



The U.S. Army Learning Concept for 2015

20 January 2011



Foreword

*From the Commanding General
U.S. Army Training and Doctrine Command*

“[t]he Army must continually adapt to changing conditions and evolving threats to our security. An essential part of that adaptation is the development of new ideas to address future challenges.”

Army Operating Concept 2010

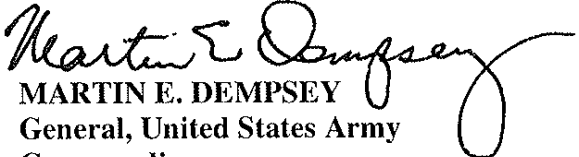
We live in a much more competitive security environment. This means that we have to learn faster and better than our future adversaries. Stated a bit differently, we must prevail in the competitive learning environment.

The Army Learning Concept 2015 is an important component of our effort to drive change through a campaign of learning. It describes the learning environment we envision in 2015. It seeks to improve our learning model by leveraging technology without sacrificing standards so we can provide credible, rigorous, and relevant training and education for our force of combat-seasoned Soldiers and leaders. It argues that we must establish a continuum of learning from the time Soldiers are accessed until the time they retire. It makes clear that the responsibility for developing Soldiers in this learning continuum is a shared responsibility among the institutional schoolhouse, tactical units, and the individuals themselves.

The Army Learning Concept 2015 does not focus on any particular technology, but rather focuses on the opportunities presented by dynamic virtual environments, by on-line gaming, and by mobile learning. It speaks of access to applications, the blending of physical and virtual collaborative environments, and learning outcomes.

The Army Learning Concept 2015 is nested within our Army’s framework of concepts. The core pillars of this framework are the Army Capstone Concept, the Army Operating Concept, the U.S. Army Training Concept, and the Army Leader Development Strategy. The Army Learning Concept recognizes and addresses the arrival of a new generation of Soldiers in our ranks who have grown up in a digital world.

The goal of The Army Learning Concept 2015 is to ensure that the people of this great Army remain our competitive advantage over our adversaries.


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 General, United States Army
 Commanding

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TRADOC Pamphlet 525-8-2

20 January 2011

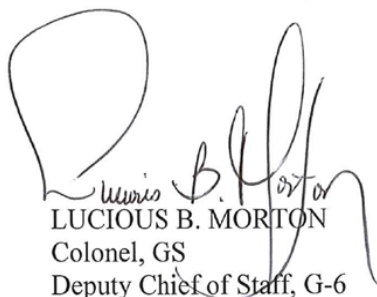
Military Operations

THE U.S. ARMY LEARNING CONCEPT FOR 2015

FOR THE COMMANDER:

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History. This publication is a new Commanding General, United States (U.S.) Army Training and Doctrine Command (TRADOC) directed concept developed as part of the Army Concept Framework for future Army forces.

Summary. TRADOC Pamphlet (Pam) 525-8-2, The U.S. Army Learning Concept for 2015, is the Army's visualization of how the Army will train and educate Soldiers and leaders in individual knowledge, skills, attributes, and abilities to execute full-spectrum operations in an era of persistent conflict.

Applicability. TRADOC Pam 525-8-2 is the foundation for the development of individual Soldier and leader learning and will serve as the baseline for a follow-on capabilities based assessment as a part of the Joint Capabilities Integration and Development System effort. As the basis for performing this assessment, TRADOC Pam 525-8-2 suggests a set of capabilities that guides the development of an enhanced 2015 learning environment centered on the learner and provides access to relevant learning content throughout the career span. It acknowledges the requirement to consider all the variables of the future operational environment: political, military, economic, social, informational, infrastructure, physical environment, and time. It also acknowledges the requirements for mission variables such as the mission, time, and civil considerations. This concept applies to all TRADOC, Department of Army (DA) and Army Reserve component activities.

Proponent and exception authority. The proponent of this pamphlet is the TRADOC Headquarters, Director, Army Capabilities Integration Center (ARCIC). The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. Do not supplement this pamphlet without prior approval from Director, TRADOC ARCIC (ATFC-ED), 33 Ingalls Road, Fort Monroe, VA 23651-1061.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, TRADOC (ATFC-ED), 33 Ingalls Road, Fort Monroe, VA 23651-1046. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program Proposal).

Distribution. This publication will be available on the TRADOC Homepage at <http://www.tradoc.army.mil/tpubs/pamndx.htm>.

Summary of Change

TRADOC PAM 525-8-2
The U.S. Army Learning Concept for 2015

This pamphlet, dated 20 January 2011-

- o Describes the need for a new learning model that meets the All-Volunteer Army's need to develop adaptive, thinking Soldiers and leaders capable of meeting the challenges of operational adaptability in an era of persistent conflict.
 - o Describes how the Army learning model supports the TRADOC Pam 525-3-0 requirement to operate under conditions of uncertainty and complexity.
 - o Describes how the Army learning model supports the TRADOC Pam 525-3-1 requirement to produce leaders and forces that exhibit a high degree of operational adaptability.
 - o Focuses on individual Soldier and leader learning in initial military training, professional military education, and functional courses.
 - o Describes a continuous adaptive learning model that instills 21st century Soldier competencies through a learner-centric 2015 learning environment, supported by an adaptive development and delivery infrastructure that enables career-long learning and sustained adaptation.
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Our enemies are always learning and adapting. They will not approach conflicts with conceptions or understanding similar to ours. And they will surprise us.

The Joint Operating Environment 2010

Chapter 1 Introduction

1-1. Purpose and scope

a. The U.S. Army's competitive advantage directly relates to its capacity to learn faster and adapt more quickly than its adversaries. The current pace of technological change increases the Army's challenge to maintain the edge over potential adversaries. In the highly competitive global learning environment where technology provides all players nearly ubiquitous access to information, the Army cannot risk failure through complacency, lack of imagination, or resistance to change. Outpacing adversaries is essential to maintain the Army's global status and to fulfill its responsibilities to the nation. The current Army individual learning model is inadequate to meet this challenge. The Army must take immediate action to develop a capacity for accelerated learning that extends from organizational levels of learning to the individual Soldier whose knowledge, skills, and abilities are tested in the most unforgiving environments.

b. The purpose of TRADOC Pam 525-8-2, *The U.S. Army Learning Concept for 2015* (referred to as ALC 2015), is to describe an Army learning model that meets the All-Volunteer Army's need to develop adaptive, thinking Soldiers and leaders capable of meeting the challenges of operational adaptability in an era of persistent conflict.¹ ALC 2015 describes a learning continuum that blurs the lines between the Operational Army and the Generating Force by meshing together self-development, institutional instruction, and operational experience. This is a learner-centric continuum that begins when an individual joins the Army and does not end until retirement. The learning model enhances the rigor and relevance of individual learning through routine assessment of 21st century Soldier competencies (described in [chapter 3](#)) that enable success across full-spectrum operations. It is a learning model that adapts to fluctuations in learning time and maximizes opportunities to master fundamental competencies. It is open to inventiveness, to input of learner knowledge, and advances in learning technologies and methods. ALC 2015 describes an adaptive, career-long individual learning model that spans space and time to ensure Soldiers and leaders receive a level of preparation equal to the value of their service to this Nation.

c. ALC 2015 focuses on the Active Army and Reserve component individual learning in initial military training (IMT), professional military education (PME), and functional courses. ALC 2015 aligns with and compliments *The Army Leader Development Strategy* and TRADOC Pam 525-8-3, *The U.S. Army Training Concept 2012-2020*. Together, these strategic documents support TRADOC Pam 525-3-0 and outline a path forward for individual training and education, leader development, and collective training.

d. Transition to the learning model in ALC 2015 must begin immediately to provide Soldiers and leaders with more relevant, tailored, and engaging learning experiences through a career-long continuum of learning that is not location-dependent, but accessed at the point of need. The Army must challenge and inspire learners who have grown up in a digital world, are adept at using technology, demand relevance, and require feedback and support from peers and mentors. The Army must also challenge and meet the needs of seasoned Army professionals who have experienced repeated deployments and bring a wealth of experience to the learning system.

1-2. Assumptions

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. Learning is best achieved at the point of need and therefore must be accessible in a career-long learning continuum, rather than limited to specific timeframes or locations.

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

g. Soldiering requires a foundation of comprehensive fitness, Army values, the Warrior Ethos, and professional competence.

h. Fundamental competencies must be reinforced by maximizing time on task.

i. Continually evolving, complex operational dilemmas over extended time in culturally diverse, joint, interagency, intergovernmental, and multinational operational environments will continue to challenge leaders.²

j. Time, manpower, and resources available for learning will continue to be limited.³

1-3. Current learning model (baseline)

a. The Army's current learning model (see [appendix D](#)) is the baseline from which ALC 2015 develops a new learning model. Designed to support a peacetime Army, this decades-old model is bound by outmoded ways of doing business, outdated technology, and is only capable of limited innovation. Over the last decade of conflict, the Army worked to find ways to meet the rapidly evolving needs of the Operational Army under extremely challenging conditions. In

spite of these efforts, learning and adaptation occurred primarily in combat units while the institutional Army struggled to keep pace.

b. The Army trains and educates over a half million individuals per year in a course-based, throughput-oriented system that provides the Operational Army with Soldiers from IMT, functional courses, and PME. This number fluctuates by as much as 10 percent annually, resulting in management and resourcing challenges. High operating tempo over the last decade resulted in backlogs, waivers, and challenges to align outputs with the Army force generation (ARFORGEN) cycles.

c. Current learning is typically instructor-led, timed to predetermined course lengths, and not synchronized to meet individual learner needs.⁴ Current instruction is based on individual tasks, conditions, and standards, which worked well when the Army had a well-defined mission with a well-defined enemy. Similarly, while critical thinking is frequently a course objective, instruction primarily delivers only concepts and knowledge. Mandatory subjects overcrowd programs of instruction (POIs) and leave little time for reflection or repetition needed to master fundamentals. Passive, lecture-based instruction does not engage learners or capitalize on prior experience. Learner assessments are frequently perfunctory, open-book tests that lack rigor and fail to measure actual learning levels. The Army often assigns instructors arbitrarily, rather than through a selection process that accounts for subject matter expertise or aptitude to facilitate adult learning. Some instructors have skill gaps due to multiple deployments in non-military occupational specialty (MOS) and/or branch assignments. With few exceptions, instructor positions are not perceived to be career-enhancing assignments.

d. The Army routinely assumes risk in the institutional Army in terms of personnel and equipment, but learning models have not adjusted to fit within these seemingly permanent constraints. Cumbersome training development policies and procedures cannot be supported with the number of training developers assigned or the skill sets available, resulting in outdated courses and workload backlogs. Schoolhouses typically receive new equipment later than operational units and in insufficient quantities, yet alternative virtual training capabilities are slow to be adopted and there is a lack of connection to the Operational Army.

e. Currently, mobile training teams (MTTs) mitigate the growing backlogs in PME. Prior to 2005, TRADOC sent fewer than 100 MTTs to unit locations. In fiscal year (FY) 10, TRADOC sent well over 2,400 MTTs to unit locations. These ad hoc arrangements leave combatant commanders unsure of what combat capability will arrive in theater⁵ and do little to address the long-term challenge of balancing quality of life, ARFORGEN schedules, and professional development requirements. PME course content often lags behind the learner's level of experience and provides limited preparation for the next assignment.

f. Although the Army was an early adopter of distributed learning (dL) nearly 20 years ago, the program did not fully realize its intended goal of anytime, anywhere training. Inferior technology, outdated processes, and antiquated policies hamper today's program. Slow contracting processes, inflexible updates, and inadequate facilitator support degrade the Army's ability to meet learning needs through distributed methods.⁶ Soldiers complete mandatory dL courses on personal time in a culture that promotes lifelong learning as an ideal, but often does

not follow through with supporting actions. Reserve component Soldiers complete dL products on personal time, while simultaneously working at the unit and their primary job. Current dL offerings are of uneven product quality with too many boring, unengaging, “death by slide presentation” lessons. Soldiers experience frustration with excessive download times of up to 10 minutes per page.⁷ The next generation of dL requires a massive transformation of policies, products, and support structure to deliver engaging, relevant professional development products that Soldiers can access as easily and accept as willingly as their personal digital devices, computers, and game systems.

g. Institutional resourcing models designed for a peacetime force are not adaptive to the evolving needs of the Operational Army in an era of persistent conflict. The number of instructor contact hours (ICH) drives the current resourcing model and is an obstacle to implementing any instructional strategy that is not face-to-face and instructor-centric.⁸ The current model incentivizes schools to maintain the brick and mortar mindset with a limited range of learning methodologies. In the current learning model, significant changes to learning programs require planning cycles of 3 to 5 years to implement, a timeframe that is not rapid enough to adapt to evolving operational demands.⁹

1-4. Meeting the challenge of operational adaptability

a. Operational requirements and learning model capabilities are out of balance. Current practices reflect an Army that values experience over training and education. Operational experience has become paramount in the selection process for promotion, while perceptions of the effectiveness and relevance of institutional training and education continue to decline.¹⁰ Experience alone, however, is not sufficient preparation for the complexity of future operational challenges. This unsustainable trend ignores the requirement for Soldiers to possess a broad foundation of learning to better prepare them to meet future challenges across the spectrum of conflict.¹¹ The peacetime conditions and assumptions that underpin the current individual learning model are no longer valid, but simply making evolutionary changes will be insufficient to prepare Soldiers for the complexity and uncertainty of future wars. The Army will not prevail in the competitive global learning environment unless it sheds outmoded processes and models and replaces them with a more adaptive learning model.

b. ALC 2015 needs to drive the Army to keep pace with changes in the Operational Army by being proactively adaptive, not through reactive systems and processes. This concept establishes the path to develop a more adaptive learning model beginning with an articulation of the current baseline learning model in this chapter. [Chapter 2](#) asserts key operational and learning environment factors that provide the conceptual foundation for transforming the Army’s approach to learning. [Chapter 3](#) is a declaration of the continuous adaptive learning model that engages learners in a career-long continuum of learning sustained by adaptive support systems. [Chapter 4](#) and [appendix B](#) identify a comprehensive path to achieve the objectives in ALC 2015.

c. The objectives in ALC 2015 will require substantial changes in infrastructure and policy; however, the urgency to build a competitive Army learning model cannot wait until 2015. It must begin now. Many of the actions necessary to achieve ALC 2015 goals are within reach,

and the first steps must begin immediately to establish a more competitive learning model. All course proponents can start now by taking the following three steps.

(1) Convert most classroom experiences into collaborative problem-solving events led by facilitators (vice instructors) who engage learners to think and understand the relevance and context of what they learn.

(2) Tailor learning to the individual learner's experience and competence level based on the results of a pre-test and/or assessment.

(3) Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.

Above all else, future Army forces will require organizations, Soldiers, and leaders who can understand and adapt to the complexity and uncertainty of future armed conflict.

TRADOC Pam 525-3-0

Chapter 2 Conceptual Foundation

2-1. Introduction

Lessons from nearly a decade of conflict, anticipated challenges, and technological opportunities compel us to re-examine the Army learning model. Building upon the current learning model (baseline) described in [chapter 1](#), this chapter describes some of the key operational and learning environment factors that provide the conceptual foundation for a more adaptable learning model.

2-2. Operational factors

Recent operations indicate that an era of persistent conflict will place greater demands on Soldiers and leaders to execute full-spectrum operations in complex, uncertain environments. TRADOC Pam 525-3-0, with its theme of operational adaptability, is the foundation for ALC 2015. TRADOC Pam 525-3-0 places greater emphasis on the capability of leaders and Soldiers to be the instruments of adaptation in executing full-spectrum operations, rather than relying solely on superior technology. It describes operational factors that have profound implications for the Army's learning model, as listed in figure 2-1 and discussed below.

Operational Factors

- Full-spectrum operations
- Adaptability
- Decentralization
- Mastering fundamentals
- Culture and language
- Capitalizing on experience

Figure 2-1. Operational factors

a. Full-spectrum operations. Counterinsurgency and stability operations dominate the current fight; however, forces must be prepared to execute full-spectrum operations.¹² Soldiers and leaders must learn to rapidly transition between offensive, defensive, and stability operations or civil support operations while understanding that many military fundamentals remain the same in any type of operation. Preparation for future operations must include the complexity, uncertainty, continuous transitions between operations, protracted time, information complexity, and adaptive enemies that are anticipated in future conflict.¹³ The learning model must provide opportunities to experience full spectrum challenges through a balanced mix of live, virtual, constructive, and gaming environments.

b. Adaptability. Leaders at all levels must have opportunities to develop operational adaptability through critical thinking, willingness to accept prudent risk, and the ability to make rapid adjustments based on a continuous assessment of the situation. They must be comfortable with ambiguity and quickly adapt to the dynamics of evolving operations over short and extended durations.¹⁴ Leaders must be adept at framing complex, ill-defined problems through design and make effective decisions with less than perfect information. The learning model must develop adaptability at all levels through a foundation of operational competencies and then increase the type and intensity of stressors and ambiguity.

c. Decentralization. The Army increasingly empowers lower echelons of command with greater capabilities, capacities, authority, and responsibility. This requires leaders who can think independently and act decisively, morally, and ethically. Decentralized execution under mission command is the norm. Current and future operational environments will place increased responsibility on Soldiers to make decisions with strategic, operational, and tactical implications while operating in complex environments and employing combined arms teams. These operations demand increased understanding of geopolitical, cultural, language, technical, and tactical knowledge for leaders at all levels, to include the “strategic corporal.”

d. Master fundamentals. Currently the Army has extensive combat experience that provides an in-depth understanding of the fundamentals that contributed to mission success in counterinsurgency operations. Mastering and sustaining core fundamental competencies better support operational adaptability than attempting to prepare for every possibility. The fundamental competencies must be clearly identified to support executing future full-spectrum operations and time must be allotted to attain proficiency through repetition and time on task. This is particularly important in the Reserve component due to the limited amount of time members of the Army Reserve have to spend on military duties. The Army’s learning model must provide opportunities for the Army to continuously assess and build mastery of fundamental competencies.

e. Culture and language. The Army operates with and among other cultures as part of a joint, interagency, intergovernmental, and multinational force, engaging adaptive enemies where indigenous populations, varying cultures, divergent politics, and wholly different religions intersect. This requires developing Soldiers who understand that the context of the problem matters and that their understanding of the non-military world of foreign societies and cultures be broadened. Soldiers and leaders need to learn general cultural skills that may be applied to any environment as well as just-in-time information that is specific to their area of operations. The Army culture and foreign language strategy requires both career development and predeployment training to achieve the culture and foreign language capabilities necessary to conduct full-spectrum operations.¹⁵

f. Capitalize on experience. Recent operations provide Soldiers with a wealth of operational experience that contributes to peer-based learning in today’s classrooms, through blogs, and other media. The future learning model must offer opportunities for Soldiers to provide input into the learning system throughout their career to add to the body of knowledge, and utilize recent combat veterans as learning facilitators. The learning model must account for prior knowledge and experience by assessing competencies and tailoring learning to the Soldier’s existing experience level and adjust to take advantage of changes in Soldier and leader experiences over time.

2-3. Learning environment factors

A review of recent research and learning trends led to the selection of five key learning environment factors (see figure 2-2) that will influence the future Army learning model. A common theme is the growing influence of information technologies. This influence is having a profound effect on learning approaches in higher education centers, primary and secondary

schools, and private corporations. Wireless internet devices and cloud computing provide expanded opportunities for anytime, anywhere access to information. The degree of potential change that evolving information technologies will have on learning has been described as one that calls for “revolutionary transformation rather than evolutionary tinkering”¹⁶ to meet learner expectations and exploit advantages of ubiquitous access to learning. While technology plays an important role in a global transformation of learning, it is neither a panacea nor the centerpiece. As an enabler, technology can be exploited to make learning content more operationally relevant, engaging, individually tailored, and accessible.

- | |
|--|
| <p style="text-align: center;">Learning Environment Factors</p> <ul style="list-style-type: none"> • Generational and learner differences • Technology opportunities • Inputs to the Army • Learning science • Lifelong learning |
|--|

Figure 2-2. Learning environment

a. Generational and learner differences. The 2015 learning environment will include a range of learners whose pre-Army educational experiences, mastery of digital technology, and operational experience will vary considerably. Leaders and facilitators must gain an appreciation for learning differences among Soldiers in their command.

(1) Much has been written about millennial learners and generational differences.¹⁷ Generational changes in society have not changed cognitive learning functions; however, responding to or recognizing generational differences are an important consideration in devising a new Army learning model. While no generation is entirely homogeneous, some general characteristics attributed to the digital age learners include visual and information literacy, multitasking ability, immersion in technology (ubiquitous computing), social engagement, achievement-oriented, sheltered from harm, and a desire to make a difference in the world.¹⁸ Digital age learners will not accept learning environments that do not provide enough support, feedback, or clearly demonstrate the relevance of the learning material to their lives. Social interaction and team participation are increasingly important; therefore, the future learning model must provide more opportunities for collaboration and social learning. Some researchers are critical of digital age learners and suggest that their reliance on digital media has also resulted in shorter attention spans, poor teamwork skills, lack of listening and critical thinking skills, and a lack of intellectual courage.

(2) The Army’s 2015 learning environment will include learners from a range of generations. It is important to consider the value of prior experience and knowledge that each individual Soldier brings to the learning environment. The implication for the 2015 learning model is to provide more individually tailored instruction to Soldiers that accounts for prior knowledge and experience through assessments of competencies.¹⁹ In the classroom, the Army must move from individual-based and instructor-delivered learning to team-based, facilitated learning.

b. Technology opportunities.

(1) Technology and the Internet foster an increasingly competitive and interdependent global environment and impact nearly every aspect of Soldiers’ daily lives – how they work,

play, interact with others, and learn new things.²⁰ There is a growing disparity between Soldiers' experiences in and out of Army schools. Soldiers use computers, mobile devices, and the Internet in units and off-duty experiences that too often are radically different from what they experience in institutional learning. The Army must close this gap to attract and retain a generation of young people who know how to use technology to learn both formally and informally. The Army must leverage technology to establish a learning system that provides engaging, relevant, and rigorous resident, distributed, and mobile learning.

(2) Emerging technologies that are likely to have the greatest effect on the learning environment in the next 5 years include mobile computing, open content, electronic books, augmented reality, gesture-based computing, and visual data analysis.²¹ The Army must have a capacity to evaluate and integrate rapidly expanding learning technology capabilities to keep the learning system competitive and responsive. Adaptive learning, intelligent tutoring, virtual and augmented reality simulations, increased automation and artificial intelligence simulation, and massively multiplayer online games (MMOG), among others will provide Soldiers with opportunities for engaging, relevant learning at any time and place. Curriculum developers must be adept at rapidly adapting to emerging learning technologies that, coupled with modern instructional design strategies, will improve overall effectiveness of the learning environment.

c. Inputs to the Army.

(1) Army recruits are generally the product of the Nation's education system, though home schooling, post-secondary education, and variations in the quality of educational experiences suggest that generalizations about the Nation's education system do not fit every incoming recruit. Nevertheless, statistical rankings of the Nation's education system imply the Army will need to fill gaps, in addition to developing Army-specific skill sets, to achieve desired performance levels. By many measures of success, the U.S. is failing to meet the challenge of educating its future workforce. Among employers those who hire young people right out of high school, nearly 50 percent said that their overall preparation was deficient and 70 percent of employers in one study ranked the high school graduates they hired as deficient in critical thinking/problem solving, the single most important skill high school graduates will need in 5 years..²² Children in poor communities fare worse. The U.S. literacy rate (as traditionally measured) is declining – 14 percent of the U.S. population over the age of 16 (approximately 30 million people) have trouble with reading and writing.²³ Ranked against 34 other developed countries, 15-year olds in the U.S. show mediocre performance rankings of 14th in reading, 25th in math, and 17th in science.²⁴ Households speaking more than one language are increasing and multicultural families are becoming more the norm. This requires shifts in education models to accommodate linguistic and cultural challenges.²⁵ Obesity and related health problems are on the rise with nearly two-thirds (63 percent) of 20-44 year olds being classified as either overweight or obese.²⁶ The pool of candidates who can meet military standards for service entry is dwindling.²⁷ The Army faces the real possibility of a less educated, less fit entrant who will require additional training and education to fill gaps.

(2) In the last decade, the Nation's primary and secondary schools complied with the *No Child Left Behind Act* by emphasizing standardized testing to gauge educational outcomes. Some educators believe the unintended consequence of teaching to the test produced a

generation of graduates who do not possess essential survival skills to succeed in the workforce (such as, critical thinking, collaboration, adaptability, effective communication, problem solving, and others).²⁸ Army leadership doctrine identifies many of the same skills as essential for operational adaptability.²⁹ The Army will need to take deliberate steps to identify baseline skill levels essential for operational adaptability and outcome measures for each cohort and echelon.

d. Learning science.

(1) Advances in learning science, cognitive psychology, educational psychology, neuroscience, and other related fields provide new insights into improved learning strategies and applications of technology to learning. Yet years of research show there is still no single learning strategy that provides the most effective solution to every learning problem.³⁰ Decisions regarding instructional strategies and media selection must be made by experts based on the audience, the level of experience the learner brings, and the content of the learning. Well established research findings identify some of the most important learning principles that should be included in the design of Army learning products.

(2) Adult learning is promoted when the learner's prior knowledge is activated prior to learning new knowledge. The learner observes a demonstration. The learner applies new knowledge. Demonstration and application are based on real-world problems. The learner integrates new knowledge into everyday practices.³¹

(3) Well-designed learning must incorporate deliberate strategies to ensure learning transfers from the learning environment to the operational environment.³² Adapting to rapidly changing operations involves developing a deep understanding within specific content areas and making the connections between them.³³ Instructional developers should identify tasks that are performed routinely (near-transfer) and those that often require modification (far-transfer) to apply learning designs that maximize adaptation. Learner characteristics that influence transfer include cognitive ability, self-efficacy, and motivation. Some of these learner characteristics are malleable and enhanced through specific learning strategies such as mastery experiences and supportive feedback.³⁴ One of the oldest ways of conveying information is through storytelling. It is engaging, memorable, and enhances learning transfer. Virtual scenarios, videos, and other media provide greater opportunities to incorporate high impact stories into learning events.

e. Lifelong learning. The importance of lifelong learning increases as the pace of change and information flow increases. Remaining competitive in the civilian job market requires workers to update professional skills throughout careers. Likewise, Soldiers must acquire the habits of lifelong learners. Soldiers must become expert, self-motivated learners who are capable of asking good questions and possess digital literacy skills that enable them to find, evaluate, and employ online knowledge, whether in learning or operational environments. Army training, education, and experience domains require a holistic integration and clearly defined paths to achieve outcomes at each stage of a Soldier's career. The Army's learning model can facilitate a lifelong learning culture by encouraging critical thinking, complex problem solving, and providing tools that allow Soldiers to access relevant performance-related information. The Army must augment knowledge available from civilian sources by developing Army-specific

knowledge content that is accessible on demand in a career-long continuum of learning that integrates training, education, and experience.

2-4. Key implications

a. With more expected of Soldiers and leaders, the Army must meet the challenge to prepare Soldiers and leaders who are technically and tactically proficient, can think critically, make sound decisions, interact across cultures, and adapt quickly to rapidly evolving situations in full-spectrum operations. Information technologies shape the way learners coming into the force learn and communicate, and increase the volume of knowledge that must be managed and disseminated. These technologies are causing the Army to reexamine learning, and are spawning a transformative global view of learning.³⁵ Information technology advances are empowering U.S. adversaries and will only give the Army a competitive advantage if fully exploited.

b. To remain competitive, the learning model must seize opportunities to use technology as an enabler to engage and appeal to digital age learners. It must allow seasoned professionals to expand and deepen their cognitive, interpersonal, and problem framing skills essential for operational adaptability. The learning model must permit the learning system to expand beyond the confines of brick and mortar to deliver learning to Soldiers at the point of need.

c. The mandate for the Army is to create a learning environment that enables mastery of fundamental competencies through an appropriate mix of live and technology-enabled learning methods. Technology-enabled learning must be balanced with higher quality face-to-face learning experiences that employ learning strategies that foster critical thinking and problem solving skills needed for operational adaptability. The implications of these factors lead to the solutions declared in [chapter 3](#) -- a learning model that supports operational adaptability.

The central idea of TRADOC Pam 525-3-0, operational adaptability, depends fundamentally on educating and developing leaders capable of understanding the situation, and adapting actions to seize and retain the initiative.

TRADOC Pam 525-3-0

Chapter 3

Meeting the Challenges

3-1. The problem

Strategic planners portray the next decade as an era characterized by persistent conflict, uncertainty, increasing complexity, and adaptive adversaries.³⁶ These operational realities put a significant burden on the human dimension of the force and likewise the learning system that must support them with rigorous, relevant, timely training and education. The problem this concept addresses can be stated as a question: How must the Army change its learning model from one that barely satisfies today's needs to one that promotes operational adaptability, engages learners, enables the Army to outpace adversaries, and meets the Army's learning requirements in 2015?

3-2. Central idea: adaptability

The Army learning model must be adaptive on several levels if it is to support the qualities of operational adaptability in the force. First, the Army learning model must develop adaptable Soldiers and leaders³⁷ who have the cognitive, interpersonal, and cultural skills necessary to make sound judgments in complex environments, from the 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. Finally, the learning model must be capable of sustained adaptation. Routine feedback from the Operational Army on Soldier performance will drive adjustments to curriculum content and learning products. Sustaining adaptation includes a capacity to routinely explore and integrate advanced technologies and learning methods to remain competitive and engage learners.

3-3. Learning solution: continuous adaptive learning model

a. By design, the 2015 learning model must promote adaptable qualities in Soldiers and leaders and be sufficiently adaptable to adjust to shifting operational demands. The solution is a continuous adaptive learning model, a framework comprised of elements that together create a learner-centric, career-long continuum of learning that is continuously accessible and provides learning at the point of need in the learner's career (see figure 3-1). Transparent to the learner, but integral to the model, is a supporting infrastructure that includes subject matter experts and facilitators from the centers of excellence (CoEs), a digitized learning media production capability, knowledge management structures, and policies and resourcing models that are flexible enough to adapt to shifting operational and learner demands. The model's underlying infrastructure is critical to enabling the shift from a course-based, throughput-oriented, instructor-led model to one that is centered on the learner. Through this adaptive development and delivery infrastructure, the learning model provides maximum opportunities for individual learning that are grounded in schoolhouse experiences, and continue through the career span in a

learning continuum that is responsive to operational performance needs, not dependent on location.

b. The learner experiences the continuous adaptive learning model as a supportive, accessible learning resource comprised of facilitators, coaches, technology tools, assessments, and content tailored to their existing knowledge. The continuous

adaptive learning model presents the learner with challenging

content through a balanced mix of live and technology-delivered means, available in both resident and nonresident venues. It encourages individual initiative to track learning that supports position assignments and plan career goals. Soldiers enter the learning continuum even before IMT and have access to digitized learning content throughout their careers.

c. Two major themes underpin the continuous adaptive learning model. The first theme is that of improving the quality, relevance, and effectiveness of face-to-face learning experiences through outcome-oriented instructional strategies that foster thinking, initiative, and provide operationally relevant context. The second theme is that of extending learning beyond the schoolhouse in a career long continuum of learning through the significantly expanded use of network technologies. Information security concerns must be balanced against the risk of losing the competitive advantage if the increasing flow of information is not converted to useable formats and distributed through a managed system. Underpinning both themes are learning technologies and instructional strategies that best fit the learning audience and range of desired outcomes. The model increases rigor through frequent learner assessments to maintain standards and remediation is applied when needed

d. The sections below describe the elements that comprise the framework of the continuous adaptive learning model. These include Soldier competencies that are the outcomes of the learning model, key characteristics of the 2015 learning environment that a learner will experience, and how these competencies and learning environment characteristics apply across the career span for each cohort and echelon. To achieve the outcomes described, some specific instructional guidelines will apply to all courses. The sections below also describe the critical supporting infrastructure that must be in place to create this learner-centric model and actions necessary to sustain adaptation of the model over time. The elements of the continuous adaptive learning model form an interdependent, comprehensive system to achieve the responsiveness and flexibility necessary to support the Operational Army in an era that demands operational adaptability.

3-4. Learning outcomes: 21st century Soldier competencies

a. Nearly a decade of conflict has shown the Army that it is extraordinarily difficult to prepare Soldiers for every battlefield contingency. Instead, Soldiers and leaders must master a

Continuous Adaptive Learning Model

- Learning outcomes: 21st century Soldier competencies
- Learner-centric 2015 learning environment
- Career span framework
- Adaptive development and delivery infrastructure
- Sustained adaptation

Figure 3-1. Continuous adaptive learning model

set of critical core competencies that provide a foundation for operational adaptability. A review of TRADOC Pam 525-3-0, TRADOC Pam 525-8-3, and leadership doctrine resulted in the identification of critical competencies that are essential to ensure Soldiers and leaders are fully prepared to prevail in complex, uncertain environments. The nine 21st century Soldier competencies listed in figure 3-2 are the learning outcomes for the continuous adaptive learning model. The 21st century Soldier competencies will begin to be instilled during IMT, and then reinforced at levels of increasing depth and complexity across the career span.

- | 21st Century Soldier Competencies |
|---|
| <ul style="list-style-type: none">• Character and accountability• Comprehensive fitness• Adaptability and initiative• Lifelong learner (includes digital literacy)• Teamwork and collaboration• Communication and engagement (oral, written, negotiation)• Critical thinking and problem solving• Cultural and joint, interagency, intergovernmental, and multinational competence• Tactical and technical competence (full spectrum capable) |

b. All Soldiers and leaders must master the fundamental warrior skills supporting tactical and technical competence to execute full-spectrum operations among diverse cultures, with joint, interagency, intergovernmental, and multinational partners, at the level appropriate for each cohort and echelon. The learning environment and instructional strategies must simultaneously integrate and reinforce competencies that develop adaptive and resilient Soldiers and leaders of character who can think critically and act ethically. [Appendix C](#) describes each of the competencies in detail.

Figure 3-2. 21st century Soldier competencies

3-5. Learner-centric 2015 learning environment

The continuous adaptive learning model provides a learning environment that fosters 21st century Soldier competencies with instructional strategies, expert facilitators, and technologies that support the learner. The learner-centric 2015 learning environment contains key characteristics depicted in figure 3-3 and described below.

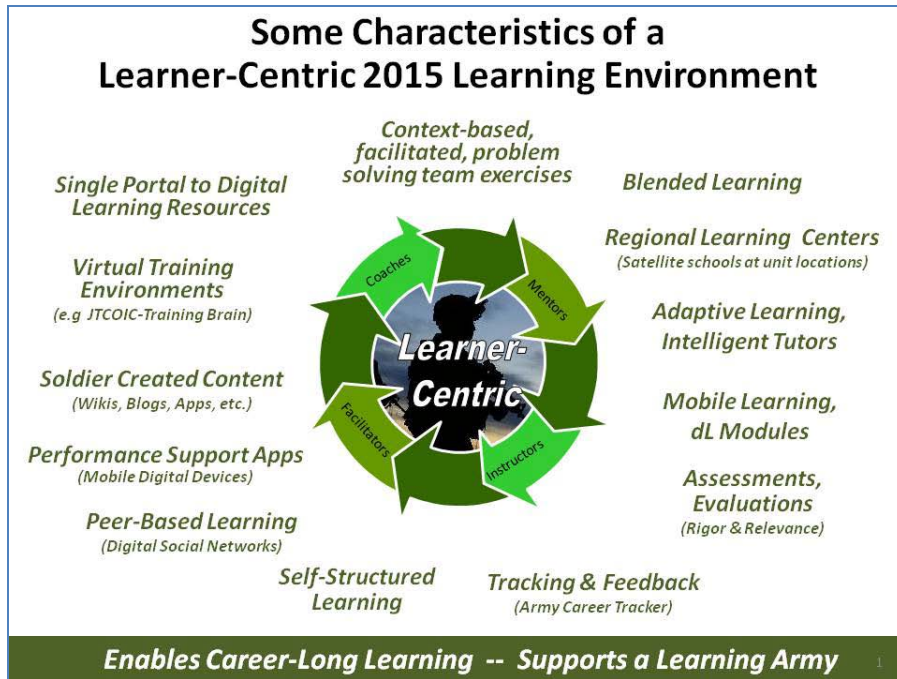


Figure 3-3. Learner-centric 2015 learning environment

a. Context-based, collaborative, problem-centered instruction. Classroom learning will shift from instructor-centered, lecture-based methods to a learner-centered, experiential methodology. Engaging the learners in collaborative practical and problem solving exercises that are relevant to their work environment provides an opportunity to develop critical 21st century Soldier competencies such as initiative, critical thinking, teamwork, and accountability along with learning content. Students master knowledge and comprehension level learning objectives outside the classroom through individual learning activities such as reading, self-paced technology-delivered instruction, or research. Collaborative learning activities, discussion, identification of problems, and solving those problems is done in the small group classroom environment. This learner-centered instructional approach encourages student participation and puts the instructor in the role of a facilitator. Facilitators are responsible for enabling group discovery. Students and facilitators construct knowledge by sharing prior knowledge and experiences, and by examining what works and what does not work. The collaborative adult learning environment is nonthreatening; mistakes can be made as students weigh courses of action and as the facilitator guides the group to recognize better solutions.

b. Blended learning. The term blended learning is defined most frequently as online or technology-delivered instruction combined with face-to-face instruction. It blends the efficiencies and effectiveness of self-paced, technology-delivered instruction³⁸ with the expert guidance of a facilitator, and can include the added social benefit of peer-to-peer interactions.

(1) A 30 percent decrease in the time it takes to learn with no decrease in effectiveness is possible when educators develop technology-delivered instruction for appropriate learning content and design instruction according to established learning principles.³⁹ This instructional approach will be widely applied in the schoolhouse and replace most, if not all, instructor-

centered platform instruction with engaging, tailored, technology-delivered instruction that can also be used for refresher or sustainment learning in units. This approach has particular applicability for basic skill level training that involves procedural and declarative knowledge.

(2) Blended learning leverages digital age learners' strengths through use of digital media that is standardized for quality, employs video and game-based scenarios, includes pretests and immediate feedback on learning, and assesses instructional outcomes. Blended learning un-hinges learning from classroom by making it mobile, allowing Soldiers to reclaim previously unused blocks of time (such as, while waiting) and adding flexibility to the training schedule.

(3) When a blended learning approach is coupled with collaborative, context-based, problem-centered instruction, it creates a powerful learning experience. Employing self-paced technology-delivered instruction reduces the amount of face-to-face instruction, but increases the quality with a richer, socially-supported learning experience. This instructional strategy can be used in the schoolhouse with live facilitators and peer learners, or distributed through networked links from a facilitator hub to a distributed student cohort group. Technology-delivered instruction is not a crutch for facilitators to simply push the play button and step aside. Facilitation skills will require greater proficiency in communications skills and subject mastery than traditional lecture methods. The instructor's role changes from "sage on the stage" to "guide on the side."⁴⁰ Shifting to a facilitative learning approach will influence instructor selection and training, as well as instructor to student ratios (ISR) for different types of learning events.

c. Regional learning centers. Establishing learning centers on the continental U.S. and at outside the continental U.S. installations can greatly enhance and extend the learning environment to meet learner needs across the career span. The use of over 2,400 temporary MTTs in FY10 indicates the need to bring learning to unit locations permanently in support of both ARFORGEN schedules and quality of life. Regional learning centers support a modular approach to learning over time with structured and guided self-development; access to digital learning content, facilitated group-learning events that may include cross-branch and/or cross-MOS peers; and rigorous standards-based assessments. Installations with sufficient throughput for common core portions of PME will have faculty assigned to conduct the face-to-face portions of leader education. Some course modules and some low throughput installations will host MTTs from the schoolhouses or networked links to facilitators at CoEs. Regional learning centers will provide senior mission commanders more authority over the timing of PME in support of ARFORGEN. Extending the schoolhouse to unit locations transcends distinctions between the institutional Army and Operating Forces and enables the strong partnership that is necessary to synchronize learning events with position requirements.

d. Adaptive learning and intelligent tutors. Technology-delivered instruction can adapt to the learner's experience to provide a tailored learning experience that leads to standardized outcomes. One-on-one tutoring is the most effective instructional method because it is highly tailored to the individual.⁴¹ While establishing universal one-on-one tutoring is impractical, the Defense Advanced Research Projects Agency (DARPA) and other research agencies are demonstrating significant learning gains using intelligent tutors that provide a similarly tailored learning experience.⁴² Through adaptive learning software, technology-delivered instruction

adapts to the learner's previous knowledge level and progresses at a rate that presents an optimal degree of challenge while maintaining interest and motivation. Technology-delivered instruction that employs adaptive learning and intelligent tutoring could save time and allow for additional gains in learning effectiveness.

e. Distributed learning. The future learning environment requires a significantly expanded and more robust capability to deliver learning content at the point of need. Future distributed learning modules must be up-to-date, engaging, and easily accessible. An extensive repository of learning modules must be available to support career progression, assignment-oriented learning, operational lessons, and performance support aids and applications. Distributed learning content will be packaged in short modules that fit conveniently into a Soldier's schedule. Intelligent tutors and feedback will tailor the learning experience to the individual learner. The supporting development and delivery infrastructure must streamline development time, easily enable use of interchangeable content, and overcome bandwidth and server issues so users experience no frustration with access.⁴³ Distributed learning plays a key role in any career-long learning model, but the Army must significantly transform outdated distributed learning program policies and processes to support a viable and engaging learning model in 2015.⁴⁴

f. Assessments. The importance of incorporating valid and reliable assessments in the 2015 learning model cannot be overstated. As the continuous adaptive learning model further expands learning opportunities beyond the schoolhouse, considerable care must be taken to develop secure, technology-enabled, integrated assessments tailored to content and expected outcomes. When appropriate measures of learner knowledge are used as pretests and post tests, both in the schoolhouse and in distributed locations, instruction can be tailored to the learners' needs and experience, as well as allow Soldiers to test-out of instruction they have already mastered. Post learning assessments provide both the supervisor and the learner certainty that learning has occurred to standard. Results can be fed into automated tracking systems to provide near immediate feedback and record updates. Subjective assessments, such as 360 assessments, can add a valuable source of feedback on qualities and characteristics not easily measured through objective assessments.

g. Tracking and feedback. Learners must be supported with an online career-tracking tool, such as the Army Career Tracker, that will provide a single user interface to allow learners to manage their lifelong learning objectives and monitor their progress toward completion of required training and education requirements and career goals. Individuals will select and enroll in resident and nonresident Army courses as well as seek civilian education opportunities through partner colleges and universities. The Army Career Tracker will allow individuals to manage their lifelong learning objectives and accomplishments and see a visual depiction of possible career paths. The Army Career Tracker should facilitate goal setting and encourage personal responsibility and initiative. Career management field proponents will push news and relevant updates to targeted groups online. The Army Career Tracker opens the pathway for discussion with the chain of command by allowing supervisors and mentors to view the status of individual subordinates as well as the status of the unit under their supervision or mentorship. With the addition of an artificially intelligent personal learning associate capability, information on learning gaps and developmental opportunities can be provided to assist the Soldier in meeting required learning and personal growth goals.

h. Self-structured learning. Digital age learners continually seek information and want their information needs gratified immediately. They will expect information on demand and on a wide range of topics from Army life to position requirements to operationally relevant data. Digital age learners will seek out learning modules for assignment-oriented skills, career advancement, and career change to pursue civilian education goals, or prepare for civilian transition. The 2015 learners take initiative for individual development and look for feedback from mentors and facilitators accessed through networked links. The Army must meet the digital age learner's information access expectations by creating and maintaining robust, up-to-date knowledge repositories.

i. Peer-based learning. The advent of Web 2.0 technologies opened a world of digital social interactions that have become a natural part of life for digital age learners. The Army must be prepared for opportunities in a future Web 5.0 environment. Soldiers are accustomed to connecting with peers across networks and have a habit of checking on buddies. The Army must leverage this capability to build dynamic vertical and horizontal social networks for formal and informal information sharing. Providing mobile Internet devices as part of a Soldier's kit will facilitate this emerging style of communication and collaboration. The ease in communicating with peers across networks suggests digital age Soldiers will readily establish trust across operational communication networks; this trust is essential in the conduct of decentralized operations. The Army must establish guidelines and security protocols to maximize the value of peer-based learning and information sharing.

j. Performance support applications. Mobile Internet devices will provide access to learning content, courseware, and career data, as well as performance support applications. Memorizing is less important than referencing information so perishable knowledge (such as, infrequently used procedural information) should not be taught in the schoolhouse, but instead converted to applications. Soldiers should be taught how to find and use applications in the schoolhouse and continue habitual use in units. Mobile computing will have a game-changing impact on knowledge access and learning approaches.⁴⁵ A priority for the Army must be to move quickly to resolve security and distribution issues so the 2015 learning environment can take maximum advantage of this capability. The Army must develop a robust capacity to develop, manage, store, and distribute applications with user-friendly interfaces for searches and access.

k. Soldier-created content. The 2015 learning environment is characterized by a flow of information across networks between the learner and the institution. This flow goes both ways. Learners will possess tools and knowledge to create learning content, such as digital applications, videos, and wiki⁴⁶ updates to doctrine. Recent trends in user-created content will become more widespread and can be of tremendous value to the Army. Soldiers at the edge of operational adaptation are in an ideal position to gather and transmit operational experiences and lessons. The Army's challenge is managing this democratization of information. While allowing freedom to share information and create learning content, issues of security and information verification need to be addressed. The Army must provide a framework and standards for Soldier-created learning content. The benefits far outweigh the organizational management challenges in a learner-centric environment that values initiative, critical thinking, and collaboration.

1. Virtual training environments.

(1) The 2015 learning environment will increasingly employ virtual training environments as part of resident and nonresident learning events for individuals and groups. The tools used to create these environments cover a broad range of capabilities including simulation, simulators, game-based scenarios, virtual worlds, MMOGs, and others, and may employ augmented reality and artificial intelligence to enhance the perception of realism. While virtual training environments do not replace all live training, they do offer a number of advantages. They provide training events that are highly compressed in time, simulate environments that cannot be replicated in live training, can be tailored to the learners' level of knowledge, can ramp up complexity and stress on demand, allow multiple repetitions to increase mastery, and have advantages of accessibility and adaptability.

(2) Virtual training may be integrated into dL products, used in blended learning at both resident and distributed locations, as the basis for collaborative problem-solving exercises, and for capstone exercises. User interfaces (such as, joysticks, haptic,⁴⁷ voice, and others) should be familiar to learners to enhance acceptance and encourage repeated practice. Many of the same virtual training tools used in the schoolhouse will be used in units for individual and collective learning events, providing familiarity to learners across domains. The Joint Training Counter-Improvised Explosive Device Operations Integration Center's (JTCOIC) use of gaming technology to rapidly replicate operational events provides an excellent example of how virtual training technologies bring realism and relevance to training now. A capacity to rapidly develop, update, and distribute relevant common training scenarios will be the "training brain" of a 2015 learning environment.

m. Single portal to digital resources. Soldiers will need a single online portal where digital learning resources can be easily found in two, but no more than three clicks. The portal could be a two-dimensional online site, or three-dimensional virtual world with natural navigation and interpersonal interactions through avatars. The portal should provide access to mentors, peer-based interactions, facilitators, and learning and knowledge content repositories. The portal requires multiple security access levels with ready access to unclassified learning material, and more stringent security requirements for "for official use only," and secure information.

n. Evaluations. Evaluations as part of the 2015 learning model ensure learning occurred to standard and that the course is still meeting the needs of the Army. Post-instruction surveys of both students and their supervisors give the developer feedback that learning occurred to the standard prescribed in the course. Survey results may be collected electronically and compiled to provide quick response to curriculum change. In addition, direct job observation and graduate interviews can provide valuable evaluation data.

3-6. Career span framework

a. The career span framework of the continuous adaptive learning model provides general guidelines (ways) to develop 21st century Soldier competencies (ends) across the career span by applying elements of the 2015 learner-centric learning environment (means) described previously. The goal is to provide the Operating Force with a standardized set of foundational

competencies that can be further tailored to suit operational and position needs as determined by the learner and unit commander.

b. Upon initial entry to the Army, individuals begin a career path trajectory with both mandatory gates and discretionary learning events throughout their careers. Certain career events will become trigger points for additional learning, civilian schooling, or broadening experiences. Individual career guidelines and options for divergence will be available online to empower Soldiers to assume more responsibility for individual career development. The relationship between learner and schoolhouse ceases to be an episodic event, but is instead a career-long partnership. This partnership extends to the unit supervisor who will possess tools to guide learning experiences tailored to the Soldiers' experience level and unit performance requirements. Learning continues at unit locations through learning content that is both pushed by the schoolhouse and pulled by the learner, mandatory and self-directed, competency-based, and set to established gates.

c. To achieve desired outcomes of the career span framework, career field proponents must clearly identify the desired 21st century Soldier competency levels and assessment metrics for each cohort and echelon. For example, consider what qualities of critical thinking and problem solving are essential at the initial entry level, and to what degree these competencies progressively develop through the career. This requires a comprehensive review of career span learning outcomes as synchronized with operational performance needs across the nine 21st century Soldier competencies. Instructional design principles guide decisions between face-to-face vice technology-delivered instruction, and resident vice nonresident learning events.

d. The career span framework includes a blend of relatively standardized foundational learning and personalized learning that fit the Soldier's specific career needs. Standard, foundational competencies are critical at the initial entry level, intermediate level, and the strategic level of career development. The current mid-grade courses will transition to a modular learning approach tailored to assignments and operational needs. [Appendix E](#) provides course level descriptions at each career level. At each level, the cohort proponent also establishes civilian education degree requirements. Functional courses provide additional specialized skills appropriate for the individual career path and assignments. Some continuous adaptive learning model instructional guidelines are common across all levels of instruction and should be applied as appropriate to the learning content and audience. Instructional guidelines are outlined in figure 3-4, followed by specific career span guidelines for each cohort and echelon.

(1) Initial entry level. Soldiers and junior officers enter the career path trajectory at a resident training center where direct observation and performance feedback is critical to developing initial military skills and moral strength. IMT is a rigorous, foundational learning experience that combines indoctrination into the Army culture, which rests on the interdependence between the distinctive values, character, and identity that comprise the Warrior Ethos, and basic skills training and comprehensive fitness. It is here that the Army also instills a

Instructional Guidelines Applicable Across All Cohorts and Echelons

- Convert most classroom experiences into collaborative problem solving events led by facilitators (vice instructors) who engage learners to think and understand the relevance and context of what they learn.
- Tailor learning to the individual learner's experience and competence level based on the results of a pretest and/or assessment.
- Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.
- Use 21st century Soldier competencies as an integral part of all learning activity outcomes; establish metrics and standards for each competency by cohort and echelon.
- Examine all courses to identify learning content that can be transformed into performance support applications, develop applications, and introduce application use in the schoolhouse.
- Develop technology-delivered instruction incorporating adaptive learning and intelligent tutors with a goal of reducing learning time while maintaining effectiveness for resident and nonresident use.
- Integrate digital literacy skills appropriate at each career level and foster skills to enable and encourage a career-long learning mindset.
- Use virtual and game-based training to add realism and operational relevance at all levels.
- Integrate joint, interagency, intergovernmental, and multinational, culture, and comprehensive fitness goals into all courses at the level and degree that fits the learning audience.
- Establish a full spectrum frame of mind in all learners, while maintaining flexibility to adapt learning content to meet operational demands.

Figure 3-4. Instructional guidelines

lifelong learning mindset in Soldiers that empowers them to take responsibility for their own professional development. IMT emphasizes soldierization, military character, bearing and discipline, and basic skills that must be so firmly ingrained that they can perform under conditions of high stress. It is grounded in rigorous physical, emotional, mental, and intellectual experiences that are the bedrock for developing competent, mentally agile, resilient, and morally prepared Soldiers and junior leaders ready to succeed in their first unit of assignment. They will test and prove proficiency in tactical training environments closely aligned to operational environment. This includes understanding different cultures, quickly adapting to multiple threats and complex conflict scenarios, and competence in their arms and equipment as well as a wide range of information technologies and data systems. Once assigned to a unit, Soldiers and junior leaders will access a suite of learning support tools to sustain, tailor, or augment skills acquired in IMT.

(2) Midgrade level. The value of experience is particularly important during this period of the career. Noncommissioned officers (NCOs) and officers grow and develop professional confidence through direct operational experience, observing role models, interacting with peers,

and from mentors. During this multiyear career phase, NCOs and officers augment their experiential learning by completing a series of mandatory learning modules that lead to defined career gates. Less time is spent in resident instruction, though some critical branch technical and common leader skills will be taught through face-to-face instruction at the schoolhouse or regional learning center. Leader development is a shared responsibility with the Operating Force that includes supervisor input and access to short learning modules that support position-specific learning needs. Certain career events, such as preparation for a new position, will trigger additional learning modules (resident or nonresident) tailored to learning needs for that assignment. Both NCOs and officers will meet civilian college requirements during this phase.

(3) Intermediate level. This is a transition point in the career that brings an increased level and scope of responsibility. Learning events provide NCOs and officers additional standardized knowledge that is critical to provide a broad foundation for success. Individuals acquire a deep understanding of the Army at a combined arms level and hone functional skills through resident or nonresident versions of the courses. They engage in collaborative exercises to solve complex problems thereby enhancing critical thinking and judgment.

(4) Strategic level. The Army's capstone level of PME for NCOs and officers prepares them for strategic levels of leadership by providing a broad contextual understanding of national security issues and their role as senior leaders. At this transition point in the career span, learning provides a standard foundation of knowledge essential to success at the strategic level. Learning occurs through a problem-based model that emphasizes inquiry and peer-to-peer interaction in resident or nonresident versions of the courses.

3-7. Adaptive development and delivery infrastructure

a. Essential to achieving the vision of the continuous adaptive learning model is developing the supporting learning infrastructure that includes building knowledge management enabling capabilities, systems, and networks; workforce skills; facilitator training courses; resourcing models; digitized learning resources; policies and processes; and administrative tools. Some of the primary infrastructure capability requirements are described below.

b. School model. The role of the school must expand in some areas and will contract in others to meet ALC 2015 objectives. Plans must be set in motion to transform both the organizational structure and workforce capabilities. As the Army's central hub for branch-specific knowledge, the school expands its reach to learners throughout the career span by pushing out new information and providing access to mentors and facilitators to support the learner-centric, career-long learning model. The school shifts from a mostly internally focused resident training and education center to one that is more externally focused through worldwide-networked connections to learners. The school staff provides mentoring and facilitates reach-back to knowledge and information needed by learners in the operational units. Branch schools will focus resident learning only on IMT and technical portions of functional and PME courses that must be taught at the schoolhouse due to hands-on equipment requirements. Other PME institutions will balance resident and nonresident requirements as they relate to the learning outcomes and learning science's approach of how best to achieve these outcomes.

c. Digitized learning content. The continuous adaptive learning model must be supported by a robust capability to rapidly develop and update engaging technology-delivered instructional modules that will be used in the schoolhouse as part of a blended learning approach, distributed to the force for job-related sustainment learning, and as performance support applications. Learning modules must be designed to play on a variety of evolving delivery platforms; and, content development must be synchronized with network throughput capabilities. CoE and PME institutions will become the Army's "factories" for producing digitized learning content in-house, eliminating a rigid and slow contracting process. The workforce must become skilled to form multidisciplinary development teams quickly. These teams will be comprised of experts in subject content, educational theory, instructional systems design, and media development. Digitized learning content incorporates easily reconfigurable modules of video, game-based scenarios, digital tutors, and assessments tailored to learners. They incorporate the use of social media, MMOG, and emerging technologies. Interchangeable modules are easily shared and updated to stay relevant. Complex interactive multimedia modules will be developed as an enterprise level (such as, JTCOIC or the National Simulation Center) that harnesses specialized educational media development experts and partners with research activities that are on the cutting edge of learning technologies. Enterprise-level development products are available to schools and units on demand.

d. Instructor selection and training. Moving from an instructor-centric to learner-centric model has profound implications for how the Army selects, trains, and manages instructors. Instructors will become facilitators who ask probing questions as the "guide on the side" in a learner-centric model, rather than dominate the class as the "sage on the stage." It is a more demanding role that should be considered a career-enhancing position with stringent selection criteria. The mix of faculty will need to include a stable corps of subject matter experts who are skilled in facilitating adult learners, augmented by military personnel with relevant operational experience. Teams will teach many classes, and subject matter experts will facilitate courses across cohorts. Facilitator training courses must develop skills at employing technology-enabled learning tools and familiarity with digital age learners' preferences. Facilitators will also need to serve in an adjunct role to technology-delivered learning content, using a blended learning approach both in the schoolhouse and through distributed means. Facilitators will mentor and guide students fulfilling structured self-development phases of courses, and follow the progress of a worldwide cohort of students as they move through modular phases to achieve mandatory gates and standards.

e. Regional learning centers. By extending the reach of the schoolhouse to regional installation locations for mid-level PME courses, officers and NCOs can complete requirements for career progression while at home station, within ARFORGEN cycle windows. Transition to this model requires an analysis of anticipated throughput from each installation for the targeted courses so facility requirements and manning levels can be identified. Once throughput estimates are made, existing buildings can be examined for potential dual-use, to include digital training facilities, NCO academies, Reserve component training facilities, and education centers.

f. Temporary duty for education (TDE). Soldiers typically receive training and education in a temporary duty and return, permanent change of station en route, or permanent change of station status. There is no designated status for Soldiers completing training and education through

regional learning centers (dL or other means) at their duty station location. Soldier TDE status is a proposed policy change that clearly differentiates the time spent on mandatory learning from unit duty time. One of the long-standing criticisms of individual training conducted at home station is that Soldiers are expected to complete distributed and nondistributed learning on non-duty time because they cannot break away from unit duties. TDE is a forcing function that demonstrates the Army's commitment to a lifelong learning culture. Where possible, TDE can be tailored to compensate traditional Reserve component Soldiers to complete PME.

g. Enterprise learning support system. The role of the enterprisewide learning support system increases in both scope and depth in the 2015 learning environment. Decentralized, schoolhouse development of resident and nonresident learning content must be supported through strong centralized leadership and management of policies, standards, networks, data repositories, and delivery platforms. Soldier access to learning content requires DOD-level action to address security and networking issues that currently present barriers to advanced learning initiatives across all services. A robust and reliable system must be in place to manage, archive, store, and permit users to access digital learning content without experiencing frustration. Information must be easily located through a Google-like search engine.

h. Resourcing model. By 2015, the TRADOC resourcing model must change. Currently, schools are resourced for training and education based on ICH that is calculated based on the instructor-student ratio for various learning events. Schools must be resourced to support instructor student ratios for both resident and nonresident delivery of blended learning and problem-centered instruction. The resourcing model must account for learning delivery at regional learning centers and the facilitators and mentors who will interact with a worldwide cohort of learners progressing through the continuum of learning through networked links. The resourcing model must also account for the skilled workforce necessary to rapidly create, deliver, and manage repositories of digitized learning media. But most importantly, it must account for the optimum learning cycle for students (daily, weekly, and others) supported by learning science that defines at various levels and complexity of learning what that amount of time must be to maximize learning outcomes.

3-8. Sustained adaptation

a. The continuous adaptive learning model is not static, but is responsive to operational changes and evolving trends in learning technologies and methods. It is not sufficient to introduce methods and tools to create a learner-centric, career-long learning model without creating an underlying support structure that is committed to continuous adaptation of the learning system. Processes must be in place to continually assess outcomes in meeting the needs of the force, adjust to operational demands, and incorporate advances in learning science and emerging technologies.

b. Performance feedback. The key measure of learning effectiveness is the performance of Soldiers and leaders in their operational positions. Quality assurance systems must focus more on outcomes, rather than internal processes. Robust external evaluations of individual performance through data gathering from multiple sources should be developed and implemented to continuously fine tune learning content.

c. Integration of operational lessons. Because of new tactics and strategies employed by adaptive enemies, operational performance requirements must be continuously monitored, captured, evaluated, and rapidly integrated into relevant learning content. Observations from operational events will be formally and informally collected. Soldiers in theater will use mobile Internet devices to transmit information that must then be captured, analyzed, and important lessons rapidly disseminated to those who need to know and can take action. The JTCOIC provides a model for responsive adaptation. Operational events are captured and replicated in game-based scenarios for rapid dissemination to schools and units for use in learning events.

d. Campaign of learning. Systematic identification of what the Army must know to continuously improve its training and education system and processes is captured and tracked annually through the Army warfighting challenges. Important learning challenges will be addressed through experimentation, studies, and research. Events such as Unified Quest will explore and identify future learning requirements, leader knowledge and attributes, and systemic issues during the annual examination of future operational scenarios and wargames. These will be reviewed and integrated into doctrine and learning content to enhance the effectiveness of strategic outcomes.

e. Chief learning innovation officer (CLIO). Implementing the broad goals included in ALC 2015 requires organizational leadership and a management commitment to achieve the revolutionary transformation necessary to be competitive. The CLIO must have the authority and responsibility to direct, track, and manage actions to initiate and sustain the Army's learning system adaptation. This must include establishing organizational level metrics to routinely evaluate success and provide periodic progress updates. The CLIO will look for existing bright spots and encourage bottom-up ideas by facilitating the initiation of commandwide pilot programs on promising methods and technologies. Pilot programs will be evaluated for their learning effectiveness, application across the Army, return on investment, and future programming for implementation. The CLIO must lead the governance, planning, coordination, and tracking of the multiple internal and external actions required to develop the supporting infrastructure, workforce skills, and policies necessary to implement ALC 2015.

3-9. Summary

The continuous adaptive learning model provides a comprehensive framework that transforms the current learning model into one that supports the development of adaptable Soldiers and leaders, provides an adaptive development and delivery system that will meet Soldiers' learning requirements at the point of need, and can sustain adaptation during an era of persistent conflict and exponential change. It will require coordinated efforts across the Army to build a sustainable learning environment that is essential to support operational adaptability. The specific action plan is addressed in [chapter 4](#).

..... the bureaucracy still “thinks” and “acts” from an industrial age, mobilization-based leader development paradigm. That approach continues to shape how the Services approach training and education, often confusing the two. That state of affairs must change.

The Joint Operating Environment 2010

Chapter 4 Conclusion

a. The last decade of conflict provided many challenges to the institutional Army. It also provided insights into the current learning model and the constraints that limited its flexibility and responsiveness to Operational Army needs. While operational units learned through experience to adapt to new challenges, cultures, and adaptive adversaries, the institutional Army remained bound by inflexible strategies and practices. The Army’s individual learning model must adapt or risk obsolescence.⁴⁸

b. Projections of future operational environments cannot clearly portray a picture of what is to come. Recent history, however, indicates the Army should expect the unexpected. The Army must prevail in a competitive learning environment with limited time and resources to prepare Soldiers for uncertain operations of long and short duration that involve considerably more contact with local populations and coordination across services and with interagency and intergovernmental partners. The Army is asking more of its Soldiers and leaders and must provide a learning environment grounded in the mastery of fundamental skills, and be capable of providing learning at the point of need in a career-long continuum of learning. Operational adaptability demands a learning model that has a capacity to develop adaptable Soldiers and leaders, rapidly develop and deliver relevant learning content on demand, and can sustain adaptation over the long term.

c. The path to transforming the Army’s learning model to a continuous adaptive learning model begins with a clear set of actions outlined in [appendix B](#). Some actions can be taken immediately to begin creating a learner-centric instructional environment (see figure 4-1). Others require the development of a strategy and coordinated efforts across Army organizations. The objective is achievable and worthy of the effort to create thinking Soldiers in a learning Army.

First Steps Toward a Learner-Centric Model

- Convert most classroom experiences into collaborative problem-solving events led by facilitators (vs. instructors) who engage learners to think and understand the relevance and context of what they learn.
- Tailor learning to the individual learner’s experience and competence level based on the results of a pre-test/assessment.
- Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.

Figure 4-1. First steps towards a learner-centric model

Appendix A References

ARs, DA Pams, field manuals (FM), and DA forms are available at Army Publishing Directorate Home Page <http://www.usapa.army.mil>. TRADOC publications and forms are available at <http://www.tradoc.army.mil>

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Appendix B

Proposed Army Learning Concept 2015 Actions

This appendix proposes actions to be incorporated into the TRADOC Campaign Plan (TCP) or similar plans. Table B-1 identifies proposed actions, to include broad initiatives and supporting tasks, and lead and supporting agencies for initial planning purposes. Formal Army learning 2015 governance processes and structures will be established to formalize and implement approved ALC 2015 actions, and key decision points will be established and managed as required.

**Table B-1
Proposed ALC 2015 actions**

Initiative Title	Initiative Description and Supporting Tasks	Lead and Supporting Agencies
	Develop responsibilities and gain approval for organizational alignment of CLIO to implement ALC 2015 goals.	G-3/5/7
	CLIO establishes governance structure, milestones, metrics, and reporting timeline to achieve TCP 11/12 Army learning 2015 goals.	CLIO In coordination with (ICW) G-3/5/7
	Develop strategic communication plan to socialize ALC 2015, internally and externally, to establish consistent understanding of goals and approach.	CLIO ICW G-3/5/7
Implement 21st century Soldier competencies	Establish metrics for each of the nine competencies for each cohort and echelon and implement instructional strategies to inculcate 21st century soldier competencies.	
	Review all courses, and develop and execute a plan to integrate 21st century Soldier competencies into learning content for all cohorts and echelons with established outcomes at each level.	Combined Arms Center (CAC)–Officer Education System (OES)/functional; Deputy Commanding General (DCG), IMT-IMT; Institute of NCO Professional Development (INCOPD)–NCO Education System (NCOES), U.S. Army War College (USAWC); All proponents support; DCG, Army National Guard (ARNG) and DCG, U.S. Army Reserve (USAR) support and coordinate Reserve component participation in review
	Convert most classroom experiences into collaborative problem solving events led by facilitators (vice instructors) who engage learners to think and understand the relevance and context of what they learn.	CAC–OES/functional; DCG IMT-IMT; INCOPD-NCOES, USAWC; All proponents support with ARNG and USAR participation
	Implement training to develop a cadre of skilled facilitators (vice instructors) to support resident and nonresident blended learning methods,	CAC lead; INCOPD and CoEs support; DCG, ARNG and DCG,

	collaborative problem-centered instruction, and inculcation of 21 st century competencies.	USAR support and coordinate Reserve component participation in training development and implementation
	Change the instructor and/or facilitator selection and/or assignment process to increase quality, incentivize attracting the best through rigorous selection process.	G-1/4 lead; CAC, Human Resources Command (HRC) support; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and/or processes for the Reserve component
	Coordinate the identification of 5 +/- levels of digital literacy skills and initiate the application and integration of those skills applied across each cohort and echelon.	G-3/5/7 lead ICW Army Accessions Command and the Signal CoE; all schools support
Establish learner-centric 2015 learning environment	Establish range of capabilities that supports the learner-centric 2015 learning environment to empower and engage learners, incorporate rigor and relevance, and is available at the point of need.	
	Tailor learning to the individual learner's experience and competence level based on the results of a pretest and/or assessment. Examine best practices and develop policy and guidelines for developing and implementing valid assessments.	CAC – OES and functional courses; DCG IMT-IMT; INCOPD-NCOES, USAWC; all proponents support with ARNG and USAR participation
	Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.	CAC – OES/functional; DCG IMT-IMT; INCOPD-NCOES, USAWC; all proponents support with ARNG and USAR participation
	Develop and implement a plan to put mobile digital devices into hands of all Soldiers no later than 2013.	ARCIC lead; ICW chief knowledge officer (CKO)/G-6, CAC, INCOPD, Headquarters (HQ) DA G-6; DCG, ARNG and DCG USAR support and coordinate Reserve component participation in establishing

		requirements and/or processes for the Reserve component
	Develop and gain approval for standards, methods, and tools for pre- and post-test online evaluations to be used to individualize learning and validate outcomes of learning.	CAC lead; CKO, U.S. Army Research Institute (ARI), and proponents support with ARNG and USAR participation
	Identify state of the art online adaptive/tailored training and digital tutor capabilities and develop standards, protocols, and implementing guidance to employ in all appropriate interactive multimedia instruction learning modules; include pretest and post-tests.	CAC lead ICW ARI, DARPA, Institute for Creative Technologies; CKO support
	Develop and gain approval for strategy and accelerated timeline for phased implementation of the Army Career Tracker for all cohorts and echelons.	INCOPD lead; all proponents support
Apply career span framework principles	Establish a continuum of learning across the career span. Convert mid-career PME resident courses to a model that meshes institutional learning and operational experience by delivering learning content through multiple, flexible, and modular venues.	
	Establish career trajectory path for each cohort and echelon with trigger points that initiate additional learning, civilian schooling, or broadening experiences. Apply ALC 2015 common instructional guidelines across all cohorts and echelons.	CAC and INCOPD lead; proponents support; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and processes for the Reserve component
	Develop and implement an incremental plan to modify delivery of mid-career PME courses (Captains Career Course (CCC), Senior Leader Course (SLC), Advanced Leader Course. Identify required and/or tailored learning content.	CAC and INCOPD lead; proponents support; DCG, ARNG and DCG. USAR support and coordinate Reserve component participation in establishing requirements and processes
	Identify examples of current instructional strategies that illustrate ALC 2015 ideals (bright spots) and socialize to all schools to emulate—present in venues to promote widespread application.	CLIO lead; HQs, all major subordinate organizations (MSOs), schools support

	Conduct analysis of throughput, expected use-rates of regional learning centers, and identify installations where regional learning centers should be established.	G-3/5/7, ICW G-1/4, CAC, INCOPD; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and processes for the Reserve component
	Develop instructional design for mid-career PME that will drive classroom, technology, and networking requirements for regional learning centers.	CAC and INCOPD lead; proponents support; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and processes
	Establish regional learning center facilities on identified installations using existing facilities (digital training facilities, Army Continuing Education System, the Army school system, unit schools, and others) to the extent possible.	G-1/4 lead; G-3/5/7, CAC, INCOPD, Installation Management Command, Forces Command (FORSCOM), HQDA support
Develop the adaptive learning system infrastructure	Design and implement a learning system infrastructure capable of rapidly adapting to the fluctuating learning needs of the force with relevant and engaging learning products.	
Enterprise learning support system: Knowledge management	Develop and build a capacity to manage, store, and distribute digitized content developed by schools and by Soldiers (governance, standards, learning management system, collaboration tools).	DCG lead (CKO/G-6); CAC, INCOPD, Program Executive Office for Enterprise Information Systems, HQDA support
	Develop strategy and upgrade networks delivering digitized learning content (such as, cloud computing) with a goal of eliminating user download issues.	DCG lead (CKO/G-6); CAC, ARCIC, Network Enterprise Technology Command support; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and processes
	Review and establish supporting policies and processes related to information security obstacles, verification of user created content, social networking, performance support applications, single portal to digital resources,	DCG (CKO) ICW HQDA and DOD

	Google-like search engine capability, secure assessments and evaluations, and user tracking and feedback systems. Collaborate across services on common goals.	
	Develop and implement automated training management tools to streamline training development and training management processes and resourcing.	DCG (CKO) ICW HQDA , G-3/5/7, and CAC
Resourcing models	Develop and gain approval for a resourcing model to replace ICH that adequately covers nonresident delivery methods, nonresident facilitators and/or coaches to support career-long learning model, and digitized learning content development in the schools. Implement one year after approval.	G-8 lead; CAC, INCOPD, and G-3/5/7 support; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing standards
	Develop and gain approval for a strategy and guidelines to replace dL resource model that develops courseware through centralized contract approval process and instead distributes funding to schools for in-house development of digitized learning content.	CAC
School model	Update school model to include organization and workforce skills to enable CoEs to expand outreach for external support of technology delivered instruction, reach-back to facilitators and/or mentors, and career-long contact and support of learners across the continuum of learning.	DCG ICW G-8; all CoEs support
Digitized learning content	Create multidisciplinary team workforce skills capable of rapidly developing and updating digitized learning content to include applications in the CoEs. May include some use of in-house contractor support and training and certification to upgrade current workforce skills.	CAC lead; all CoEs support
	Develop enabling processes and technologies for rapid development of digitized learning content that is modularized, easily updated, encourages innovation, and is not stifled by excess rules.	CAC ICW G-3/5/7
Policy	Develop and gain approval for a specific plan to update TR 350-70 to conform to ALC 2015 and identify key points of change. Achieve better balance between standards, quality, and utility. Eliminate excessive bureaucratic steps.	G-3/5/7 lead; CAC, DCG, IMT, INCOPD, and CoEs support

	Develop and gain approval implementation of HQDA policy on TDE that clearly separates learning activities from unit responsibilities and ensures Soldiers complete learning activities on work time, not personal time. Includes compensation for Reserve component completion of dL courses.	HQ TRADOC G-3/5/7 ICW G-1/4, HQDA, HRC and FORSCOM; DCG, ARNG and DCG, USAR support and coordinate Reserve component participation in establishing requirements and processes
	Streamline policies and guidelines to shorten development times of technology-delivered instruction. Reevaluate the utility of the shareable content object reference model and optimize to conform to network limitations. Establish levels of digitized content to be developed in-house by CoEs and/or consolidated at organizations with advanced capabilities (that is, JTCOIC or NSC).	CAC ICW G-3/5/7
Establish capacity to sustain adaptation	Implement processes to continually assess the learning model's outcomes in meeting the needs of the force, adjust to operational demands, and incorporate advances in learning science and emerging technologies.	
	Develop and gain approval for quality assurance program policy and accreditation standards whose metrics are relevant, based on outcomes, and support the TCP core functions, themes, and objectives vice process. Clarify CoE and proponent school responsibility for internal and external evaluation as well as commandwide focus on enterprise solutions to garner feedback on Operational Army performance outcomes.	DCG ,(Quality Assurance Office) lead; ICW DCG IMT, CAC, INCOPD, and appropriate TRADOC G-Special Staff; Reserve Component Training Integration Directorate must be included in the G-Staff review and coordinate with DCG, ARNG and DCG, USAR, National Guard Bureau and U.S. Army Reserve Command
	Enhance gathering and dissemination of lessons learned through advanced capabilities to include Soldier transmitted data through mobile Internet devices and other means.	CAC
	Incorporate ALC 2015 required capabilities and supporting research requirements into the campaign of learning, Army warfighting objectives, and Army warfighting challenges.	G-3/5/7 ICW ARCIC; all CoEs and MSOs support
	Oversee the planning, governance, coordination, and tracking of multiple internal and external actions required to implement ALC 2015.	CLIO ICW TRADOC Analysis Center (TRAC), HQ staff; all CoEs and

		MSOs support
	Establish metrics to evaluate the effectiveness of ALC 2015 initiatives and return on investment for the Army.	CLIO ICW TRAC, HQ staff; all CoEs and MSOs support
	Establish pilot programs to demonstrate promising instructional strategies, delivery methods, and encourage innovation across the command.	CLIO ICW TRAC, HQ staff; all CoEs and MSOs support

Appendix C
21st Century Soldier Competencies

C-1. Introduction

This appendix describes the most important 21st century Soldier competencies. These competencies must be instilled during IMT and reinforced across the career span at varying levels appropriate for each cohort and echelon. 21st century Soldier Competencies are discussed below.

C-2. Character and accountability

a. Soldiers and leaders demonstrate Army values, the Soldier’s Creed, and Warrior Ethos through action while also developing character and accountability in subordinates. They accept obligations of service before self and for assigned tasks, missions, their subordinates, and themselves while building confidence in leaders, peers, and subordinates that they can be counted upon to accomplish goals. Soldier and leader actions are guided by the Army Ethic, which consists of the shared values, beliefs, ideals, and principles held by the Army Profession of Arms and embedded in its culture that are taught to, internalized by, and practiced by all Soldiers in full-spectrum operations as well as peacetime.

b. Adhering to and internalizing the Army Ethic develops strong character, ethical reasoning and decisionmaking, empathy for others, and the self-discipline to always do what is right for fellow Soldiers, the Army, and the Nation. Character enables the Soldier to operate in a complex and uncertain environment with the understanding that the Soldier is individually accountable for not only what is done, but also for what might not be done. The pride, esprit, and ethos required of Soldiers as members of the Profession of Arms may require them to sacrifice themselves willingly to preserve the Nation, accomplish the mission, or protect the lives of fellow Soldiers. Qualities of character and ethical behavior will be stressed at every level.

C-3. Comprehensive fitness

Soldiers and leaders develop and maintain individual, as well as that of their subordinates, physical, emotional, social, Family, and spiritual fitness. They display physical, mental, and emotional persistence, quickly recover from difficult situations, and exemplify the resilience necessary to fight and win in any operational situation.

C-4. Adaptability and initiative

a. Soldiers and leaders are comfortable operating in unexpected situations throughout the world. They scan the environment, identify unique or unexpected conditions, and adjust to handle the situation effectively.

b. Soldiers and leaders recognize when standard procedures are not an effective solution to a situation and use innovation to develop new procedures, devices, and others, that are necessary to handle the situation. Mental agility and a global mindset allow them to anticipate changes in the operational environment, adapt to the changes, and anticipate the second and third order effects of their actions and decisions.

c. Soldiers and leaders take appropriate action and calculated risks in the absence of orders or in situations that require modifying orders to achieve the commander's intent while also developing initiative and risk taking in subordinates. They anticipate changes in the operational environment assess the situation and use sound judgment to decide when and how to act. Self-awareness allows Soldiers and leaders to monitor and adjust their actions and those of their teams to constantly assess performance and seek improvement.

C-5. Lifelong learner (includes digital literacy)

a. Soldiers and leaders continually assess themselves, identify what they need to learn and use skills that help them to effectively acquire and update knowledge, skills, and attitudes. Soldiers and leaders value and integrate all forms of learning (formal, informal) on a daily basis to seek improvement of themselves and their organizations continuously.

b. Soldiers and leaders access, evaluate, and use information from a variety of sources and leverage technology (hardware and software) to improve their effectiveness and that of their teams while executing the Army's missions. Digital literacy skills are developed at initial entry and increase progressively at each career level.

C-6. Teamwork and collaboration

Soldiers and leaders create high-performing formal and informal groups by leading, motivating, and influencing individuals and partners to work toward common goals effectively. They are effective team members, understand team dynamics, and take appropriate action to foster trust, cohesion, communication, cooperation, effectiveness, and dependability within the team. Leaders build teams, seek multiple perspectives, alternative viewpoints, and manage team conflict.

C-7. Communication and engagement (oral, written, and negotiation)

a. Soldiers and leaders express themselves clearly and succinctly in oral, written, and digital communications. They use interpersonal tact, influence, and communication to build effective working relationships and social networks that facilitate knowledge acquisition and provide feedback necessary for continuous improvement.

b. Soldiers and leaders inform and educate U.S., allied, and other relevant publics and actors to gain and maintain trust, confidence, and support. Engagement is characterized by a comprehensive commitment to transparency, accountability, and credibility, and is an imperative of 21st century operations.

C-8. Critical thinking and problem solving

Soldiers and leaders analyze and evaluate thinking, with a view to improving it. They solve complex problems by using experiences, training, education, critical questioning, convergent, critical, and creative thinking, and collaboration to develop solutions. Throughout their careers, Soldiers and leaders continue to analyze information and hone thinking skills while handling problems of increasing complexity. Select leaders also develop strategic thinking skills necessary for assignments at the national level.

C-9. Cultural and joint, interagency, intergovernmental, and multinational competence

Soldiers and leaders use cultural fundamentals, self-awareness skills, and regional competence to act effectively in any situation. They use communication, including foreign language, influence, and relational skills to work effectively in varied cultural and joint, interagency, intergovernmental, and multinational contexts. Soldiers and leaders consider and are sensitive to socially transmitted behavior patterns and beliefs of individuals from other communities and/or countries and effectively partner, influence, and operate in complex joint, interagency, intergovernmental, and multinational environments.

C-10. Tactical and technical competence (full spectrum capable)

a. Soldiers and leaders employ tactical and technical skills in full-spectrum operations to accomplish the mission and support the commander's intent. They are experts on weapons systems, combined arms operations, and train their subordinates to be technically and tactically competent. At lower levels, they are technical experts in their specialty and continue to develop their technical skills and those in their subordinates. As leaders grow, they increase their understanding and application of mission command, operational contexts, systems, and technology while operating in increasingly complex environments.

b. Soldiers and leaders are prepared to execute offensive, defensive, stability, and civil support missions throughout the continuum of operations and transition between diverse tasks and operational actions as complex and uncertain operational situations are developed through action. Leaders anticipate tactical, operational, and strategic transitions and use mission command to apply lethal and nonlethal effects to achieve the commander's intent.

Appendix D

Current TRADOC Learning Environment (2010)

D-1. Current TRADOC learning environment (2010)

The appendix describes the current Army learning environment. The Army learning environment consists of three domains: institutional, operational, and self-development (see figure D-1). These domains primarily function independently in the current learning environment. TRADOC's primary influence is in the institutional domain. Army learning

institutions today are achieving their goals, although with significant challenges in maintaining Army leader and performance requirements. This is evident in the exceptional performance of an All-Volunteer Army in unprecedented times of complexity.



Figure D-1. The three domains of learning

D-2. TRADOC institutional changes and throughput

a. TRADOC CoEs have been organized to leverage Base Closure and Realignment Commission decisions and consolidate branches and functions to the maximum extent possible. CoEs are structured around TRADOC's core functions and emerging imperatives (such as knowledge management and lessons learned integration). CoE staffs focus on staff management functions, allowing branch schools to focus on execution. This maintains branch identity and allows commandants to focus on training, education, and experience. It allows close interaction between Operational Army and Generating Force entities and facilitates outreach to the joint community.

b. TRADOC institutional throughput changes continuously based on the needs of the Army. Total resident throughput for all TRADOC courses for FY09 was 583,078, an increase of almost 57,000 or 10.8 percent over the previous year. Projected total throughput for FY10 is 579,551 with little change for FY11 at 574,675. In a snapshot of throughput from one day in January 2010, resident instruction totaled 80,340 (37,625 Active Army, 11,967 ARNG, 5,047 USAR, and 25,701 other) and dL (nonresident) instruction attendees numbering approximately 130,000. This represents 101,000 more than the same time in 2009.

D-3. TRADOC institutional learning structure and courses

Curricula of learning within TRADOC institutions are divided into three major categories: IMT, PME, and functional courses. Both IMT and PME have a schedule of courses required for career progression. Functional courses apply to the specific individual career and position requirements. One of the biggest impediments to changing the Army learning environment is the cold war model embedded in Army internal and external systems of group-style, course-based learning with specified course-start and course-end dates that preclude self-paced course progression. Army institutional planning, strategies, resourcing, scheduling, and implementation all are based on the course model.

D-4. IMT

IMT provides baseline development in Army values, Warrior Ethos, Soldier skills, and core technical competencies required for each MOS. IMT consists of separate tracks for enlisted and officers (see tables D-1 and D-2). Enlisted IMT courses today consist of basic combat training (BCT), and advanced individual training (AIT). Where possible, depending on the branch, both courses are taught in the same location, by the same cadre. Where this occurs, it is referred to as one station unit training. TRADOC officer IMT courses begin with basic officer leader course (BOLC)-B following the precommissioning phase for officer candidates.

Table D-1
IMT enlisted courses

Course	Length and Type	Description
BCT	10 weeks, resident	BCT develops Army values, basic Soldier skills, discipline, and physical fitness.
AIT	Varies	AIT continues Soldier development along with basic competencies for MOS skills. It is often considered as a trade school where learning individual basic job skill sets are acquired.
MOS training	Varies	While not technically IMT, it replaces AIT for prior service Soldiers learning a new MOS. Taught primarily in Reserve component schools.

Table D-2
IMT officer courses

Course	Length and Type	Description
BOLC B	Varies	BOLC B develops Army values and core leadership attributes in junior officers as well as branch-defined technical and tactical skills for demonstrated proficiency at platoon and company levels.

D-5. PME

PME also separates the NCOES from the OES. Within OES there are two distinct components for commissioned and warrant officers (WO). PME provides progressive and sequentially increasing leader development throughout a Soldier's career. It includes branch technical skills development in a decreasing amount to accommodate the increasing leadership roles of Soldiers as rank increases.

D-6. NCO education system

NCOES more progressively crosses over into the self-development domain than any other education system in an effort to better serve Army needs in the ARFORGEN cycle. NCOES combines a structured self-development (SSD) program with a series of courses for NCO career development. The progression of NCOES courses is shown in the table D-3.

Table D-3
NCOES courses

Course	Length and Type	Description
SSD 1	80 hours dL (created, not yet implemented)	SSD1 is intended to become a requirement for Warrior Leader Course (WLC) graduation in FY10 and a prerequisite for WLC enrollment by FY11.
WLC	15-17 days residence	WLC is the first NCOES course. It is for Soldiers selected for promotion to sergeant and applies to all branches. It is typically a 15-day resident course. WLC trains Soldiers in the fundamentals of NCO leadership and warfighting.
Advanced leader Course common core	80 hours dL	Advanced Leader Course common core consists of 80 hours dL and is currently implemented in place of SSD 2.
Advanced leader Course	1 – 13.5 weeks	NCOs typically attend Advanced Leader Course in the ranks of sergeant and staff sergeant. Phase I common core is delivered online. Phase II Advanced Leader Course is branch and/or MOS-specific and primarily resident instruction.
SSD 3	80 hours dL (under development)	SSD 3 is planned as 80 hours of dL. Development is ongoing. It is not currently implemented.
SLC	1-14.5 weeks	NCOs generally attend SLC in the ranks of staff sergeant and sergeant first class. It does not have a common core and includes varying technical track lengths.
First Sergeant Course	Phased out of active Army training	First Sergeant Course is being phased out by 2012 and is currently only taught by National Guard Bureau and Reserve component for NCOs being promoted to the rank of first sergeant.
SSD 4	80 hours dL (under development)	SSD 4 is planned as 80 hours of dL. Development is ongoing. It is not currently implemented.
Sergeants Major Course (SMC)	41 weeks plus 2 days resident or 8 weeks plus 1 day dL and 2 weeks resident	SMC is the capstone course for NCOES. SMC is a requirement for promotion to sergeant major. Two versions of SMC are offered. A 100 percent resident version is 41 weeks and 2 days in length. A dL version is 8 weeks and 1 day of dL followed by 2 weeks of resident learning.
SSD 5	To be determined	In planning phase.

D-7. OES

a. The OES applies to both commissioned and WOs, and there are some efforts to combine course attendance. The typical course progression is shown in tables D-4 and D-5. The OES is continually being adapted to support full-spectrum operations and increasingly employ alternative delivery methods using dL and advanced learning models to take advantage of the depth of today's Soldiers' experience.

Table D-4
OES (commissioned) courses

Course	Length and Type	Description
CCC	21 week resident (active Army)	CCC is the second level of an officer's primary level education after BOLC A and B. It prepares company grade officers for company level command or battalion and brigade staff positions.
Reserve component CCC	Phase 1: common core (75 hours) Phase 2: branch dL Phase 3: branch active duty for training (ADT) (120 hours) Phase 4: school directed dL (156 hours) Phase 5: resident ADT. Includes combined arms exercise (120 hours)"	CCC is the second level of an officer's primary level education after BOLC A and B. It prepares company grade officers for company level command or battalion and brigade staff positions.
Intermediate level education (ILE) and advanced operations course (AOC)	Phase I common core for everyone. Branch officers receive common core and AOC in 10-month resident. Functional officers receive common core at a satellite location followed by 2-179 week functional phase. Reserve component model is dL.	ILE is in the intermediate-level education stage of an officer's career development. This is a 10-month resident course. It prepares majors for full-spectrum operations. Department of Distance Education students are offered education in various modalities and locations: Advanced dL Distance learning: "officer vice machine" no classroom experience. Coach and mentor pilot program using dL curriculum. Pilot is from February to August 2010. The Army school system. ADT: 2 week session of classroom education at a large installation. Individual drill training: weekly or monthly classroom education at a local armory or Reserve center. AOC. Facilitated learning: on-line classroom experience with a facilitator teaching and leading groups of 16 students. Blended learning: a mix of satellite or Army school system and facilitated learning for AOC.

School of Advanced Military Studies (SAMS)	10 month resident	SAMS provides the Army and other services with specially educated officers in the operational art and doctrine for command and general staff positions at tactical and operational echelons.
Pre-Command Course	4 phase program up to 6 weeks resident	The Pre-Command Course provides leader development to command teams, commanders (lieutenant colonel and colonel), command sergeants major, and spouses for battalion and brigade levels of command.
U.S. Army War College Resident Education Program and Distance Education Program	10 month resident or 2 year dL	The Army senior level education for developing strategic leaders is the U.S. Army War College.

b. DA Pam 600-3 describes the Army WO as a self-aware and adaptive technical expert, combat leader, trainer, and advisor. Through progressive levels of expertise in assignments, training, and education, the WO administers, manages, maintains, operates, and integrates Army systems and equipment across full-spectrum operations. WOs are innovative integrators of emerging technologies, dynamic teachers, confident warfighters, and developers of specialized teams of Soldiers. Training and education for WOs follows a unique set of courses for development at key points in their career.

Table D-5
OES WO courses

Course	Length and Type	Description
WO Basic Course (WOBC)	Varies. Resident	WOBC prepares newly appointed officers for their first duty assignments and all subsequent assignments as WO1s and/or chief WO (CW) 2s. The course must be completed within 2 years of appointment.
Action Officer Development Course (AODC)	1 year (maximum) dL	AODC is completed online via the Internet, and provides WOs serving in CW2 or higher duty positions relevant training in organization and management techniques, communication skills, preparing and staffing documents, conducting meetings and interviews, problem solving, time management, writing, coordinating activities, and ethics. The course must be completed within 1 year.
WO Advanced Course (WOAC)	Varies	WOAC focuses on advanced technical training and common leader development subjects designed to prepare officers for assignment in CW3 level positions. The WOAC consists of nonresident and resident training.

<p>Warrant Officer Staff Course (WOSC)</p>	<p>Phase I dL plus Phase II 5 week resident Phase III branch resident</p>	<p>Phase 2 is a 5-week professional development course taught only by the Warrant Officer Career College. Phase 1 (dL) must be completed prior to attending the resident phase. WOs in selected branches may also have to attend an additional WOSC phase 3 at their branch proponent school before being credited with course completion. The branch phase may precede other phases.</p>
<p>Warrant Officer Senior Staff Course (WOSSC)</p>	<p>Phase I dL plus Phase II 4 week resident Phase III branch resident</p>	<p>Phase 2 is a 4-week professional development course taught only by the Warrant Officer Career College. Phase 1 (dL) must be completed prior to attending this resident phase. WOs in selected branches may also have to attend an additional WOSSC phase 3 at their branch proponent school before being credited with course completion. The branch phase may precede other phases.</p>

D-8. Functional courses

The Army, other DOD and government agencies, and academic institutions offer a variety of functional training designed to enhance performance in the next assignment (assignment-oriented training) or as a part of lifelong learning. Some examples include Ranger and airborne, sniper and master gunner, and leadership and skill development courses focusing on strategic planning offered by institutions such as Harvard and other leading corporate and academic institutions.

D-9. Resourcing institutional training and education

a. Institutional individual training and education uses the Training Requirements Analysis System (TRAS), a set of documents that, when validated, result in recognition of resource requirements (see table D-6). TRAS documents provide input required for a system of resourcing systems designed to ensure systematic programming of resources that result in the arrival of instructors, students, ammunition, equipment, devices, training and education materials, dollars, and facilities in time to conduct training and education as planned. HQ TRADOC, Deputy Chief of Staff, G-3/5/7, Training Operations Management Activity, acts as the gatekeeper, to process, staff, and maintain approved TRAS documents. Time requirements for the long- and short-range planning and resourcing for TRAS documents is continuously criticized for nonresponsiveness to requirements for rapid change and implementation of lessons learned.

**Table D-6
TRAS Documents**

Document	Time	Description
Individual Training Plan (ITP)	Required 5 years before the implementation FY for new or revised training and education, in order to align the resource requirements with the planning, programming, budget, and execution budget formulation process.	The ITP is the long-range planning document. The ITP articulates the proponent’s career-spanning training and education strategy for a MOS, area of concentration, or separate functional area.
Course Administrative Data	Required 3 years before the implementation FY, to allow for validation of changes during the Structure Manning Decision Review and TRADOC review of manpower.	Course administrative data is the proponent’s initial estimate of resource requirements (such as, equipment, ammunition, facility, and ICH).
POI	Required 1 year prior to the implementation to support input to the course level training model.	The POI is the proponent’s refined requirements document. Information from the POI used to feed resource models includes: course number, method of delivery, course name, status date, training location, management category, optimum class size, course length, class size, total academic hours, instructor contact hours, requirements for equipment, facilities, ammunition, and training aids, devices, simulations, and simulators.

b. Determining instructor resource requirements is complex. An ICH is based on the course academic time. An ICH represents one instructor work hour during which an instructor is in contact with a student or students and is conducting, facilitating, or performing instructor duties using the specified methods of instruction and ISR (see table D-7).

Table D-7
Instructor student ratio examples

Type of Instruction	ISR	Comments
Audience	1: audience	Size does not matter. Passive, one-way presentation.
Conference and discussion	1: 25	
Large group instruction	1: 25	
Small group instruction	1: 16	
Facilitated problem centered instruction	1: 8 (recommended)	Groups work on their own with faculty and/or instructor support. Possible to work with multiple groups.
Note: ISRs are lower after using Manpower Staffing Standards System calculations to compensate for other types of instructor work hours, such as time required for development, preparation, student assessment, grading, counseling, profession development, and publishing (for military education institutions).		

D-10. Faculty and instructor selection and development

a. ARFORGEN has a significant impact on faculty and instructor selection and availability. Yet, the importance of faculty and instructors within the institutions requires noting. They are the key to quality training and education. “The success of institutional education and training depends on having experienced faculty who are leadership mentors, role models, and teachers.”⁴⁹

b. Challenges within PME today have produced a mixed quality of faculty and instructors. The demands of war provide limited assignments or availability periods for the best military faculty and instructors. Rewards have been limited although command and promotion rates for military officer faculty continue in a favorable trend. A recruitment and retention issue for civilian academic scholars in Army colleges is largely due to limited opportunities for scholarly advancement (through workload and copyright restrictions) and term-limited appointments.

D-11. Distributed learning

a. dL leverages the power of information and communication technologies (such as, simulation, interactive media instruction, video teletraining, e-learning, and others) to deliver standardized training and education at the right place and time. dL may involve student-instructor interaction in real time (synchronous) and non-real time (asynchronous). It may also involve self-paced student instruction without benefit of an instructor. Efficient use of resources and return on investment for content identified as appropriate for basic dL (stable, high volume) is one of the primary purposes of dL, while other high-end technology applications provide returns in quality of learning based on fidelity, immersion, and motivation, among other aspects appealing to learners. The primary importance to learners, however, is improved access and opportunity and increased lifelong learning to benefit career development.

b. Challenges and problems with dL quality, development, and maintenance within the Army have caused many negative perceptions to persist, while at the same time, enrollment in online civilian universities has increased greatly. Development of Army dL has been plagued by

contractor development times that exceed the lifespan of the material, delivery of products that cannot be updated or maintained except by that contractor, claims of higher levels of interactivity, and content not amenable to bandwidth availability for online delivery. In addition, use of dL is not typically as satisfying for leadership courses and does not provide the social benefits or professional relationships as that encountered in resident PME. dL is seen as a necessity or enabler and not the preferred solution. There are those who persist in moving beyond the perceptions and reality of poor dL examples and development in the Army. Challenges for dL today include lack of required instructor training in the dL environment; competing demands and limited personnel at proponent schools for development and subject matter expertise; responding to rapid changes in learning technologies; funding priorities; and maintaining relevancy and currency of legacy dL products for use and reuse.

Appendix E

Career Span Implications

E-1. Career span implications

This appendix describes the intended outcomes and proposed delivery strategies at the initial, mid-grade, intermediate, and strategic levels of learning. Applying the continuous adaptive learning model across the career span requires that each proponent examine the content of every course to determine what must be taught in a resident learning setting and what material is more appropriately delivered at the point of need. Intended outcomes for each level are described in this appendix.

E-2. IMT

a. This is the critical entry point for the Soldier that combines indoctrination into the Army culture, values, and Warrior Ethos, with basic skills training, comprehensive fitness, and the development of a lifelong learning mindset whereby the Soldier takes responsibility for individual career progress. IMT includes enlisted BCT, one station unit training, and AIT, as well as small unit officer skills in the BOLC and the WOBC.

b. IMT will continue to focus on soldierization, military bearing, discipline, and basic skills (such as, shoot, move, communicate, and first aid training) and will begin the emphasis on key skills that must become ingrained to the point that these skills can be performed under conditions of high stress. Soldiers will spend some time in the classroom (and that time will vary, based on specific skill designations), in various types of learning environments, and they will test and prove proficiency in tactical training environments more closely aligned to the core operational environment. Therefore, many of the key aspects of this training will remain grounded in rigorous physical, emotional, and intellectual experiences that are the bedrock for developing new Soldiers and junior leaders.

c. IMT must increase precision, rigor, and intensity, given the entry-level physical, emotional, mental, and social standards Soldiers bring from the civilian society into the training base. As they transition from civilians, new Soldiers in IMT must quickly become physically fit, mentally agile, morally prepared to join the profession of arms, and competent in a wide range of new

information technologies and data systems in a network. They must also be more capable of understanding different cultures, while quickly adapting to different threats and conflict scenarios. The importance of cultural awareness and the ability to build trust with various indigenous populations may be as effective in protecting future Soldiers as does body armor.⁵⁰

d. Given the assumption that existing U.S. education models will continue to degrade, and physical and values preparation will continue to decline, IMT must overcome negative learning models and a lack of physical and emotional preparation that should be found in the pre-entry civilian environment. Blended learning will be used whenever possible for skill training and performance support applications will be introduced. Support will continue to be available to refresh skills, or add skills sets once assigned to a unit. Training schedules in Soldier advanced technical and basic officer training may accommodate self-paced learning and allow the learner to make some choices in scheduling and selection of elective subjects.

e. IMT must regularly and formally evaluate the training and education provided. Required competencies will change over time and IMT must have the agility to rapidly change training based on lessons learned and feedback from operational units. This will require more disciplined periodic formal reviews of training programs and methods in all areas of the training base, with a view toward eliminating redundant, outdated, or less important training and education while incorporating relevant tasks and instructional techniques that improve the skills and competencies of our Soldiers and leaders.

E-3. Mid-grade level

a. NCOES.

(1) WLC. The WLC will continue to be a resident learning experience that builds leadership skills. Simulations and learning using virtual technologies may supplant some live training; however, the majority of the course will remain face-to-face learning that fosters Warrior Ethos and a commitment to leading Soldiers under difficult circumstances. Some content from WLC may shift to structured self-development and Soldiers will complete more assessments prior to attending WLC that ensure they get the most benefit from the course. Mandatory DA and TRADOC training requirements will decrease to avoid increasing the course length while shortening the training day, to allow time for reflection that is necessary to maximize the learning effect. Continuous adjustments to course length and content will be based on the needs of the Operational Army.

(2) Advanced leader Course. The Advanced leader Course future course revisions will closely align it with the experiences of each Soldier. Assessments will allow Soldiers to test out of portions of the course; however, some mandatory resident face-to-face instruction will always remain. This portion of the course is necessary to build and maintain career management field culture as well as provide opportunities for Soldiers to learn collaboratively from their peers. Increasingly precise assessments may also mean that course lengths may be shortened or more content may be learned in distributed settings. Use of simulations, games, and virtual environments will be expanded to allow more learning to occur through practice while classroom lectures are reduced. More learning will be conducted using complex scenarios that integrate multiple course objectives and promote critical thinking, adaptability, and problem solving.

Course content will also be aligned closely with academic programs that help Soldiers pursue associate and bachelor's degrees in coordination with the College of the American Soldier.

b. OES.

(1) WOAC. WOAC, a branch proponent school course designed to enhance the specialized expertise of a CW3, is currently taught by 15 different schools. Common core leader development is based upon a subset of the branch-immaterial instruction for the CCC. This common core will replace the current prerequisite distributed learning phase provided through the AODC. As possible, common core subjects will be integrated into the branch education, placing it into an appropriate context to demonstrate applicability and facilitate learning. The WOAC educational goal will remain to provide new CW3s with the knowledge and influential leadership skills necessary to apply their technical expertise in support of leaders in a tactical level joint, interagency, intergovernmental, and multinational organization during full-spectrum operations. The CW3 should pursue opportunities to earn a bachelor's degree.

(2) CCC. Currently the CCC is a 20-24 week course offered at 15 branch schools. It provides captains the tactical, technical, and leadership knowledge, skills, and attributes needed to lead company-size units and serve on battalion and brigade staffs. The course emphasizes the development of leader competencies while integrating students' recent operational experiences. Curriculum includes common core subjects, branch-specific tactical and technical instruction, and branch-immaterial staff officer instruction.

(a) By 2015, the CCC is envisioned to be a more tailored, modular learning approach completed over time, with a mix of resident and nonresident-gated learning events that include both standardized and tailored learning modules. This may include face-to-face common core instruction taught at installation regional learning centers and branch technical and tactical resident module. Newly promoted captains, in coordination with their chain of command, can use the Army Career Tracker to develop a sequence of mandatory and elective learning modules that, along with operational experiences, would be completed to pass established career gates in preparation for position assignments. Tailored learning modules would include some self-paced, structured self-development combined with networked links to other students and branch school facilitators in a blended learning approach. A student cohort group will be established and mentored by a facilitator from the branch school. The facilitator encourages peer-to-peer learning, collaboration, problem solving, and social networking.

(b) Common core leader development modules are envisioned to be conducted in a cross-branch, face-to-face setting at the regional learning center by on-site faculty, mobile training teams, networked links to schoolhouse, or a combination of methods depending on location throughout. At this point in the officer's career, broadening opportunities are available for advanced civil schooling, partnerships with industry, and developmental assignments with other government agencies. Reserve component officers will be able to complete their course through a combination of collaborative dL modules and brief resident instruction. Before the transition to field grade, captains should have achieved at least half of the credits necessary to earn a master's degree.

E-4. Intermediate level

a. NCOES SLC. The SLC will be conducted primarily through distributed learning at home stations. NCOs have enough operational experience and experience learning with technology that long trips to the school are not necessary. Simulations, games, and social networking will provide adequate learning mechanisms. Resident instruction at the school will be for live assessments and field training that cannot be administered electronically. SLC will also begin to integrate Soldiers from various MOSs into online combined arms exercises that mirror the complexity and interactions of the operational environment. SLC course content will be aligned with academic programs that help Soldiers complete a bachelor's degree. Increased use of assessments and customized learning means that SLC may have a very different structure. Rather than discrete start and end dates for a course, SLC may be conducted over the course of a year or two where Soldiers proceed through learning activities at their own pace. Cohorts may be established, however, it is also possible that Soldiers will form ad hoc groups each time they begin an online learning activity. Flexibility and precision in the learning system will be more important than the current rigid course management structure.

b. OES.

(1) The WOSC educational goal will be to provide new CW4s with the ILE knowledge and influential leadership skills necessary to apply their expertise in support of leaders on an operational or upper tactical level joint, interagency, intergovernmental, and multinational staff during full-spectrum operations. By 2015, the blended learning provided by combined dL and the 5-week resident phases will include electives in partnership with civilian education institutions. Content will be based upon that provided at ILE, with project management, knowledge management, and developing staff and systems integrator skills. Selected branch proponent schools will provide a third WOSC phase to maintain and enhance the CW4's specialty knowledge. The new CW4 should pursue opportunities to earn a master's degree.

(2) At the senior captain and major level, officers transition to field grade level responsibilities with a resident or distributed ILE experience. At this phase, leaders are prepared to expand their scope of responsibilities through educational experiences that foster advanced critical thinking, adaptability, agility, and problem solving skills. Instructional strategies focus on developing higher-level cognitive skills along with acquiring knowledge of Army-level issues. Small or large group problem-centered instruction is the primary instructional strategy augmented by operationally relevant scenarios and decision dilemmas. Graduates of ILE should possess a master's degree.

(3) School for Command Prep. The School for Command Prep supports command teams throughout the command life cycle by way of a multiphased learning program and readily available command team experts as part of the Army's command team enterprise. Company, battalion, and brigade commanders and 1st sergeants and command sergeants majors as well as their spouses are integrated into the command team enterprise from time of selection through the relinquishing of command. Their support and education includes the continuous adaptive learning model as it pertains to their roles as command team members and supported by all stakeholders of the command team enterprise.

(a) Through a phased system of training and education, dL, blended learning opportunities, and technology supported virtual experiences, the command team will experience preresident and online requirements. This is followed by a short resident learning opportunity that stresses patron knowledge exchanges facilitated by highly qualified former commander teaching teams and then supported by an enterprise nested with the Army's and mission commander's required outcomes. In these key leadership and developmental roles, operational adaptability as well as sophisticated decisionmaking must be honed to a fine point. Learning experiences will focus on complex operational scenarios that include both full spectrum and immediate operationally relevant challenges at different levels of command that account for the changes in experience, maturity, and the relevance of both time and space as it pertains to each successive command event.

(b) Tactical, operational, and strategic thinking processes and problem sets are introduced at the appropriate learning opportunity to build upon previous experience and mitigate knowledge gaps. Previous experience framing problems using design will be refined through repeated scenarios in collaborative, problem-centered, learning experiences in virtual environments like the immersive commander's environment, at both resident and nonresident learning labs across all phases of learning. Stress and ambiguity will increase to further challenge the learners. Facilitators will need to be highly seasoned subject matter experts with relevant operational experience.

E-5. Strategic level

a. The SMC. The SMC is the capstone, strategic level resident educational experience in NCOES. SMC is a task-based, performance-oriented, scenario-driven course of instruction designed to prepare master sergeants for sergeant major and command sergeant major positions within a force projection Army. Major subject areas include team building, common core leadership, military operations, and sustainment operations. Specific areas of study include communication skills, national military strategy, training management, force projection, full spectrum-operations, Reserve components, and a professional electives program. The instructional model includes small group instruction and experiential learning model. By 2015, SMC will remain primarily a resident course; however, the course curriculum will increasingly focus on strategic and critical thinking tied to international trends and national strategy. SMC course content will also be integrated with resident and online college programs that lead to a master's degree.

b. WOSSC. The WOSSC is the capstone level of education for most warrant officers. The WOSSC educational goal is to provide new CW5s with the master-level education, knowledge, and influential leadership skills necessary to apply their expertise in support of leaders on strategic level joint, interagency, intergovernmental, and multinational staffs during full-spectrum operations. By 2015, the blended learning provided by the dL and the 4-week resident phase will include electives in partnership with civilian education intuitions. Emphasis will be on providing a broadening educational experience. Students will attain an understanding of national security strategy, national military strategy, international relations and conflicts, and senior leadership challenges. Selected branch proponent schools will provide a third WOSSC

phase to maintain and enhance the CW5's specialty knowledge. If not already completed, the new CW5 continue to pursue earning a master's degree.

c. The USAWC. In 2015, the USAWC military education level one will continue to focus on strategic level leadership and national security. Graduates are expected to understand the linkages between strategy and the other elements of power at the national level and the planning and conduct of warfare at the theater level. The instructional approach is an inquiry-driven model of graduate study. The curriculum centers on the examination of theory, concepts, and systems as applied to national security, strategy, decisionmaking, and conflict analysis. In 2015, classroom instruction will employ more experiential learning with multilearner games and simulations. The USAWC will continue to be offered through resident and nonresident programs. The distance education program relies on individual effort and asynchronous collaboration among its students using collaborative tools supplemented by a resident phase. In 2015, the online instructional delivery system will offer a dynamic, media-rich learning experience to learners across platforms, operating systems, and device sizes. The USAWC grants a master's degree, but it should also encourage learners to pursue even more education.

E-6. Functional courses

The Army, other DOD and government agencies, and academic institutions offer a variety of functional courses designed to enhance performance in the next assignment (assignment oriented training) or as a part of career-long learning. Some examples include Ranger and airborne, sniper and master gunner, and leadership and skill development courses focusing on strategic planning offered by institutions, such as Harvard College, and other leading corporate and academic institutions. These courses are an important part of creating an individualized career path to develop specialized skills for a specific assignment or to achieve personal career goals. The same instructional strategies, 21st century Soldier competencies, and learner-centric environment characteristics enable Army functional course managers to transform learning to a more rigorous, relevant, technology-enabled learning model.

Appendix F

Required Capabilities

a. The Army requires the capability to synchronize individual learning events with position requirements independent of Soldiers' location to increase quality of life and decrease time away from unit location.

b. The Army requires the capability to support senior mission commander's needs for flexible scheduling of training and education by providing individual learning events at unit locations.

c. The Army requires the capability for Soldiers to track and manage individuals education and training through a web-based portal to empower the Soldier with career management.

d. The Army requires the capability to develop, manage, store, and distribute performance support applications and other digitized learning content in the context of advanced network capabilities (such as, cloud computing), to provide on-demand Soldier initiated instruction.

e. The Army requires the capability to balance training standards and changing operational requirements through adaptive policies and processes (training management, training development, resourcing, personnel assignment, and others) to be more responsive to the needs of the Operational Army.

f. The Army requires the capability to deliver digitized learning content to Soldiers worldwide using cloud computing or other advanced networking means to eliminate user frustration and download issues.

g. The Army requires the capability to assess dL products routinely through automated data collection and sharing processes to maintain standards and update learning content.

h. The Army requires the capability to modify the delivery of PME courses in the context of a modular format to support senior mission commanders' priorities for training and education, quality of life, and support lifelong learning models.

i. The Army requires the capability to resource the lifelong learning model in both resident and nonresident delivery methods to support senior mission commanders' training and education requirements and Soldier quality of life.

j. The Army requires the capability to rapidly develop, update, and share digitized learning content through an in-house workforce that is skilled across multidisciplinary domains (instructional design, media development, gaming, simulations, and others) and empowered to apply innovative, evidence-based strategies to support Armywide, on-demand learning with relevant, engaging learning products.

k. The Army requires the capability to encourage peer-to-peer learning through use of online social media to facilitate problem solving, collaboration, information needs, and provide virtual learning opportunities.

l. The Army requires the capability to adapt instructor selection and assignment processes through policy and procedures to develop and reward a corps of expert learning facilitators capable of increasing the quality of learning events.

m. The Army requires the capability to create incentivized, developmental, career-enhancing assignments through policies and procedures to attract the best qualified instructors and facilitators.

n. The Army requires the capability to identify and teach appropriate levels of digital literacy for each cohort and echelon to ensure Soldiers and leaders possess standardized skills by level that support Army needs and a lifelong learning model.

o. The Army requires the capability to develop adaptive digitized learning products that employ artificial intelligence and/or digital tutors to tailor learning to the individual Soldiers'

experience and knowledge-level and provide a relevant and rigorous, yet consistent, learning outcome.

p. The Army requires the capability to measure the relevance of learning outcomes based on reliable performance metrics and measurement tools so that feedback from the Operational Army is integrated into improved learning products rapidly.

q. The Army requires the capability for Soldiers to clearly separate learning activities from unit responsibilities in the context of Soldiers completing learning activities on work time, not on personal time, to maximize the learning experience and support quality of life.

r. The Army requires the capability to continuously improve and modernize the individual learning model at an organizational level by seeking, evaluating, and integrating advances in learning technologies and evidence-based learning methods so that the Army remains globally competitive and on the forefront of learning.

s. The Army requires the capability to conduct pilots of new learning methods and technologies to support continuous adaptive integration of new improved methods.

t. The Army requires the capability to synchronize the transition of advanced learning technologies and methods developed by Army and other research agencies, and conduct pilot evaluations across the various learning spectrums to support the Campaign of Learning and be responsive to the changing learning opportunities.

u. The Army requires the capability to provide Soldiers with easy access to relevant information and learning content on-demand through search engines and information repositories that match the speed and reliability of commercial products.

v. The Army requires the capability to eliminate download delays to deliver digitized learning content and information on demand.

w. The Army requires the capability to conduct tough, realistic training, adapting as the mission, threat, or operational environment changes, while ensuring that individual and collective training fosters adaptability, initiative, confidence, and cohesion to conduct operations decentralized.

x. The Army requires leaders who are comfortable serving on civil military teams.

y. The Army requires lifelong learners who are creative and critical thinkers with highly refined problem solving skills, with the ability to process and transform data and information rapidly and accurately into usable knowledge across a wide range of subjects, to develop strategic thinkers capable of applying operational art to the strategic requirements of national policy.

Glossary

Section I

Abbreviations

ADT	active duty for training
AIT	advanced individual training
ALC	Army Learning Concept
AOC	advanced operations course
AODC	action officer development course
ARCIC	Army Capabilities Integration Center
ARFORGEN	Army force generation
ARI	Army Research Institute
ARNG	Army National Guard
BCT	basic combat training
BOLC	basic officer leader course
CAC	Combined Arms Center
CCC	captains career course
CKO	chief knowledge officer
CLIO	chief learning innovation officer
CoE	centers of excellence
CW	chief warrant officer
DA	Department of the Army
DARPA	Defense Advanced Research Projects Agency
DCG	deputy commanding general
dL	distributed learning
FM	field manual
FORSCOM	Forces Command
FY	fiscal year
HQ	headquarters
HRC	Human Resources Command
ICH	instructor contact hours
ICW	in coordination with
ILE	intermediate level education
IMT	initial military training
INCOPD	Institute of Noncommissioned Officer Professional Development
ISR	instructor to student ratio
ITP	individual training plan
JTCOIC	Joint Training Counter-Improvised Explosive Device Operations Integration Center
MMOG	massively multiplayer online games
MOS	military occupational specialty
MSO	major subordinate organization
MTT	mobile training teams
NCO	noncommissioned officer
NCOES	noncommissioned officer education system

OES	officer education system
Pam	pamphlet
PME	professional military education
POI	program of instruction
SAMS	school of advanced military studies
SLC	senior leader course
SMC	Sergeants Major Course
SSD	structured self-development
TCP	TRADOC campaign plan
TDE	temporary duty for education
TRAC	TRADOC Analysis Center
TRAS	training requirements analysis system
TRADOC	Training and Doctrine Command
U.S.	United States
USAR	United States Army Reserve
USAWC	U. S. Army War College
WLC	warrior leader course
WO	warrant officer
WOAC	warrant officer advanced course
WOBC	warrant officer basic course
WOSC	warrant officer staff course
WOSSC	warrant officer senior staff course

Section II

Terms

adaptive learning

A method that endeavors to transform the learner from a passive receptor of information to a collaborator in the educational process.

Army force generation

Synchronized the training, readiness, and deployment cycles of corps, divisions, and brigades to build cohesive teams, mentor subordinate leaders, and establish the level of trust necessary for successful decentralized execution (TRADOC Pam 525-3-1).

army values

Principles, standards, and qualities considered essential for successful Army leaders. The Army values are: loyalty, duty, respect, selfless service, honor, integrity, and personal courage.

augmented reality

A live direct or indirect view of a physical real world environment whose elements are augmented by virtual computer-generated imagery.

blended learning

Combines face-to-face classroom methods with technology delivered instruction that can be delivered either in a resident or nonresident environment to form an integrated instructional approach.

campaign of learning

An integrating process that focuses learning on critical operational issues, identifies for the community priority army warfighting challenges and questions to be answered, reduces unnecessary redundancies across learning activities (with joint, capabilities needs assessments, studies, wargames, and others), be adaptable to support quick-turn assessments, and adopt senior leader investment and approval.

capabilities based assessment

The Joint Capabilities Integration and Development System analysis process; answers several key questions for the validation authority prior to their approval: define the mission; identify capabilities required; determine the attributes and standards of the capabilities; identify gaps; assess operational risk associated with the gaps; prioritize the gaps; identify and assess potential nonmateriel solutions; provide recommendations for addressing the gaps.

cloud computing

Internet-based computing, whereby shared resources, software, and information are provided to computers and other devices on demand.

collective training

Training, in either institutions or units that prepares cohesive teams and units to accomplish their combined arms and service missions throughout full-spectrum operations.

competency

A cluster of related knowledge and skills that affect a major part of an individual's job (a role or responsibility), that correlates with performance on the job, that can be measured against accepted standards and that can be improved via training and development.

counterinsurgency

Those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency (DOD, NATO).

decentralization

The dispersion or distribution of functions and powers, specifically the delegation of power from a central authority to regional and local authorities; process of dispersing decisionmaking governance.

distributed learning

Delivery of standardized individual, collective, and self-development training to soldiers and DA civilians, units, and organizations at the right place and time through the use of multiple means and technology; may involve student-instructor interaction in real time (for example, via two-way audio and video television) and non-real time (for example, via computer-based training).

May also involve self-paced student instruction without benefit of access to an instructor; (for example, correspondence programs).

full-spectrum operations

The Army's operational concept. Army forces combine offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action - lethal and nonlethal - proportional to the mission and is formed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces (FM 3-0).

functional courses

Courses designed to qualify leaders, Soldiers, and DA civilians for assignment to duty positions that require specific functional skills and knowledge.

institutional Army

Those organizations and activities that generate and sustain trained, ready, and available forces to meet the requirements of the National Military Strategy and support the geographic commander in the performance of the full spectrum of military operations; and administer executive responsibilities in accordance with public law.

instructor contact hours

Manpower workload factor that represents one faculty and/or instructor work hour devoted to conducting training and education. The ICH for each lesson is related to optimum class size and computed by multiplying the number of academic hours times the number of student groups, times the number of instructors required per group.

lifelong learning

Individual lifelong choice to actively and overtly pursue knowledge, the comprehension of ideas, and the expansion of depth in any area to progress beyond a known state of development and competency.

operational adaptability

The ability to shape conditions and respond effectively to changing threat and situations with appropriate, flexible, and timely actions.

program of instruction

A requirements document that covers a course and/or phase. Provides a general description of the course content, the duration of instruction, the methods of instruction, and the delivery techniques; lists resources required to conduct peacetime and mobilization training.

self-efficacy

An individual's confidence in the ability to succeed at a task or to reach a goal.

soldierization

Tough, comprehensive process that transforms volunteers into Soldiers; results from the total immersion in a positive environment active, involved leadership establishes. Environment sets high standards, provides positive role models, and uses every training opportunity to reinforce basic Soldier skills.

Endnotes

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- ¹² A Leader Development Strategy, p. 3-4.
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- ²⁴ U.S. Department of Education. International Education Rankings Suggest Reform Can Lift U.S. Report on Secretary Arne Duncan's remarks at Organization for Economic Cooperation and Development release of the Program for International Student Assessment 2009 results.
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- ²⁷ TRADOC Pam 525-3-7-01, p. 35-46.
- ²⁸ Wagner, Tony. *The global achievement gap*, chapter 1.
- ²⁹ FM 6-22, appendix A.
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- ³⁷ Burns, W. & Freeman, W. Developing more adaptable individuals and institutions, p. 2.
- ³⁸ Technology-delivered instruction is the generic term used in this concept to describe a range instructional delivery means that may include computer-based instruction, web-based instruction, gaming, video, interactive multimedia instruction, virtual worlds, massively multiplayer online games, simulations, and others.
- ³⁹ Fletcher, J. & Chatham, R. Measuring return on investment in training and human performance, p. 19.
- ⁴⁰ King, Alison. From Sage on the Stage to Guide on the Side, p. 30.
- ⁴¹ One of the most stimulating insights in contemporary educational theory is Benjamin Bloom's (1984) discussion of solutions to what he calls "the two-sigma problem." Bloom shows that students provided with individual tutors typically perform at a level about two standard deviations (two "sigmas") above where they would perform with ordinary group instruction. This means that a person who would score at the 50th percentile on a standardized test after regular group instruction would score at the 98th percentile if personalized tutoring replaced the group instruction. Vockell, E., What Specific Strategies Enhance Learning? *Educational psychology: A practical approach*.
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- ⁴⁶ A wiki is a website designed for multiple people to collaborate by adding and editing content. Wikipedia and MilWiki are examples of a wiki.

⁴⁷ Haptic is defined as relating to or proceeding from the sense of touch.

⁴⁸ Burns, W. & Freeman, W., p. 2. Provides background on becoming adaptable.

⁴⁹ LTG Caldwell 2009.

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