the threat environment continues to dynamically adapt and change. This calls for a balanced approach to innovation and analytical analysis to take ill-structured problems and move them towards structured solutions.

This call for innovation and analysis requires a new approach to learning best described in the assumptions within the US ALC for 2015. Six of the 10 assumptions specifically relate to and echo concerns expressed by senior leaders. They are:

a. The Army will operate in an era of uncertainty and persistent conflict against a full spectrum of possible threats.

b. The Army will continue to confront unexpected challenges from an adaptive enemy and must respond rapidly in the development of doctrine, training, and education.

c. The Army must prevail in the competitive learning environment.

d. The Army's learning model must be clear in intended outcomes that are rigorous, relevant, and measurable.

e. Army learners must have the opportunity to contribute to the body of knowledge throughout their careers.

f. Continually evolving, complex operational dilemmas over extended time in culturally diverse, joint, interagency, intergovernmental, and multinational operational environments will continue to challenge leaders.[12]

By their nature, "Military operations are complex, human endeavors characterized by the continuous, mutual give-and-take, moves, and counter-moves among all participants."[13] These potential new "complex human endeavors" call for leaders and soldiers willing to consider new learning methods. According to the ALC, we need,

> Adaptable soldiers and leaders who have the cognitive, interpersonal, and
> cultural skills necessary to make sound judgments in complex
> environments, from a tactical to strategic level. Second, the Army must
> have an adaptive development and delivery system not bound by brick-

and-mortar, but one that extends knowledge to soldiers at the operational edge, is capable of updating learning content rapidly, and is responsive to operational Army needs.[14]

These soldiers and leaders must interpret information from a myriad of sources, make sense of it, and use it to plan and synchronize military operations. Army doctrine describes planning as: "The art and science of understanding the situation, envisioning a desired future, and laying out effective ways of bringing the future about."[15] The "art" required for understanding is difficult to grasp, particularly considering the pressure placed on soldiers and leaders after 14 years of war. The "science" of understanding has risen to the fore, pressured by time-sensitive decisions and the demand to demonstrate progress. Understanding this elusive "art" is essential for leaders to ensure the US maintains its competitive advantage.

Understanding the Art of Command

The Army defines the art of command as "the creative and skillful exercise of authority through timely decision-making and leadership."[16] One must understand the Army's definitions of authority, decision making, and leadership to begin the examination of the art of command. They are:

a. Authority- "the delegated power to judge, act, or command."[17]

b. Decision Making- "commanders and staffs applying judgment to gain understanding."[18]

c. Leadership - "exercising influence by developing mutual trust to create shared understanding."[19]

The requirement for understanding and judgment consistently appears across these definitions. Again, to truly discover the roots of the art of command one must examine the specific words chosen to describe it. Merriam-Webster defines

7

understanding as "the knowledge and ability to judge a particular situation or subject."[20]

Judgment is defined as "the process of forming an opinion or evaluation by discerning and comparing."[21] This process of forming an opinion, or learning, is defined as: "To gain knowledge or skill by studying, practicing, being taught, or experiencing something."[22] From this examination a new definition of the art of command in the Information Age emerges: How commanders and staffs apply judgment as they form opinions shaped by learning and experiencing their environment.

To improve the practice of the art of command one must examine its deficiencies. The Center for Army Leadership's Annual Survey of Army Leaders (CASAL) provides insights, based on Army wide surveys of Soldiers and leaders that highlight those possible deficiencies. The Joint Staff's Joint Force Development (J7) section interacts with commanders and staffs across the military and likewise reports patterns, trends, and deficiencies in the manner the military plans and makes decisions. An examination of these sources highlights three principle deficiencies requiring further consideration:

a. Commanders do not demonstrate the art of command.

b. Staffs do not understand their role in operationalizing the art of command.

c. Institutional PME fails to emphasize the art of command.

This paper will now examine these three deficiencies in depth.

Demonstrate It

Soon after the invasion of Iraq in 2003, Lieutenant General (LTG) William Wallace, the commander of Army forces in Iraq said, "The enemy we're fighting is a bit different than the one we war-gamed against."[23] This illustrates the emergent complexity and changing character of warfare. LTG Wallace and his staff prepared for a conventional threat that rapidly melted under US/Coalition military strength. However, a

non-conventional threat resisted the Coalition's presence, ushering in eight more years in Iraq. In examining CASAL and J7 observations, commanders educated under the Army's Industrial Age systems of learning felt challenged by the responsibility to help their organizations overcome complexity due to the rapid adaptation of the environment and sheer volume of information required to gain understanding.

Commanders play a critical role in demonstrating the art of command in the Information Age. In strategic and operational headquarters, their interactions uniquely enable them to, "Maintain a dialogue with higher echelon headquarters and/or national and international leadership."[24] The ability of the commander to interpret and filter this interaction enables him to: "Translate that dialogue into clear concise commander's guidance and intent."[25] This unique exposure may help, but also may hurt, if the commander filters information he cannot retain or deems unimportant.

Dr. Carlo Kopp, an Australian university professor and defense analyst, describes this tendency towards filtering as "information fatigue syndrome (IFS)," characterized by: "A weariness or overwhelming feeling of being faced with an indigestible or incomprehensible amount of information with symptoms including paralysis of analytical capacity, anxiety, self-doubt . . . leading to foolish decisions and flawed conclusions."[26] Kopp offers that: "People who are properly taught critical thinking, problem solving, and decision-making techniques appear to be least susceptible to IFS because their habitual thinking process is exactly what is needed to filter substance from clutter most effectively."[27]

The Operational Art, when used effectively, helps commanders apply critical thinking to overcome biases and defeat IFS. Operational Art is: "The application of

creative imagination by commanders and staffs--supported by their skill, knowledge, and experience."[28] More specifically, Department of Defense (DOD) doctrine provides a specific tool, Operational Design, where commanders: "Draw on Operational Design to mitigate the challenges of complexity and uncertainty, leveraging their knowledge, experience, judgment, and intuition to generate a clearer understanding."[29]

Reports by J7 observation teams acknowledge that Operational Design is underutilized, but encourage its use because it helps move "the joint force away from what some viewed as a planning-centric, checklist mentality to a more commander-led, artful analysis of the environment."[30] Commanders must embrace the responsibility to work collaboratively with their staffs early in the planning process to create context and shared understanding. This interaction provides not only short-term assistance in problem shaping, but it demonstrates the art of command to junior leaders who model this behavior throughout their careers.

CASAL reports from 2010-2013 repeatedly mention the importance of commanders demonstrating desired behavior, stating that: "Subordinates follow what they do, more than what they say."[31] Direct interaction guides the effort, helps commanders benefit from dialogue with their staffs, demonstrates the importance of considering the staffs' opinion, and emphasizes the importance of their contributions to shaping collective understanding. Shaping collective understanding remains an essential role of commanders as they exercise the art of command. An examination of prominent authors from the business world provides further insight into an analogous view of how leaders make sense of complexity for their teams. Roger Martin describes this phenomena of shaping understanding collaboratively and its importance in his book

"The Design of Business" where he illustrates a "knowledge funnel" divided into three sections: Mystery, Heuristic, and Algorithm.[32]

The "Mystery," or large open end of the funnel, denotes ill-structured situations facing organizations. Building and maintaining a global coalition against terror and fighting an insurgency in Iraq and Afghanistan provide examples of these ill-structured, complex situations the US faced since 2001. The commander's wisdom and experience at this stage helps the organization recognize potential patterns hidden within a complex environment for further examination as they collectively begin to make sense of what they see.

The "Heuristic," in the middle of the funnel, describes the process of making sense of the "mystery," examining its details and discovering patterns. Commanders demonstrate the "art" as they apply intuition to decide on priorities necessary to shape the heuristic to a set of ideas that narrows the organization's understanding of the environment to a manageable level. Design methodology allows military commanders to leverage the intellectual strengths of their organizations to refine ill-structured mysteries into heuristics.

The bottom, narrow portion of the funnel, Martin describes as an "Algorithm," or "fixed formula," that factors in numerous variables to produce consistent outcomes. Once the commander guides the staff to the algorithm level of understanding they commonly apply the JOPP to develop detailed plans. Joint Publication (JP) 5-0 defines JOPP as: "An orderly, analytical process, which consists of a set of logical steps to examine a mission . . . and produce a plan or order."[33] Martin's description of the "knowledge funnel" provides a parallel construct to see how the art of command applies

11

to existing planning methods. Commander involvement throughout planning aids the entire organization's ability to learn and develop collective understanding.

Commanders and leaders play a central role in these foundational methods that facilitate Operational Art. JP 5-0 highlights: "Commanders who are skilled in the use of Operational Art provide the vision that links tactical actions to strategic objectives."[34] Commanders play a vital role in applying insight and guidance unique to their experience. Clausewitz said:

> When all is said and done, it really is the commander's coup d'oeil, his ability to see things simply, to identify the whole business of war completely within himself that is the essence of good generalship. Only if the mind works in this comprehensive fashion can it achieve the freedom it needs to dominate events and not be dominated by them.[35]

The ambiguous, modern environment requires that commanders and leaders explore all systems, what Clausewitz calls the "whole business of war," that constantly adapt as strategic options develop through the application of operational art. The intuition and experience of senior leaders enables staffs to move forward with the benefit of the commander's experience and empowerment. This monograph will now discuss the role of staffs to understand Operational Design and how to operationalize the art of command.

Operationalize It

Military staffs play a critical role in helping commanders think through the myriad of interdependent relationships in this age of complex, adaptive threats. General (GEN) Dempsey describes the complementary role of the staff as: "A continual cognitive effort to understand, decide, and to direct effectively the achievement of intent."[36]

The application of Operational Art calls for commanders and staffs to, "Build and maintain situational understanding" where situational understanding is defined as: "The

product of applying analysis and judgment to relevant information to determine the

relationships among the operational mission variables to facilitate decision-making."[37]

Prior to the advent of Design in 2010, the military taught and utilized structured

processes like JOPP to drive decision making. Planning against near-peer threats

enabled these structured processes to develop into military cultural norms for decision

making. The cultural tendency to utilize decision-making processes trained prior to

2010, like JOPP and the Military Decision Making Process (MDMP), strongly influences

the behavior of many planners who lack significant Design training and experience.

Planners must adapt new methods like Design to identify the patterns that aid in making

sense of multiple, interdependent problems. If they do not adapt, reliance on only

culturally accepted practices, training, and "shared basic assumptions"[38] will continue to

strongly influence the judgment of commanders and staffs. This assertion is so

important it begs repeating; if commanders and staffs fail to adapt their judgment in the

Information Age, reliance on only culturally accepted practices, training, and "shared

basic assumptions"[39] will weaken their ability to deal with complexity and ambiguity.

Human nature leads to this type of judgment. Psychologist Philip Tetlock

identifies four human characteristics that build obstacles to good judgment for military

planners:

     a. "our collective preference for simplicity;

     b. our aversion to ambiguity and dissidence;

     c. our deep-rooted need to believe we live in an orderly world; and

     d. our seemingly incorrigible ignorance of the laws of chance."[40]

US military culture drives planners towards determining simple solutions, eliminating

ambiguity, restoring order, and convincing themselves that they have sufficiently

mitigated risk. New planning methods, like Design Methodology, combat this norm by

helping commanders and staffs in conceptual planning by "focusing on developing good

ideas and expanding the range of ideas under consideration."[41]

In a recent DOD paper the J7 staff emphasizes an interesting phenomenon that

staffs seek to drive their efforts to structure very rapidly, abandoning their Design work

to move into the familiar territory of JOPP. Specifically they cite: "critical time spent

crafting a problem statement may often be shelved without future reference, or the

problem statement simply becomes the mission statement."[42] This allows them to apply

knowledge they easily comprehend utilizing the JOPP without spending time analyzing

and evaluating their original problem.

Blooms Taxonomy helps to interpret these tendencies. Dr. Benjamin Bloom

created his taxonomy in 1956 to: "Promote higher forms of thinking . . . such as

analyzing and evaluating concepts . . . rather than just remembering facts."[43] The

taxonomy provides six levels of thinking, each requiring greater levels of cognitive effort.

Starting with the simplest level they are:

    a. Knowledge – recall of information

    b. Comprehension – understanding, summarizing

    c. Application – using problem-solving methods

    d. Analysis – identifying and analyzing patterns

    e. Synthesis – design and invention, inferring, predicting

    f. Evaluation – assessing theories, judging[44]

Staffs trained in problem solving, particularly when operating under time constraints, focus on collecting information, summarizing it, and applying the JOPP to solve their problem. More experienced strategic senior leaders analyze the patterns of their environment, synthesize meaning from those patterns, and use judgment to evaluate an organizational direction. Design provides a methodology to apply all six steps of Blooms Taxonomy. It enables staffs and commanders to collaboratively work to sort through massive amounts of information associated with complex problems, understand it, infer patterns, and use judgment to drive decisions.

The 2012 CASAL report states that:

Deep learning principles can be applied by incorporating higher levels of Bloom's Taxonomy encouraging students to analyze, evaluate, and create. [The Institutional Army should] consider advanced learning principles for deep learning, including experience-based learning, frequent feedback, maintaining learning motivation . . . and maintaining a learner-centric approach.[45]

Senior leader involvement in learning in the Information Age of complex problems remains an issue in these CASAL reports. Commanders must work with their staffs to learn collectively by demonstrating the interaction and openness necessary to gain understanding.

Staffs must take responsibility for enabling the art of command through critical/creative thinking. In the Information Age commanders cannot process all the data necessary for understanding and judgment without an engaged staff. Staff officers must avoid their tendency towards simplicity and seek to think at the upper ends of Bloom's Taxonomy along with their commanders. Design methodology provides a tool nested within DOD doctrine that enables the level of collaborative interaction necessary for learning in a complex world. While commanders and staffs play critical roles in the

effective application of the art of command, this monograph will now explain how the Institutional Army must take responsibility for training the art of command utilizing Operational Design as a vehicle for learning.

Institutionalize It

The Institutional Army faces significant challenges as increased access to information and advanced technology combine to create a dynamic global learning environment. The ALC acknowledges that the Army must, "confront unexpected challenges from an adaptive enemy and must respond rapidly in the development of doctrine, training, and education."[46] Constant enemy and environmental adaptation require soldiers and leaders who consistently learn, prioritize, and apply judgment.

Many students attending PME after 2001 arrived with first-hand experience of the "unexpected challenges" faced on contemporary battlefields. The Chairman of the Joint Chiefs, Army Chief of Staff, and the Army Training and Doctrine Command Commander describe ill-structured, ambiguous conditions where soldiers and leaders must: "make effective decisions with less-than-perfect information."[47] Students of contemporary warfare want education that helps deal with these complexities, yet feel as though PME falls short. CASAL surveys reflect that many soldiers feel their institutional PME does not prepare them for the "competitive learning environment"[48] of the Information Age. In fact, a six-year trend shows that institutional education is "rated lowest in terms of positive impact on their development."[49] The 2009 CASAL "showed a sharp decline in favorable perceptions of the effectiveness of Army schools."[50] Students want instruction to help them apply judgment as they experience their environment, they want to learn the "art" of conceptualizing and understanding complexity.

An examination of the Army's educational focus on conceptual planning compared to detailed planning yields interesting results. JP 5-0 states that Operational Design provides a tool for conceptual planning that allows commanders to: "Mitigate the challenges of uncertainty."[51] Likewise, JOPP provides a tool for detailed planning, "An orderly, analytical process" that "consists of logical steps to examine a mission."[52] Students need the ability to take "less-than-perfect information" to conceptualize a plan; they also need the ability to use "an orderly, analytical process" to develop a detailed plan.

Operational Design therefore must have at least an equal amount of time allocated in PME to ensure students can utilize conceptual planning along with detailed planning to make sense of ill structured, "Less-than-perfect information."[53] Examination of the hours of instruction in Army PME revealed that from the rank of captain to colonel students at most may receive 2441.5 hours of instruction. During instruction in their respective Captains Career Course, Command and General Staff College, School of Advanced Military Studies, and the Army War College they currently receive 248.5 hours of instruction in Operational Design and JOPP/MDMP, 10.2% of their professional education. Of this 248.5 hours of planning instruction, Design accounts for only 35%. In a world dominated by uncertainty, students must focus energy on Design and conceptual planning at minimum more than 50% of their planning education.[54] Students must learn the tools that will best equip them for the problems they face.

The CASAL feedback calls for instruction on: "Enduring principles that are relevant to the demands leaders face in day-to-day activities"[55] and, "Put training into real-world perspective."[56] The 2012 CASAL reports: "Leaders have consistently rated

experiential learning opportunities as the most favorable."[57] These findings reflect

students transitioning their thinking to the Information Age and understanding the need

to learn while immersed in a complex, rapidly adapting environment. Institutional PME

must adapt to reflect these changes of the Information Age and a renewed focus on the

art of command. Students want relevant, timely instruction that solves real-world Army

problems as they learn.

Dr. M. Merrill, a Brigham Young professor and instructional design theorist, offers

four principles to help guide this shift. The first principle states: "Learning is promoted

when leaders are engaged in solving real-world problems."[58] PME students should

utilize exercises and problem-solving techniques they directly correlate with what they

expect to face in the Operational Army, not fictional scenarios. Although complex role

problems offer significant challenges, iterative exposure with increasing complexity will

aid students in learning as they develop greater capability.

Second, Merrill offers: "Learning is promoted when relevant previous experience

is activated."[59] Using real-world problems will allow students to tap into recent

experience from previous deployments. Utilizing a methodology like Design, coupled

with realistic ill-structured problems, will aid students in the application of experience

combined with new methods when encountering unexpected challenges.

Next he suggests: "Learning is promoted when the instruction demonstrates what

is to be learned rather than merely telling information about what is to be learned."[60]

Dialogue with operational commanders demonstrating how they deal with ill-structured

problems with students would enhance both the learning of students and the decision-

making abilities of commanders. Involving commanders in the learning helps students

filter relevant information, understand relevance, and see how commanders arrive at decisions.

Finally, Merrill states: "Learners are encouraged to integrate the new knowledge into everyday life."[61] Involving students actively with operational staffs and providing them the opportunity to demonstrate increasing proficiency enhances their abilities to test hypothesis and defend their opinions. Over time this develops a culture of dialogue were interaction helps students adjust their solutions to solve real problems. This provides both enhanced learning for students and operational staffs simultaneously. As this practice continues, the resultant quality of staff officers would increase the critical and creative thinking of the Army as a whole and provide the adaptive leaders better judgment called for in the ALC. A summary of the recommendations of this monograph below will bring together many of the ideas mentioned in the preceding pages.

Recommendations

The art of command in the Information Age requires commanders and staffs to apply judgment as they form opinions shaped by learning and experiencing their environment. Analyzing ill-structured problems remains necessary in the foreseeable future, yet less than 5% of PME is devoted to Operational Design doctrine that specifically addresses ill-structured problems. The responsibility falls across the entire Army and specifically on commanders, staffs, and institutional PME. Emphasizing the practice of the art of command, utilizing design as a practical method to force the effort, will enable the Army to prepare future leaders for the complex challenges ahead. The following recommendations provide some areas of focus to train leaders on the art of command.

<u>Improve Commanders' Thinking</u>

The Army focuses too little on the art of command and conceptual thinking to deal with ambiguity. However, given the gap between Industrial Age and Information Age learning methods, commanders may lack the education and cognitive tools required to revitalize the art of command. Dr. Roger Martin discusses this gap by comparing Conventional versus Integrative Thinking. Conventional Thinking demonstrates the Army's default to simplification: "We crave the certainty of choosing between well-defined alternatives and the closure that comes when a decision is made."[62] He highlights the danger in this stating: "Conventional Thinking glosses over potential solutions and fosters the illusion that creative solutions don't actually exist."[63] This is unacceptable for our Army, and Martin offers that Integrative Thinking provides a solution. Integrative thinkers "have the pre-disposition and the capacity to hold in their heads two opposing ideas at once"[64] and then "creatively resolve the tension between those two ideas by generating a new one that contains elements of the others but is superior to both."[65]

Martin suggests Integrative Thinking as a "habit of thought"[66] that everyone can develop. For the Army the challenge lies in training commanders raised in the Army's Industrial Age learning methods to use Integrative Thinking. Operational Design offers an answer that provides a vehicle to incorporate Integrative Thinking and improve the art of command. Martin offers four habits that parallel Operational Design and may help develop Integrative Thinking for commanders educated using Industrial Age models. They are:

    a. Determine Salience (or system inconsistencies) – seek less obvious but potentially relevant factors.

b. Analyze Causality – consider multidirectional and nonlinear relationships among variables.

c. Envision the Decision Architecture – see problems as a whole and how decisions effect one another

d. Achieve Resolution – creatively resolve tensions to generate innovative outcomes.[67]

These methods could potentially close the gaps and advance the Army's ability to apply the art of command utilizing Operational Design.

Demonstrate Openness

Commanders must demonstrate the art of command by learning and experiencing their environment collaboratively with superiors, peers, and subordinates. They must abandon their biases and embrace the openness required to enhance shared context and understanding, and hold one another accountable. This shared learning experience provides a unique leader development forum for all parties to grow and creates a culture of learning while simultaneously demonstrating how commanders think through complexity to develop intent.

Operationalize Complex Analysis

Staffs must see Design as an operational necessity for complex problem analysis and decision-making. They must utilize it consistently to see its value to identify interdependent patterns within complex adaptive systems to aid in judgment. Furthermore they must understand the military cultural biases that inhibit judgment to ensure they address the root problems associated with complex environments.

Operationalize Cognitive Rigor

Staffs must increase the cognitive rigor to push one another to higher levels of thinking. They should consider Blooms Taxonomy and the natural tendency to drift to less taxing mental models involving the recall of knowledge, summarization of data, and the application of that data to solve problems. Senior staff officers must challenge their teams using Design to elevate their critical and creative thinking to analyze environmental patterns, synthesize meaning from those patterns, and develop judgment to evaluate organizational direction.

Institutionalize Conceptual Planning

The Institutional Army must emphasize the art of conceptualizing and understanding complexity using operational Design as a tool to facilitate instruction. In a world described by senior military leaders as complex, uncertain, and rapidly changing, military professionals must embrace the need to emphasize planning for ill-structured environments. The current preponderance of planning education focuses 65% on structured problems through processes like JOPP and MDMP. Education on design at all levels of PME must focus at least 50% of training on planning skills that address ill-structured problems.

Institutionalize Think Tanks

Directly link institutional learning with the Operational Army. Engage the Operational Army in institutional learning by utilizing real-world problems like those on the US Army War College's Key Strategic Issues List that ties Operational Army problems to students' instruction. In an environment of decreasing resources, this would increase the cognitive energy available to the Operational Army, creating educational think tanks that enhance cooperative decision-making between the Operational and

Institutional Army. For students, direct linkage to real-world problems for the Army will enrich the academic context and learning environment for students and embed the culture of collaborative decision-making. Students will learn the mechanisms through which operational commanders make decisions and evolve their own judgment and communications techniques. The Army must emphasize a culture of dialogue to develop the art of command involving both operational staffs and PME students where both elements fully embrace contemporary, ill-structured problems that allow the free exchange of ideas and forces students to defend their ideas against the demands of real-world problems.

Conclusion

The Chairman of the Joint Chiefs of Staff describes future warfare as "an increasingly complex, uncertain, competitive, rapidly changing, and transparent operating environment."[68] The increasingly complex environment reflects the shift from an Industrial Age where nation-states' power was measured in productivity, to a new Information Age where power comes to even non-state actors based on their ability to rapidly understand and adapt to their environment. In the Information Age the Army must develop leaders who understand the complexity of conflict environments to prepare for future warfare. Developing a deeper understanding of the Operational Art and effectively exercising the art of command will provide the proper educational environment to ensure the growth of future leaders.

Joint and Army doctrine for Operational Design provides a methodology to encourage open dialogue with staffs at all levels while simultaneously facilitating commanders' ability to understand, visualize, describe, and direct. However, few commanders help their staffs apply the full Operations Process that includes Design,

and therefore skip critical opportunities to demonstrate the operational art. Staffs avoid

conceptual planning in favor of detailed planning, and in so doing vault over the

opportunity to operationalize the art of command and harness the cognitive strength of

collaborative dialogue, critical and creative thinking, and trust built through cooperative

exchange. Renewed focus on institutionalizing the art of command and conceptual

planning within Professional Military Education will enable leaders prepared for the

Information Age. The reality of complex adaptive systems characterizing future conflicts

demands the art of command. Effective utilization of the art of command provides the

components necessary to ensure military leaders harness the corporate intellect to

anticipate change, leverage opportunities, and gain decisive advantage.

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