White Paper Coordinating Draft

Adaptive Leaders Course (ALC)
Teaching Old Dogs New Tricks

A Proposed "Addendum" to the Capstone Concept

U.S. Army Capabilities Integration Center (Forward)

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ABSTRACT

The Secretary of the Army and the Army Chief of Staff explicitly state that the U.S. Army is going to adapt its culture to encourage develop and teach Adaptive Leadership. The Army is learning and leaders admit it must reshape its leader educational and training programs as part of a new leader paradigm into what a recent *Army* magazine article identified as "Learning Organizations."

U.S. Army Training and Doctrine Command (TRADOC) has identified a need to move from the current Industrial-Age leader development paradigm, and as a result has published a number of papers from TRADOC Areas of Interest (TAIs) to support its Campaign Plan objective "Reshape the fundamental Army Learning Process for a dynamic Operating Environment." "TAI 2 Learning for Adaptation" provided the ingredients for the paper "Learning for Adaptation: U.S. Army Training and Leader Development in the Early 21st Century."[1] This paper lays the foundation to "discovering possible solutions as the Army continues to adapt to new settings and environments."[2]

One of the twelve study objectives of this paper is "Integration of recent leader development initiatives and a comprehensive leader education model with emphasis on human, cultural and cognitive understanding."[3] "Adaptive Leader's Course (ALC) Teaching Old Dogs New Tricks" is an approach to evolving U.S. Army leader-centric institutions to ones that not only can teach and evaluate adaptability in leaders, but also become adaptive leader-centric institutions.

Cultural evolution within leader development is the optimal start point as Army leaders tackle the complex issues of addressing laws, regulations and beliefs that deal with today's leader paradigm. The Adaptive Leader's Course (ALC) offers examples of viable education and training solutions as sought and asked for in "Learning for Adaptation: U.S. Army Training and Leader Development in the Early 21st Century."

Specifically the first recommendation in "Learning for Adaptation" is "Change the Professional Military Education (PME) model to adapt to the contemporary operational environment (COE) and the Army Forces Generation (ARFORGEN) model, and leverage Army Distributed Learning (ADL)." This paper supports the specific action of recommendation number 1's "Direct the development of an overarching conceptual framework for adaptability that captures emerging research and will guide the implementation of related adaptability education and training concepts throughout TRADOC."[4]

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[1] Lieutenant General John M. Curran and Mr. David C. Mock, "Learning for Adaptation: U.S. Army Training and Leader Development in the Early 21st Century," unpublished paper, (Fort Monroe, VA; Army Capabilities Integration Center (ARCIC), March 2006), p. 2-3.

[2] "Learning for Adaptation," p. 2.

[3] "Learning for Adaptation," p. 1-2.

[4] "Learning for Adaptation," p. 32.

PREFACE

The U.S. Army's Capabilities Integration Center (Forward) provides an excellent environment for selected military officers and civilians to reflect and use their career and an educational experience to explore a wide range of critical issues in order to support TRADOC's to "think for the Army." We seek to "influence without authority" by providing intellectual underpinnings for change.

Adaptive Leader Course (ALC): Teaching Old Dogs New Tricks," provides a course of action "how-to" in the teaching and training of adaptability, not only for leaders but also in its institutions. The author advances a recommended model, the Adaptive Leader's Course (ALC), to support the Army TRADOC Campaign Plan (March 2006), as well as TRADOC Area of Interest (TAI) 2 "Learning for Adaptation."

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ABOUT THE AUTHOR

Maj. Donald E. Vandergriff, U.S. Army, retired August 30, 2005 following 24 years of active duty as a Marine enlisted and Army officer. He has served in numerous troop, staff and education assignments in the United States and overseas. Vandergriff is a recognized authority on the U.S. Army personnel system, Army culture, leadership development, soldier training and the emergence in the early 21st century of asymmetric warfare.

Don has authored over 50 articles, numerous briefings and 3 books (one forthcoming). His magnum opus was the extensive study of the Army's personnel system and culture, while making recommendations to prepare the Army for the 21st Century called *Path to Victory: America's Army and the Revolution in Human Affairs* (Presidio Press, May 2002).

While working at Army Capabilities Integration Center (Forward), Mr. Vandergriff has authored "The Future Leader Study," which contains a series of papers and studies recommending changes to today's leader paradigm and will contribute toward the evolution of Army leader development programs. Some of these recommendations have already been integrated by the Army's Basic Officer Leader Course (BOLC) II course, and the Army's RETAL (Review of Education, Training for the Army Leader) Task Force studying the "Pentathlete" or future Army leader.

Adaptive Leaders Course (ALC)
Teaching Old Dogs New Tricks

The Secretary of the Army and the Army Chief of Staff explicitly state that the U.S. Army is going to adapt its culture to encourage, develop and teach Adaptive Leadership.[1] The Army is learning and leaders admit it must reshape its leader educational and training programs as part of a new leader paradigm into what a recent *Army* magazine article identified as "Learning Organizations."[2] Learning Organizations evolve with its operating environment by rapid application of its lessons learned. Such organizations can deal with complexity theory as it is applied toward war because people at all levels are capable of proactively developing and implementing new ways of achieving individual, unit, and institutional excellence and effectiveness.[3]

The TRADOC Campaign Plan and supporting papers such as "Learning for Adaptation: U.S. Army Training and Leader Development in the Early 21st Century" address educational reform. In these plans, TRADOC assesses and evaluates the Army's educational and training environment in order to create leaders that acquire and master the trait of adaptability. Further, these papers identify weak spots and points of failure in U.S. Army training and Leader Development – all on behalf of retooling the system in ways that facilitate the development of officers who are intuitive and adaptive. As a genesis for creating a Learning Organization, these papers seek its members to provide the details to its objective of "Learning for Adaptation."[4]

A Journey, not a Destination[5]

The U.S. Army has proven itself repeatedly adept at training Soldiers and officers for linear war. However, as "Learning for Adaptation," points out *training* is far less vexing a challenge than *education*.[6] The Future Army with Joint and Expeditionary Capabilities needs adaptive leaders, yet it continues to educate officers, NCOs and civilians in a system that evolved from Industrial-Age educational theories. Emerging Army documents indicates that its leaders recognize the need for cultural change. Now the hard part, the "how to" of teaching and nurturing adaptability.

U.S. Army professional education has concentrated on teaching prospective leaders the rigorous, sequential analysis embodied by the Military Decision Making Process (MDMP), counting on constant practice to hone decision-making skills to the point where they become rapid and intuitive. Eventually, this becomes reflexive decision-making. However, Reflexive Decision-Making is an entirely different process, known as Recognition Primed Decision-making. Research points toward Experiential Education as the best, if not the only way to teach Recognition Primed Decision-making.[7]

Why is this direction better than the proven MDMP using the competency education model?

Both the analytical and the heuristic methods have an appropriate place in the world of decisionmaking. Analytical decision-making is strongest in situations that are unfamiliar to the decisionmaker and/or there is sufficient time to apply a full, in-depth analysis to the problem to find the best answer to address it.[8]

Heuristic decision-making, as exemplified by the Recognition Primed Decision-making model, addresses situations where time is not available and a solution is required for immediate implementation. One is not necessarily better than the other and the choice of which process or even a combination of processes to use should result from the situation presented to the decision-maker.

Of the two types of decision-making, the analytical process is easier to train the inexperienced to execute. The United States Army dedicates large amounts of training time in its professional schools to teach officers and noncommissioned officers the Military Decision- Making Process. The Military Decision-Making Process is a great equalizer. It affords a common method for solving problems and making decisions by individuals possessing knowledge and experience from the novice through the expert. Its use should produce optimal solutions to the problem or at worst, produce plans that should not fail.

However, Leaders make many of their decisions quickly on the field of battle or field of peace under stressful conditions. In this environment, the RPD model of decision-making provides the best method of operation. However, an inexperienced and ignorant decision-maker probably will not make the most effective decisions using this model and will often produce plans that fail. The best RPD decision-makers possess a vast array of knowledge and experience from which to draw courses of action. The drawback is the amount of time required to acquire the requisite knowledge and experience to conduct effective decision-making in this manner.

The decision-making method best suited for low-time/high-risk decisions is a naturalistic/heuristic method exemplified by the Recognition Primed Decision-making process. Quickness in the choice of a workable solution to a problem is the critical component. A key aspect of this decision-making method is pattern recognition. It requires a large personal database of knowledge for the decision-maker to be fully effective in identifying patterns in a situation and adapting an appropriate solution to it.

The implications of this are clear: the Army must start to develop intuitive decision-making skills among its leaders, and the earlier the better. It is also important to recognize that, while conceptually opposite, the two models are not mutually exclusive in practice. It is possible, for example, to incorporate analytical elements as time permits into what is essentially an intuitive approach.

How can the Army evolve to meet these challenges? The answer is a new professional education revolution that ignites a new leadership paradigm. John Schmitt, theorist and author, describes a different way to view war and the education of leaders, "War is fundamentally a far-from equilibrium, open, distributed, nonlinear dynamical system highly sensitive to initial conditions and characterized by entropy production/dissipation and complex, continuous feedback."9

With that observation in mind, how the Army creates adaptability must also evolve as the service deals with the complexity war. Schmitt's work with complexity theory as it applies to war can also apply to the education and training of leaders for future conflicts.10 Rather than teaching decision-making and leadership in war as a stable structure, Schmitt argues that the Army needs curriculums of leader development to deal with war that "resembles a standing wave pattern of

continuously fluxing matter, energy and information. War is more a dynamical process than a thing."[11] This means, changing the way we do everything in the professional education of leaders. Experiential Education provides a new foundation for the Army to begin its discovery of new methods to teach adaptability.

Moving toward Experiential Education is a focus of U.S. Army Accessions Command BOLC (Basic Officer Leader Course) Task Force as well as the cadre of the two implementation sites— Fort Sill, OK and Fort Benning, GA—of the Basic Officer Leader Course (BOLC) II. They seek an assimilation of a new set of skills and attitudes "for this new course." One of the recommendations on how to achieve Experiential Education is using a model called the Adaptive Leader Course (ALC). ALC is about a new way of teaching—education and training— and evaluating adaptability. Cadre continues to assimilate ALC into BOLC II. This is an excellent fix supporting the SA's and CSA's visions. It is the only occasion when the Army assembles all commissioned officers and teaches them to a common standard with outstanding instructors. ALC is gradually introduced, first to officers, and then to the NCOs.[12]

Adaptive Leader's Course (ALC) Model

Teaching cognitive skills using the Experiential Education involves the exposure to new ideas, encouragement to experiment with ideas and then applying theories to problem solving, and then reflecting and reviewing on what happened using the learn-evaluate-access approach. An ALC sets the conditions where numerous observations of the student occur through mission scenarios, each under different conditions.

Experiential Education evolved from an education approach developed by a Swiss educator named Johann Heinrich Pestalozzi.[13] He developed his theories on education in the late 1700s, based on the theory that students would learn faster on their own if they "experience the thing before they tried to give it a name." More specifically, the ALC uses Pestalozzi methods to give students the experience to identify the core of a problem, and then deal with that centerpiece of the problem without "wasting time working their way to finding a solution," according to Dr. Bruce I Gudmundsson. The issue is identifying and preparing teachers to use this method.[14]

At the core of Experiential Education is perhaps the most limited resource – a good teacher who can teach and facilitate the student to learn. A teacher must possess the skills on how to mentor each student to do better, while evaluating his or her ability to adapt. A teacher must also have the moral courage, combined with knowledge and experience, to tell a student as well as the appropriate chain of command when a student cannot adapt.

Education is intellectually intense, while training is resource intensive. Training is the reinforcement of a process. As cognitive abilities are established, task training reinforces and provides multiple tools to assist leaders in their decision-making. Put another way, training for most military tasks calls for resources such as ranges or training areas, equipment such as weapons or vehicles. Planners can mass limited resources in a centralized location such as an Army post to support task training allowing for effective execution. A good teacher of adaptability can educate almost anywhere, regardless of resources.

The remaining key factor in creating adaptive leaders is *learning*. Potential adaptive leaders must be able to assimilate the education with their training and apply both through their personal actions. Learning is how to measure if the adaptive leader is ready to go out and put to practice preaching from the ALC. Inculcating future Army leaders in the holistic nature of things – where each leader understands his or her role and the role of the unit within the framework of two or three command levels higher –needs to begin at the pre-commissioning and undergraduate education stages of officer development.

As an example, teachers at any leader-centric course should "refer to Army operations or mission as 'evolutions,' a term which has biological connotations rather than mechanistic ones." This suggests that the theme of curriculums that deal with leader development should be "adaptation and adjustment rather than precise planning, detailed schedules, curriculums and training plans enforcing procedures."[1] The bottom line is that an Adaptive Leader's Course must begin with trust acquired between professionals who have already passed through significant, tough entry standards as both an officer, NCO and then teacher's certification to develop adaptability.

Practicing What We Preach

How to Create Adaptive Leaders, How to Teach-Facilitate-Mentor Handbook: For Instruction of Adaptive Leaders, (referred to from here on as *Adaptability Handbook*) describes the ALC model.[2] Sergeant First Class Jeff Roper and I wrote it, but it is a living document, always evolving. We constantly went back and revised its pages with new lessons or examples. We certified cadre at Georgetown Army ROTC through a course called "Deciding Under Pressure and Fast" with the handbook as the textbook.

"Deciding Under Pressure and Fast" introduced cadre to teaching, facilitating, mentoring and evaluation techniques for adaptability that will enable them to set conditions that allow students to develop effective decision-making skills using Recognition Primed Decision-making (RPD). The handbook is a living document. Testimonials from former cadets serving in Iraq and Afghanistan validate to cadre how well ALC worked. We hoped we could save cadre time by presenting them with the results from our experiments after four years of teaching adaptability in potential leaders.

Cadre from BOLC II and III courses at Fort Sill, OK and Fort Benning, GA attended "Deciding Under Pressure and Fast" in March and April of 2006. Since RPD decision-making requires a substantial investment, the course showed them how to maximize the effective use of time during the six-week BOLC II course (or any other Army course) employing an array of teaching techniques and tools. A two-day version of "Deciding Under Pressure and Fast" introduces instructors to how to teach adaptability.

In "Annex E, Template for Certification of Teachers of Adaptability" of the *Adaptability Handbook* provides a model for a six-week Instructor Certification Course (ITC). "Deciding Under Pressure and Fast" is a shortened, introductory version of this model. All future Soldiers assigned as teachers to any course dealing with leadership and adaptability attends the six-week version in order to become a *Teacher of Adaptability*.

"Deciding Under Pressure and Fast" does not use lectures from the podium or power point briefings. Finally, the course demonstrates to the students that every moment offers a lesson to develop adaptability, but the burden falls upon them, as teachers, for constant preparation. Rather than attempting to ensure cadre mastered the details of every aspect of the ALC model, the key to success was giving them the flavor of the experience, enabling them to learn and evolve on their own, while using the principles outlined here and in the *Adaptability Handbook* as a guide.

The ALC Model: IT WORKS!

As highlighted by the TRADOC paper "Learning for Adaptation," current instructional approaches lack opportunities for experiencing the emotional trauma of failing within a safe environment promoting maturity. ALC enables adaptability, while teachers facilitate scenarios promoting critical and reflective thinking, or *how* to think. This replaces an emphasis on *what* to think (content) to permit building richer and deeper understandings of the self and alternative worldviews, an understanding of which will enrich one's own self-understanding. The Army's future operating environments demands that the emphasis from the outset be on *transformation*, on growing by learning to learn, not learning information alone.

The Army is evolving into a "Learning Organization." This means its leader centric POIs, using the ALC model will expose students to classical education. In the ALC students are taught to find the answers. The ALC model exposes students to an environment where they want to find the answers for themselves, and then the lessons are emotionally marked in time, which builds intuition—a necessary trait of adaptability

"Teaching an Old Dog how to Teach" lays out how Army leaders – officers, NCOs and civilians – "enable adaptability" in students through an educational model called the Adaptive Leaders Course (ALC). The key to an ALC is on developing Teachers of Adaptability because ALC can only be effective with them. "Turn-key" lesson plans and fixed lesson plans memorized by instructors do not substitute for Teachers of Adaptability. Teachers of Adaptability continually update and prepare extensively so that they facilitate the development of adaptive leaders. This effort is not going to be easy, but the reward will be great for the student, instructor, the Army, and the nation.

Annex A

Principles of ALC

ALC principles apply horizontally at any level of the officer education system (OES), as well as the non-commissioned officer (NCOES) and civilian education systems. The model consists of how to teach and evaluate students, how to evolve today's cadre into teachers, how programs of instructions and curriculums become Complexity POIs, and the use of different tools to teach and evaluate adaptability. Reoccurring themes and principles drive the latter aspects of ALC.

The principles guide teachers and students alike. The Army can inform prospective teachers and students of an ALC that they guide by these principles. It is also important that supporting command environments who oversee ALC, as well as the larger Army culture, know them as well.

ALC principles are,

* ALC is a "Learning Organization", which in every moment of the day, in every task, offers an opportunity to teach adaptability – how to think – in places the would-be leader never imagined.

* Teachers place as much ownership for the program in the hands of the students, but make them work for everything.

* Traits of adaptability or attributes of leadership should drive the learning experience, not resources.

* Whenever possible, education and training must take place within a team, from a two-Soldier team to a larger group, depending on the leadership and responsibility level.

* Hazing or demeaning techniques, such as yelling, the "rabid dog approach," are not acceptable. Instead, instructors put pressure on students by use of time, type of scenario, changing conditions, and varying resources as well as the use of sarcasm and other teaching methods to force students to think.

* Evolution is second nature: Teachers evolve the program based on the "lessons learned" from ongoing missions and war. Updating curriculums and training plans is non-stop.

* Teachers listen to well-thought out ideas – even from students.

* Teachers open students to experimentation and explain where and when the use of a certain task and or doctrine may have helped the student leader and the team solves the problem.

* Failure at a particular mission is acceptable as long the student made a serious and genuine attempt to explain their reasoning, and the student demonstrates improvement during succeeding events.

* Teachers measure adaptability through multiple observations – 360-degree evaluations—from teachers, peers and selected experts in given fields, as well as combining the results on easily measurable task accomplishments such as the APFT, Land Navigation, marksmanship, etc...

* Teachers set the example, ethically and morally. They must not let their egos get in the way of encouraging students how to think. Teachers can learn from everyone, students included. Cadre must spend a lot of time observing and taking notes.

* Teachers work very hard. They will have to be very proficient at everything in order to facilitate properly, not only their own Army specialty, but must also holistically understand war. Teachers know other disciplines outside their previous Army duty assignments. Their learning, as they want to impart in their students, is life long.

* Teachers understand theories of cognitive development, decision-making, war, leadership, or any theory or theories that may apply to assist them in facilitating a scenario.

* Teachers always integrate historical case studies to emphasize a learning point.

* Teachers evolve scenarios to give students what they need to develop adaptability. In addition, they must be prepared when conditions are right to teach a task if there is absolutely no time to have a student prepare to teach themselves.

* Finally, Teachers should remember that the adaptive leader course is fun as it is challenging.

Annex B

Complexity Program of Instruction (POI)

The **first** demand of those individuals chosen to teach a course that teaches adaptability is that they must be prepared to *erase their memory*. That is, they must unlearn how they themselves developed and learned. It will be a challenge to establish preparing these newcomers to teach adaptability. The cadre preparing people to teach adaptability should impress upon them that the new methodology comes as a great shock to them, but that success will bring significant rewards, such as preparing students for their most challenging endeavor, leading other Soldiers in war.

Second, the course environment must be one that treats, relies on and trusts cadre as professionals. It is imperative in teaching adaptive learning to treat students – whether cadets, lieutenants, or junior NCOs – with respect. The best means to attain that goal is to prepare cadre for this assignment with the same tone. Such a philosophy will quickly define the teaching environment. This approach will permit the ending of trivial and insignificant aspects such as prescribed times, signing in and out, or other techniques traditionally used to control masses of people such as drill and ceremony or marching students to an event in formation. It opens the door to flexibility and innovation.[3]

In a POI and curriculum developed to deal with war as it really is – a complex and open environment – teaching becomes fundamentally a process of continuous adaptation. The teaching model for this is "teaching, facilitating and mentoring." It essentially describes a way of putting the student through a course of continuous adaptation to changing situations of growing complexity. Most actions in today's real-world operations do not proceed with clockwork mechanics as "operations" but instead as "evolutions" along the edge of chaos.

Rather than thinking of POIs as operating from the top of the institution toward the bottom, the Army should think of POI, curriculum and lesson development dealing with complexity as an adaptive or evolutionary process. Top-down guidance encourages abiding to principles like adaptability, intuition, self-awareness, critical thinking, creative thinking, and strength of character. A new type of instructor, the Teacher of Adaptability, becomes the "Jedi knight," enforcing standards through vast knowledge of many areas, as well as using Experiential Education techniques forcing students to seek and find answers for themselves.

The POI calendar is not blocks of training crammed into every hour of the day. Adaptability trait attainment of the students determines learning ends. The calendar resembles what appears to be a stream running horizontally across the page. It shows little to the student, while listing some key events where teachers must come together to pool their resources, such as the conduct of free play force on force training. It may also provide "aiming points" showing where students attain a certain level of understanding of adaptability.

Each teacher develops these based on his or her own experiences and course key events. These are points in which instructors assess the progress of their students and provide them feedback in order to make improvements. It does no good to give a very complex scenario if the student does not have the abilities or understanding of adaptability to attempt to solve the problem presented

in a scenario, so in turn it assists the teacher with the evolution of the curriculum based on the evolution of the student.

Lesson plans in a Complexity POI also include descriptions of possible scenarios that the instructor can select or modify to teach this principle. The curriculum should also provide recommended "tools" that could range from a sand table to a MOUT site battle with paint guns. During their preparation, the instructor picks the tools and scenarios needed to provide the student the experience, based on an assessment of the student and on what resources are available.

How would these plans look? Essentially, lesson plans list a trait or traits of adaptability. They would enunciate the desired learning ("This scenario provides students the opportunity to create solutions to complex problems in chaotic, unpredictable situations focused on the Adaptability sub categories of 'Social Knowledge' and 'Communication.'"). Finally, they would state the desired result ("At the conclusion of the lesson student solutions should be based more on intuition than on analysis, deliberate planning, and doctrine").[4]

Integrate skills of adaptive leaders into lesson plans practiced and evaluated in the course of a seminar discussion or practical exercise. Scenarios are team centric, while explicitly listed individual tasks and skills. Integrate them seamlessly into the conduct of regular classroom instruction. In addition, principle based lesson plans may include a history lesson which may compel students to adopt multiple perspectives.

Complexity POI is evolutionary. Teachers/instructors/cadre adjusts their plans through "lessons learned" and from student experimentation in previous classes. The goal is to create better ways to nurture students into becoming adaptive leaders. All parts of the learning organization will contribute action and feedback – its "command and control" – through overall cooperation. Complexity POI of a ALC's development of adaptive leaders is fundamentally an activity of reciprocal influence involving give-and-take among all parts, from top to bottom and from side to side.

The bottom line is that this climate drives all members of the organization to do the best they can in preparing their students for the future by using the most effective methods in education and training. The end state is an effective adaptive leader's course by which the Army will create leaders of character who are ready, willing and able to make the right decisions in the face of adversity – whether an armed enemy or fellow Army subordinates, peers or superiors – on and off the battlefield.

Annex C

Teacher (Instructor/Cadre) Facilitation

Teachers in an ALC know how to *teach-facilitate-mentor* and *evaluate* adaptability. How the Army certifies the leaders that it chooses to teach at these courses is critical. This goes far beyond today's demand that instructors must master certain tasks or win certification as instructors by passing an online course consisting of multiple-choice questions, filling out visitor books, or looking good on the podium.

Certainly, instructors must understand tasks, but their knowledge cannot stop at the point of reinforcement of memorization on how to perform a certain task. Instructors must also know how to understand the threads of knowledge that allow a combat leader to choose the appropriate number and type of tasks in combination to solve the challenges that exist in a complex environment.

Building the trait of adaptability requires vast preparation on the part of the instructor. His or her goal is to establish the blend of instructional technologies and facts to use, in the institutional setting. The cadre will be promoting synchronous growth in cognitive development, emotional development and, consequently, knowledge development. The instructor using the teaching-facilitate-mentor approach sets up opportunities for experiencing the emotional trauma of failing within a safe, face-saving environment that is essential if the Army is to successfully create and nurture adaptability.

In an ALC, the instructors' focus must equally be on cognitive development to teach critical and reflective thinking – that is, *how* to think – among students. This should replace the emphasis on the "*what* to think" content that permeates competency-based education environments. The Complexity POI begins this development through exposure to scenario-based problems as early as possible in a student's career and in respective leader-centric courses. Complexity POI puts students in tactical situations that are "above their pay-grade." From the very beginning of an officer's entrance into the profession of arms, adaptability training uses scenarios and case studies to sharpen the students' decision-making skills and to provide a basis for evaluating them on strength of character.[5]

Throughout the Complexity POI historical case studies interlace all scenarios that are delivered through tactical decision-making games, staff rides, and free-play force-on-force exercises of every size and scope. A reoccurring principle involves mentorship through either after-action reviews (AARs) or one-on-one mentorship. Complexity POI does not expect or pursue certainty or precise control.

In a Complexity POI teaching is non-traditional with little reliance on podium lecture or the use of power point classes. The Complexity POI is experiential and uses scenario-based learning. Learning through many scenarios that grow in complexity uses complex unit tasks in the development of adaptive leaders. The program will constantly expose and familiarize students to individual and collective tasks that they may have never seen before. Students are not "wrapped around the task," but how the task fits into solving the larger problem.

The instructor can change the scenario cases based on what the students achieve as well as the level of proficiency of a student unit. While the teachers want students to "experience the thing before you try to give it a name," the teachers also want to give them problems students can manage. This means there is some reasonable chance they can win, but with stress. By exposing the students to too complex a problem, you may discourage them early on from taking risks and thinking boldly about their solutions.[6]

On the other hand, whenever possible the teacher uses scenarios that place selected students three levels of command above the students own. This assists teachers with,

- Seeking to find out what the student would do when presented with a complex problem involving a chain of command. They are not concerned with the student's ability to repeat information already given to him – what he knows – but rather, the student's willingness to use different types of information to solve the problem.
- Placing the student in a command level to be able to understand the place of their unit in the context of larger unit operations. It is not seeking to make them "experts" in higher level operations, but to familiarize them with what goes on above their own level, and then giving back their interpretation back to their peers.
- "Raises the Bar," challenging selected students whose abilities seek more difficult problem solving.

The instructor also creates conflict between the situation in which the original orders evolved, and the situation the leader deals with at that moment. Instructors can also issue vague operation orders (OPORDs). This forces students to make assumptions or educated guesses. As the teacher observes the student leader and subordinates studying and beginning to solve the given problem, he can facilitate by "plugging in bits of knowledge" to encourage students to ask questions.

Another technique is to change the original situation or orders while the student is preparing the solution to the initial problem. This forces the student to either challenge the original order due to its being out of date, or to accept the old order and live with the consequences. However, note that in this learning environment, the major part of the learning takes place when the student briefed the proposed solution, not in the field problem afterwards.[7]

Time is another factor Teachers use to induce stress and enable adaptability. Teachers time scenarios. When time is up, the student presents his or her solution. Instructors and peers then evaluate the student's decision-making ability, not how he or she accomplished the specific tasks.[8]

The students in a class might be using the same tasks and mission, but the teacher has to have the ability to change conditions. The teacher continually revisits the progress of each student daily to evolve his or her lesson plans. This leads to constant AARs, mentoring and counseling of individuals. Experiential learning through scenario-based education is worthless without closing the mentoring and assessing loop. Complexity POI is more than theory.

One of the major concerns with the ALC is achieving a balance between the experiential approach in ALC and other, more tangible "requirements," such as qualification on one's weapon, the Army Physical Fitness Test, and other "graduation requirements" set by a commanding officer, regulation or law. Many individuals believe that you can only one or the other. This is not true. The ALC merges these requirements within the principles of the ALC without diminishing the standards to meet them. ALC evolved from many ideas on how to better educate and train cadets at Georgetown Army ROTC using mental resources, that in turn took the limited resources they actually had, and made the most out of them. Resources or a lack there of, did not seem to impede our success.

Teaching adaptability requires that the tools "enabling adaptability" remain as simple as possible. The systems supporting it, from the plain evaluation cards we used, to keeping logistics from taking our time away (many times opting for using "rubber duck" or fake M16s in place of real weapons) had to remain as simple as possible. Teachers focus on the development of adaptability over time or "evolutionary adaptability" based on numerous observations of students involved in several different scenarios under different conditions.

So, if the cadre plan to use real M16A2s with blanks and MILEs, without taking into account the time to sign for, pick up, travel time, issuing and then zeroing, little or no "enabling adaptability" takes place. There is value in using this equipment, especially in a free play force on force scenario, but balance them with the development of adaptability. Principles outlined in the ALC mix also with traditional "requirements" or graduation standards.

The planning, preparation and execution of the M16A2 range is a good example of a task centric problem that easily tips the scale. We all agree it is essential for "warrior leaders" to be proficient with their small arms. The students like to shot. Teaching and evaluating marksmanship and range conduct limit adaptability. Or, does it? However, the task does not have to be cadre centric either. There is room to enable adaptability. It takes planning and open minds to find that balance.

The ALC at Georgetown Army ROTC did all of this without raising the budget of the program, or adding to our personnel with outside contractors, or with the luxury of hand picking the instructors. The teachers spent a lot of time in constant preparation from developing new scenarios, evolving old ones, to walking through and conducting teacher-reconnaissance of new training opportunities.

Teachers of adaptability evolved entirely with the cadre the Army gave us through its personnel assignment system. (They did bring in outside "experts" in the form of speakers and observers). The teachers of adaptability at Georgetown discovered that students from an "elite university" were not the reason for their success. Sure, this helps, but teachers of adaptability went about imparting knowledge differently into their students in the way they forced them to make decisions under pressure, and then mentored the students to evolve into adaptability.[9]

Annex D

Cadre Certification
"Deciding Under Pressure and Fast"

"Deciding Under Pressure and Fast" demonstrates the kind of environment cadre need to create in their own courses. The course runs non-stop for its entire duration except for an hour break for lunch. The students only know the start time and very little else. Students do not know when or if they can take breaks. The point of these seemingly trivial omissions is to force adaptability from the beginning forcing students to ask questions and assume some risk.

Students are always in a situation conducive to the development of personal initiative and adaptability. Everyone takes an active role in the course. This may consist of learning how to evaluate students during Scenarios Enabling Adaptability (SEA) through other students' presentations, the observation of movie clips where adaptability was or was not demonstrated, evaluating other students from within a group, briefing solutions to the class or their group, or assuming a role during one of many exercises. This serves two objectives, demonstrates experiential learning and keeps students actively engaged.

The course lesson plan is itself an example of adaptation. It evolves from course to course as well, taking in instructor lessons learned, student feedback, and combat lessons. At the end of every course, students conduct an AAR of the course and the teacher. Evolution of the course lesson plan serves both as a teaching point and ensures challenging students. Each course evolves and "raises the bar" to challenge students, giving them more complex exercises and new themes from the principles for the ALC and listed in the "Adaptability Handbook."[10]

One such exercise is "Rearrange Classroom." Prior to course starting time, we set the classroom up to convey a traditional military flavor. There was a lecture stand in the front, rows of desks facing "the front" with its traditional chalkboard (white erase board). An overhead projector added to the traditional flavor. A minute before start time, a senior cadre member was asked to get all personnel into the classroom and seated. The movie *Gladiator* was also playing prior the start time with classroom lights down deemed. The teacher remained outside the classroom talking to students until summoned into the classroom.

The moment the course began, the movie stopped, lights turned on, and the teacher entered and stood to the rear of the students. The teacher began the session with a false lecture in standard format, presenting a task and purpose and begin going over a false time line. For a minute, the teacher read off a fake lesson plan not looking at the students. The students looked back, or they had to turn around, an inconvenience given the traditional way the classroom was set up. The teacher remained at the podium.

After just a minute, some students became frustrated and others confused. The teacher then walked to the middle of class, and asked, "Why did I do this?" "Why did I 'Rearrange the Classroom?" Students responses showed that they had gotten the message. Students answered with "To expect change," "learn how to think outside the box," "how we get caught up in 'this is

how we have always done it," "were expecting 'death by power point," or "we need to begin breaking the mode of 'how we always do things."

"Rearrange the Classroom" exercise opens up teacher's introduction to the course rules of engagement,

* Not here to insult anyone

* Be open minded and prepared to question what you have learned before this course

* Learn from each other

* Challenge you and make you think. Also feel free to challenge me

* When called upon or bringing up a point, stand up, and then talk to the class, not me

*Cell phones are off while in class

Note that at no time during the course did the teacher state the task and purpose of the course, or did anyone introduce me to the class by reading my biography of accomplishments. Students should judge the course, and the instructor, based on its value, not their pedigree.

The "Observe and Evaluate" exercise followed the course ROE. "Observe and Evaluate" exercise teaches cadre to focus on the student, not an evaluation checklist. Students fill in ALC evaluation cards, which are mostly blank (see Annex B Leader Evaluation Assessment Card). Cards list only "Name of the student," "Scenario evaluated in," "date/time group," "unit," and at the bottom "Evaluated by," followed by a "peer or teacher" This has to be circled in order to indicate the experience level of the observer. The card also lists phrases-"Social Skills," "Decision Making" and "Communicating" spaced out evenly on the right, instead of the left, side of the card. Most of the card is open space for observations.

The exercise objective illustrated how different cadre interprets leadership and adaptability. Students then prepare to write down their observations on a specified leader's actions using one of three principles of adaptability as a guide. Students watched the opening scene from the movie *Gladiator*. After a few minutes, the clip stopped without notice and students told to "stop." Then, immediately students "swapped" their cards with other students.

Within each class, groups selected a student from another group to read student cards they had received when told to "swap." This prevents students from modifying their cards as they hear the critiques of fellow student cards. This generates a discussion on the principles of adaptability, as well as clarity in recording observations. Many-experienced cadre remarked how the current evaluation or "Blue card," borrowed from Cadet Command, forces cadre to focus on filling out the card instead of observing.

Getting a feel for waning discussion is part of facilitating. Upon sensing this moment, the teachers began the next exercise "Make Things Harder." This exercise emphasizes task clarity,

leadership and team building. Student instructions, "In one minute divide yourselves into groups numbering five to seven members, making sure everyone is in a group, at the end of time, you should all be sitting in group circles within the classroom with the groups forming a larger circle."

"Make Things Harder" took about two minutes, followed by a short discussion on what happened. Students observed that this exercise taught them points about taking charge, who demonstrates leadership, and how people operate under the stress of time. Another exercise on how to think then immediately followed "Make Things Harder."

"Task Clarity," employs six students and the teacher also using three tennis balls. It starts in a large circle in the center of the classroom with students standing a couple of feet from each other. The teacher then tells them, "The task is establishing a sequence starting and ending with me with the ball thrown and caught by each person." The group performs this task three times.

The teacher introduced two more balls in the third cycle to cause confusion and transition to the next evolution of instructions. The evolved task now consisted of "Taking these three balls, in the sequence labeled on them, 1, 2 and 3. Then move them as fast as possible through the sequence you established, starting and ending with me. Are there any questions?"

Students stood for a few seconds before the teacher begin to facilitate their problem solving. The teacher repeated the task. Then the teacher asked, "How do we solve this problem?" After a few minutes, and many trial and errors, students organize, follow a natural leader. We also timed each attempt to accomplish the task. The teacher asked a student to act as scribe as another student times each attempt. The teacher repeated the task after the second attempt at the new task. The teacher then asked the students if they thought about a better way to solve this task.

As they discussed better solutions, the teacher interjected, "Well a group from the last course got this in 1.2 seconds." Immediately the group fired up and more ideas were thrown in along with comments, "We can beat them." After the fourth overall timed attempt, the student group beat the previous group's 1.2 seconds. This group figured to accomplish the task, they had everyone use their fists to form a tight small circle, and asked the teacher to put the balls in sequence in their container, and then rotate quickly in a small circle touching each fist in the sequence they had established at the start of the exercise. The class held an AAR, followed by the next exercise.

"Maroon" employs all students divided into groups of 5 to 7 students. "Maroon" is a team building, how to ask questions, communications skills and time management exercise. Each team compiles five things they would use if marooned in five minutes.   Students give a copy of their list to a senior member of their group, in this case the Command Sergeant Major and a First Sergeant from the host battalion of the Fort Sill BOLC II companies who was observing. Teams then post five items to the entire class.

Each group had one minute to write out their list and talk about why they chose that item. After each group had done this, the class and the teacher commented on the specifics of their lists. The teacher framed the discussion by asking the groups the following questions:

- Did they designate a leader?

- How did they organize their time?

- How did they organize their group, if at all, to make these decisions?

Students asked few questions during the reading of their instructions for "Maroon." The teacher then asked why so few students asked questions. The teacher used student answers facilitate and explain the use of assumptions and introduce them to the art of asking good questions. In the end, the teacher presented them with a good solution from a previous class that was clear. When someone asked, "How did they come up with that?" The teacher informed them that their solution was based on well thought out assumptions supported with good questions.

Facilitating with a TDG

At this point, the teacher shifted the focus to facilitation skills, revolving around scenario-based education and using a Tactical Decision Game (TDG) as a vehicle. The first exercise was a demonstration also introducing the Scenario Enabling Adaptability or SEA. A SEA is an educational package centered on a scenario that enables adaptability. SEA includes a historical case study, the scenario, teacher notes, past student solutions, tasks associated with the scenario, and how to deliver the SEA using different tools—seminar, TDG or free play force on force—to students. Annex H of the Adaptability Handbook provides teachers a SEA outline, so they can make their own SEA packages.

During the demonstration of SEA deliver using a TDG, the teacher had half the students play them self and the other half evaluates my delivery of SEA using a TDG. The demonstrated SEA centered on a combat situation. The teacher later used non-combat scenarios, as well as non-military movie clips during the evaluation exercises, take students out of their "comfort zone."

The teacher read the SEA, specifically parts outlined in Annex H "How to Teach Adaptability Handbook" used during a TDG. The teacher had the students write their solutions to the problem under a time limit in reaction to my delivery of reading the situation twice-the first time with eyes open, the second with it closed. The teacher read them the student requirement, time limit, and told them "go."

The teacher purposely did not allow questions to bring out comments about not having enough time. When time was up, the teacher told the students to trade their solutions. The teacher then instructed the students in the group to comment on what the student wrote.

The teacher terminated the demonstration after five minutes, and asked the evaluator students to make comments on my facilitation. A power point slide listed techniques in facilitating, asking questions and listening. The slide summarized techniques from chapters 4 and 5 in the "Adaptability Handbook." The demonstration ended with the teacher asking each group to take out another evaluation card, fill it out the same as the card in the "Observe and Evaluate exercise.

Then, the teacher began a movie clip from the movie *Friday Night Lights*. The purpose of this exercise, unknown to the students not selected to participate in the next exercise, was to keep them engaged with engaging leadership through another "Observe and Evaluate" exercise.

As soon as the movie clip began, the teacher went to each group, laid a SEA packet in the center, and asked them to send one member out in the hallway with a copy of that SEA. When all selected students were in the hallway, the teacher pointed to another student in each group and told them to meet me in the corner of the classroom.

In a low voice, the teacher instructed each of these students, without disclosing to the other members, that they were evaluating the facilitators of that group based on what they had learned. The evaluators went back to their groups, and the teacher went out in the hallway and gave brief instructions to the students acting as facilitators. They would have 10 minutes to prepare themselves by reading the SEA, and then take charge of their group and facilitate a SEA using a TDG. They did not know that fellow students were evaluating them.

As the student facilitators prepared for their SEA presentations, the teacher returned to the class. I had one of the senior cadre stop the movie clip and told each group, "Groups, you have two minutes to put together a group card on the observed leader. At the end of two minutes, you will give your card to [the designated senior member observing the class], and then return to your group chairs."

Another senior observer assisted the teacher by picking two groups cards at random, hand them back, one at a time to that group. That group then read and explained their card in one minute to the class. A two-minute critique by the class followed the reading on each group's card. Following the second critique, the teacher returned to the hallway, and told each facilitator to take charge of their group upon arriving at their group and deliver the SEA using the TDG.

The facilitators were given time to present the SEA and to reply to student questions and solutions. After observing members of each group beginning to discuss student solutions, the groups returned to the classroom. Upon the arrival of all groups, the teacher asked the facilitators to one side in front of the classroom and evaluators to the other side. The AAR of the exercise began.

Each evaluator presented their observations. Then, facilitators talked about what they had learned. The class made several comments and asked questions. Another power point slide listed facilitation techniques for students to observe during the AAR for this exercise. The AAR for this exercise closed with the beginning of a movie clip from the movie *Rudy*.

As the movie began, the teacher instructed all evaluators of the last exercise into the hallway. They became the next facilitators. The teacher handed them a new SEA and told them to begin reading it once in the hallway and that I would be out shortly to give them guidance and answer questions. The doors closed once the new facilitators departed the classroom. The teacher told the groups to get out a new card and evaluate a new leader of the ongoing movie clip. The teacher then went to each group and designated new evaluators. After a couple of minutes, the

teacher asked each group to send me another student and meet me in the corner of the classroom away from the groups for further guidance.

A new technique called "Role Playing" added to the facilitation exercise of the SEA. The "Role Playing" technique enables adaptability by setting conditions to observe how a student uses traits adaptability in solving the problem. In this exercise, students played "trouble maker." The teacher asked them on their integrity not to tell their groups what they were doing upon their return to their groups. If asked, reply with "another evaluator."

The "trouble makers" instructions, "Don't go overboard, but test the facilitator by asking a lot of questions, or become a distraction to their management of the group. The teacher wants to show the students how they handle students and retain control of the exercise, while keeping their cool." Following these instructions, the teacher also gave the "trouble makers" a quick summary of the next TDG so they could use this to support their roles.

The teacher returned to the hallway to give the new facilitators new guidance and 7 minutes to read their SEA and make a plan how they were going to facilitate their group. The teacher told the facilitators to lead groups other than their own as they returned to the classroom. This change added stress to the exercise, as well as supported "Role Playing" assuming the facilitator may not know the personality of the "trouble maker" from another group.

The teacher asked the groups to return to the classrooms as the groups began to discuss their solutions to the SEA using the TDG. The teacher then asked the facilitators to one side of the classroom, and the "trouble-makers" and evaluators to team up on the opposite side of the classroom. Laughter erupted from the entire classroom validating that the "trouble-makers" role-played well. Evaluators briefly discussed their observations based on the points of facilitation followed by additional comments by the "trouble makers" on how the facilitator handled their attempts to disrupt the SEA. The facilitator then discussed what they had learned. At the end of all group AARs, the class then discussed the use of "Role Playing," as well as the art of facilitation.

The groups developed their own SEAs in the last exercise of the course. The smaller groups merged into two larger groups, with one of the original groups deliberately left out. The original groups within the large groups had 10 minutes to develop a scenario using Annex H "SEA template" of the Adaptability Handbook. The scenario had to be non-combat, occurring in the U.S. They then had 10 minutes to deliver their scenario to the other group, and the groups then rotated after a short AAR of the delivering group's scenario.

In the final 20 minutes of "Deciding Under Pressure and Fast" belonged to the group left out in the initial merging of all other groups. The teacher then took the remaining group aside and gave them their mission, while the groups had been hard at work developing their scenarios. The final group would present their SEA and then critique student solutions using the lessons they learned over the previous two days. Upon concluding the AARs of the larger groups, the teacher handed control of the class to the final group. The purpose of this exercise again demonstrated the power of "Role Playing" in enabling adaptability, but also highlighted how to facilitate.

The "Role Playing" group facilitated well. First, they got the groups back in the traditional classroom. Then, they read their scenario to them. Their scenario involved a Soldier committing suicide with the students playing the role of the commander of that Soldier. The "Role Playing" playing group asked students to come forward and provide their solution. During the presentations of solutions, the final group also demonstrated the "hot seat" technique of putting pressure on students by incessant "nick picking" and challenging of the students' solutions. I then ceased the exercise after the third student solution.

We concluded the course with an AAR of this exercise. The students talked about the stress of a "hot seat" approach, but also stated that using "Role Playing" that it had a place in enabling adaptability. One other AAR remained with the students critique of the course and the teacher.

Almost all 120 students involved were adamant that they learned a lot about how to teach and enable adaptability. During the course, they were not bored, kept positively engaged, and were determined to read the "Adaptability Handbook" so that they could hone what they learned in "Deciding Under Pressure and Fast." Their only comments under the category "improved" consisted of no introduction or purpose statement of the course, and not following the AAR format during every AAR.

Enabling Adaptability[11]

A teacher that understood adaptability taught "Deciding Under Pressure and Fast" with experiential learning using scenario based education through the SEA. One of the tools used to deliver scenarios within the SEA is the TDG. TDGs during the course consisted of both tactical and non-tactical scenarios. Students saw how experiential learning built upon scenarios delivered through seminar and TDGs enabled adaptability.

* Cognitive ability[12]

* Problem-solving skills.[13]

* Metacognitive skills; these comprise the ability to critically assess your own thoughts, always questioning, "Have I thought about this or that?" As well as looking from the outside in and saying, "What consequences does my decision have?"

Cadre in "Deciding Under Pressure and Fast" learned that SEAs come in many shapes and sizes. They also learned how to develop a SEA on their own experiences using a Annex H in the Adaptability Handbook. Students also learned ho to select a specific tool to deliver the scenario-based education. This is important, the SEA and its delivery. Cadre of BOLC II learned that three factors that must work together to produce learning synergy and successful use of SEAs. They are:

* How the instructor facilitates

* Student understanding of what is being taught (material is presented in a context the students can understand-another skill of good teachers)

* Mentorship (either individually or in a group through an after-action review)

Following each exercise in "Deciding Under Pressure and Fast," the class used the AAR format to go over what they have learned. Gary Klein recommends a "Pre-mortem" to the AAR. This "pre-mortem" occurs before the scenario is finished or any presentation of solutions by students. The teacher tells his students to imagine that the situation has ended in failure. The teacher then facilitates the students through all the things that could have gone wrong with the scenario.[14]

SEAs use scenarios that deal with adaptability are situational-based events that require the individual to exercise mental agility to meet the demands of the situational stimuli as he or she implements a problem-solving solution. During "Deciding Under Pressure and Fast," students learned how to deliver SEAs using,

* A "listening exercise" where the teacher translates instructions from paper into an oral presentation to the students, followed by the students having a limited time to write the instructions down and give them back to the instructor.

* Virtual computer-based wargames are suitable for the evolution of an individual student's adaptability where several students execute the same scenario of a game, and then discuss if they solved it.[15]

* "Staff rides," in which cadre take the students to a battlefield following an introductory, preparatory phase in the classroom. The actual visit is not a tour, but rather, an interactive experience where students role-play one of the battle's leaders, briefing his or her peers, as well as their teachers on the perspective of that leader. The staff ride concludes with an AAR on what the students learned. The staff ride in an ALC is not the same one as prescribed by the U.S. Army.

A staff ride of an ALC employs an experiential training program that uses metaphorical exercises to teach leadership, teamwork and many other aspects of command and organizational effectiveness. Students learn work-related lessons while walking the very fields that Robert E. Lee and George Meade fought over. In the subcategory of military metaphors, battlefield and campaign staff rides place students in leadership roles, representing all levels of command to conduct decision-making and team-building sessions.

* Terrain Board Exercises aid the teacher by showing at the micro level how terrain and weather affects a scenario

* Tactical Decision Games (TDGs) are one of the best ways to develop decision-making skills with little cost, but the teacher must know how to facilitate a TDG or they will teach the wrong lessons.[16]

* Free-play, force-on-force field exercises. These can range from team-versus-team exercises using paintball guns in nothing larger than a room-clearing exercise or small wooded lot, or a large as platoon- or company-size exercises in the field

Students during "Deciding Under Pressure and Fast" were told that the purpose of the SEA concept is to provide opportunities for each student to gain experience. Through their multiple participations, as a facilitator, team leader or member, evaluator and "Role Player," the students gained breadth of experience and skills in decision-making to meet a specific set of circumstances. It is important to note that the teacher prepares to teach lessons from errors the student made in the execution of their plan.

Scenario-based education used with the proper tool provided future teachers with supplemental information that they can convert to experience in students when a new situation presents itself. Even so, teachers of adaptability told cadres participating in the course that SEAs and the prescribed teaching approaches are not substitutes for actual real-world experiences.

Scenario-based concepts benefit student leaders by:

* Improving their pattern recognition skills;

* Allowing them to exercise the decision-making process;

* Improving and practicing their communication skills;

* Increasing their leadership potential;

* Builds character.

The Terrain Board Exercise (or TBE) is one fundamental way of delivering scenario-based education. A scenario employs a three-dimensional terrain model with various props to represent terrain and factors in the scenario. Factors include assets or liabilities. Assets are items that the student can use to develop a solution or optimize performance in some manner. Liabilities may include projecting unrealistic courses of action to problems if the teacher does not have the appropriate knowledge to facilitate.

For example, a common error is lack of understanding of speed and distance in combat. Sometimes students project a solution that is not possible because they ask one of their elements to move too far and too fast through terrain that would inhibit or slow even the best-trained units. The teacher must be prepared to facilitate these actions with questions that make the student rethink the proposed course of action. Terrain boards or similar training support items benefit the students by creating a "top site," which is the ability to see how the pieces of the problem fit together.

A terrain board is also a good way to employ a TDG. Another use of a terrain board is in phase one or classroom preparatory work for a staff ride, as well as during the AARs after the staff ride to compare and contrast with what the actual participants saw. The scenario-based education concept can have maximum benefits and limitations, but there are also benefits, including:

* Interactive Training

* Improvisational Thinking

* Experiential Learning

* Command Experience

* Development under the umbrella of a "learning organization" structure

Interactive Training is a seminar approach that can be highly effective. The teacher can project training focus and integrate experience into the scenario while providing immediate feedback to students on their proposed solutions.

Improvisational Thinking occurs puts a student "on the spot," and the student has to make decisions, and then deal with the outcomes just as would happen in a real situation (they also have to face their peers and teacher with a response to the question, "Why?"). The ability to perform in front of peers can generate the motivation and initiative to develop greater proficiency or diversified skills. In order to create this positive learning environment, the teacher must use judgment to create a challenging level of stress during the scenario, followed by a positive mentoring approach to the after-action reviews. The combination of leadership finesse and mentorship will build a more cohesive leadership team within the unit. "Hot seat" thinking leads to proactive leaders.

Experiential Learning occurs where students learn through the experiences of others. The learning can come in the form of after-action reports, case studies, or observation of an event. Technology enhances experiential learning such as "piping in" (through video technology) the leader who actually experienced the event while he or she is still serving in a combat theater such as Iraq or Afghanistan.

Command Experience is where students express their answers in the form of combat orders. The students must understand and be able to give "FRAGO" (fragmentary orders) based on changes that the teacher introduces during the course of the game, scenario, lab, or force-on-force free-play exercise.

Learning Organizations are "such organizations routinely overcome the impediment of centralized responsibility by instilling within the organization's members a thirst for creativity and a hunger for challenge."[17] The ability to create new skill sets affects leaders much like qualifying on the rifle positively benefits soldiers attending Basic Training and Advanced Individual Training (AIT). An effective use of scenario-based education and strong teacher implementation create a mentorship forum that builds tactical and technical proficiency.

Annex E

Evaluation Principles

The Leadership Evaluation Approach (LEA) of a course that teaches adaptability is a "double loop" system defined as "the knowledge of several different perspectives that forces the organization to clarify differences in assumptions across frameworks, rather than implicitly assuming a given set." Whether on an exam employing TDGs, or during training, teachers use multiple tools to give students continual and detailed evaluations to allow the cadet to evolve, improve, and prepare for the graded field evaluations (GFEs). Teachers evaluate students during these tests using multiple evaluations. Observations focus on their ability to lead, demonstrate adaptability and intuition in making decisions under varied scenarios.

Evaluation criteria include the four guiding actions:

* First and foremost did the student make a decision?

* If so, did the student effectively communicate it to subordinates?

* Was the decision made in support of the commander's intent (long-term contract), and mission (short-term contract)?

* If not, was the student solution based on changing conditions that made it a viable decision even if it violated the original mission order, but nevertheless supported the commander's intent?

"Guiding actions" intertwine with the Army's core values when evaluating a student's leadership performance and potential. The stakes are large, as retired Lt. Gen. Walt Ulmer describes it: "The Army needs to broaden its understanding of successful leadership from one that focuses almost entirely upon mission accomplishment; to one that includes long-term organizational health of the unit and its personnel alongside of mission accomplishment."[18]

Translated, this means successful performance is only when a leader accomplishes a mission. Refer to this as "focusing on the bottom line," but the problem it is shortsighted, and in the current leader paradigm, this produces "performers" rather than true leaders.

Potential for more responsibility on the other hand is an assessment of leadership that observes how the leader develops teams as well as subordinates, even in a student/school setting. Measure the student leader's potential over time, again in repetitive scenarios involving the same team, or in a leader challenged to take on a new team under difficult circumstances.

In the Learning Organization observations of potential over time include a student's understanding of loyalty, initiative and risk-taking. To create problems that demonstrate potential are ones that encourage those students in subordinate roles to take risks in accomplishing their mission. In the AAR, the student commander should praise good performance of his peers (in the subordinate role), while accepting responsibility for their failure. Students demonstrate similar trends over time and they begin to recognize this potential.[19]

As mentioned earlier, 360-degree assessments involve more than just cadre and student observations of a cadet's level of adaptability. Performance evaluations also occur in the classroom. However, this does not imply the use of traditional, industrial-age testing techniques in such instances, because those techniques only reinforce rote memorization. This includes "true or false," "fill-in the blank" or "multiple-choice" examinations. In the past, instructors used these evaluation techniques in order to save time and to provide quick feedback to both the tested student and the teacher.

Since "knowledge" and "social judgment" are also part of the traits of adaptability, continual observations and evaluations of how a leader chooses to communicate decisions to subordinates or to inform the chain of command occur. If leaders do not communicate decisions well to subordinates or units, it makes no difference whether they are decisive or timely. Thus, teachers use essay-based evaluations in the classroom. The use of essays requires teachers with a firm grasp on the English language—grammar and style. Essays also take a lot of time to "grade" but provide a deeper sense of the students' educational progress.

What are the teachers looking for in evaluating the student leaders? A leadership failure suggesting weak character occurs when the student changes his original decision in order to go along with the instructor-recommended solution. If the student stayed with a poor or out-of-date decision from higher authority simply because that is what "higher" told him to do, teachers also mark this as a failure. (The worst thing a student could do was make no decision at all.)

Evaluations award and highlight superior performance. They serve as a record on which the teachers might have to decide that the individual does not have the abilities to become an officer. An effective organization also awards students when they exceed the standard, while enforcing standards. Failure in one or the other degrades the effectiveness of the organization. On the AW battlefield it undermines trust and endangers soldiers' lives.

Annex F

Tactical Decision-Making Games

One of the most significant tools that teachers of adaptability can use is the Tactical Decision Game (or TDG). This inexpensive but excellent tool allows student leaders to experience perhaps as many scenarios as possible in a limited period.[20] The TDG is a cheap tool, but a good tool to enable adaptability. TDGs are a critical part of the complexity POI. That is, TDGs put demands on teachers as well as the students.

The lesson plan of the SEA identifies TDGs as one tool. The SEA also provides the teacher the roles that students play (what unit at what level and those assigned to play the student's commanders and subordinates). The SEA includes what aspect of adaptability the student is going to learn (sometimes not mentioned until the AAR when the students attempt to identify what aspect of adaptability); the students' assets to solve the problem (imaginary in the TDG, real or training aides in training scenarios especially involving force-on-force, free-play exercises). The SEA also assigns missions with an objective and a "commander's intent." Many options provide the teacher to challenge the student's ability to handle difficulty.

Spell out the opposing threat to the student. This can be thorough, or can lack information, again, to make the student think. The teacher can change or adjust all of these based on what he wants to achieve and the level of proficiency of the student or the class. While teachers want students to "experience the thing before you try to give it a name" teachers also want to give them problems they can manage or that the students have a chance to solve.[21]

As cadre get comfortable with TDGs, and they get a feel of how their student leaders are learning from them, cadre can then adjust all aspects of the TDG to teach critical thinking skills. For example, cadre can be vague in certain areas of the OPORD, forcing cadets to make assumptions or educated guesses. This approach also teaches the cadets the important cognitive skill of how to ask questions (while not asking dumb questions). Students that have not listened well the first time to the teacher's instructions ask dumb questions.

Stupid questions

Telling students "there are no dumb questions" is counterproductive to teaching them how to think for themselves. Allowing them to ask dumb questions only reinforces bad habits such as not listening attentively the first time teachers brief an order or provide guidance. In the real world, there is not much time for extensive follow-up questions over the tactical radio. Everything falls back to teaching the cadet how to deal with the stress of combat in the shortest amount of time.

Teachers encourage students to seek more knowledge when they ask pertinent questions. The teacher will now do this through the student brief-back of the proposed solution. Students then give the proposed solution to the TDGs to their peers, who will in turn evaluate the student's

decision. In this case, the instructor is there to guide and facilitate the discussion, and to force the student to seek more answers (but with the conditions to provide the answer). Cadets should seek more knowledge, either in the syllabus or verbally from the instructor on their own time.

The teacher is the referee of the TDG, adding reality to student leader solutions while observing their briefing of the proposed solutions. The instructor may comment with phrases like "not possible," or "in reality this is what this can do for you in this type of terrain." Alternatively, the instructor can ask probing, Socratic questions such as, "Is your course of action in keeping with the spirit of the commander's intent?" On the other hand, "What caused you to change the mission you were given by higher?" These repeated sessions aim at building character – adaptability and intuition – over time through constant 360 assessments, feedback, mentoring and coaching.

Coaching is also the art of facilitating. Teachers who act as coaches facilitate with knowing the right time and place to say something that urges the student forward. They say just enough to leave the student to think about what they are doing, and figure out the problem. Professionals have coaches. Amateurs do not."[22] Teachers of adaptability are professionals, and coaches are indeed needed and appropriate. Beyond merely talking about it, effective coaching is a cultural cornerstone and practical reality of a course that teaches adaptability.

As Colonel Jon Moilanen observes in a recent *Military Review* article, "Leaders mentoring leaders in a clearly defined manner, and complementary coaching of soldiers and teams, and reinforces learning and motivation to adapt. Direct and recurring advice and council among leaders reinforces adaptive behaviors." Coaching has been demonstrated to contribute quantifiably to organizational productivity (up 53 percent), retention (up 39 percent), and job satisfaction (up 61 percent) according to 100 executives from Fortune 1000 companies.[23]

The major benefit of this type of education is that students can be put into situations that are either hard to enact in actual training or too expensive to enact in the field or as a computer simulation (wargames). Student leaders can go over literally hundreds of scenarios without ever leaving the classroom. This establishes a solid foundation in understanding decision-making prior to moving to the field and trying it out repeatedly with more costly "live" training. Obviously, this is not a substitute for free-play, force-on-force exercises, but it is a useful adjunct. If teachers have a particularly relevant scenario, then they are free to enact it.

The following are a set of general guidelines when using TDGs:

Develop TDGs that take students out of their comfort zone. TDGs appeal to a wide specialty and international audience. So introduce and use TDGs with your students in problems they are not familiar with such as combat guys doing non fighting TDGs, and just the opposite for support personnel. Teachers will have to take the time to translate the TDG into Army language (most TDGs can be downloaded the *Marine Corps Gazette* and then rewritten in Army language). Particular leader centric courses may develop different operating procedures, but it is inadvisable to argue about specific procedural points. There will be plenty of time for that during the student debrief.[24]

- TDGs do not have to be tactical. Other types of games exist, for example, the Los Angeles California Fire Department has developed tactical decision games. Even the U.S. Army Chaplain Corps has developed its own games to deal with different scenarios with which chaplains may have to deal.[25] Instructors of other Army leader programs have also developed very good games as tools to teach adaptability.

- Another approach to using TDGs is what Major Philip Peck, a ROTC teacher at Boston University Army ROTC, used called Leadership Development Exercises (LDEs). They provide a practical application for leadership development with little overhead. Major Peck can use what exists in the woods or around a field or parking lot in his problems.

  Each scenario in Peck's exercise program provides problem-solving tasks and situations that the cadets will have to address using an aspect of the U.S. Army troop-leading procedures as an appropriate tool in solving the problem, and not as an end state. They have time constraints and problem-solving tasks that provide for stressful decision-making. Some situations Peck presents do not have easily identifiable answers. Some have many different solutions, and others are not even solvable.[26]

Encourage the student to treat the situation as if her or she were there living it. In many of the scenario events, the student has literally fractions of a second to react, and allowing each one to ponder the situation for hours reduces the benefits of the exercise. Spontaneity is the key. Teachers tell the student leader that the first reaction is probably the best one. Again, this is a good tool to build character, especially when a student' course of action is being attacked by the rest of the class.

Require the student to defend their course of action. No matter what the course of action, if the student thinks he or she is are right, the teacher requires him or her to defend it. Teachers divorce themselves from their egos in order to support a student's decision that contradicts the solution the teacher developed before presenting the TDG to the class. The teachers ask as they listen and guide the student during the briefing, "Is the student's course of action sound?"[27]

Instruct the student leaders to give as much detail as possible in their answers. Students imagine that they are giving orders to their unit, or explaining their actions to their battalion commander. One good approach is for teacher to read scenarios to the students while the student leaders keep their eyes closed – that is, without the benefit of taking notes. In single-person scenarios, teachers have the student leader describe both the techniques that they plan to use, the rationale for that decision, the follow-ups they plan to perform.

In team scenarios, students describe what each student leader is doing and why, and spell out their own actions and reactions. When placed under a time constraint, this approach teaches them how to time-manage, assign and communicate tasks and prioritize tasks. It now becomes an effective tool to lead subordinates in planning and executing a mission with the severe time constraints commonly found on today's battlefield.

Add more to the self-induced stress that student leader will create for themselves in the scenario. Some examples: Play a television that has a VCR – with a war movie – or play loud

music; open the windows and let in the cold during winter; keep a radio speaker turned on in the classroom continually updating the enemy and friendly situation. Teachers feel free to devise any other form of distraction the teacher can think of to approximate the distractions that the would-be leaders would feel in the heat of an actual battle.

Have fun with TDGs. There is no "right" answer, while all responses benefit and highlight the students' perceptions of the problem. There is nothing to stop students from coming up with more than one response. Recognizing, however, that there are many ways to approach a problem, cadre should not limit the cadets to a single pass-or-fail school solution. This can be hard when using the TDG to evaluate decision-making ability during an examination, but it we did it year after year.

 Failure on a TDG is student's inability to make *any* decision. Another cause for failure would be if, in the course of briefing one's course of action (or when the instructor is grading the TDG), the cadet changes his or her decision simply because the instructor challenged the cadet's choice or the cadet simply had a change of heart.

At that juncture, the student fails because they followed what the instructor advocated. They did not stand on their own. Even if the instructor believes that the cadet's decision is a sound one, he may challenge or test the cadet's character in the face of adversity to see how much the cadet truly believes in him or herself. In the end, TDGs provide one of the best educational approaches for building a cadet's strength of character as well as cognitive abilities.

The bottom line is to develop tools that help the teacher develop adaptability while straying away from the use of tools that involve more time and resources in procuring and operating and distract from your main objective. Major Frank Brewster describes TDGs, or as he calls them Tactical Decision Exercise (TDEs):

"The TDE provides an effective mechanism for developing individual ability to make decisions under physical and mental stress. While TDEs are not the perfect substitute for actual training and experience, they do serve to sharpen individual intuitive decision-making ability. In today's military, constrained as it is by shrinking budgets, personnel shortages, and numerous missions, TDEs provide leaders at all levels an opportunity to hone decision-making skills during scenarios that place the student-leader in stressful situations. Recently, there has been a resurgence of the TDE variety of war games. Experiences in peace operations have rekindled interest in the merits of using these role-playing scenarios to develop decision-making skills."[28]

Annex G

Understanding Adaptability[29]

"Adaptability" is a somewhat elusive term and its meaning can vary between two extremes. Adaptation can be passive or dynamic, or one can be either shaped by or shape the situation to his or her own advantage. Innovation, being able to "think on one's feet" and "improvise" is a prerequisite for dynamic, but not passive adaptability. Thus, to develop *Dynamically Adaptive Leaders*, the Army must develop *Innovative* ones first, which is a very tall order and suggests why the "Journey" will be time consuming and less than straightforward. Developing *Innovative, Adaptive Leaders* forces two very basis questions: *What* Leader attributes should Army development efforts address and *How* is the Army going to grow them? The remainder of this section explores these two basic issues.

The Question of WHAT?

Competencies, including lower-order associated knowledge, skills, and abilities, are what we conventionally use to describe leader development needs. Two recent studies identify critical 'Strategic Leader' competencies to 'paint' a 'portrait' of the Strategic Leader, the upper anchor of leader development initiatives, in competency terms. Army Chiefs of Staff commissioned both reviews and they yielded similar findings summarized below.

The mid-80's investigation,[30] based upon interviews with about 2/3 of all then three- and four-star incumbents about their work and its nature, boiled their findings down to these:

- Multi-National (Global) Perspective
- Philosophy of Role of the Army Within Society(ies)
- Strategic Skills – Political, Combat, Organizational Culture & Values
- Communicative – Systems (Mass Media, Organizational), Persuasive (Consensus Building Among 'Players'), Networking & Collegiality
- Systems/Organizational – Building/Engineering Systems & Organizations and/by Establishing Purpose, Values, and Shaping Culture

A more recent study,[31] a review of all relevant literature, concludes that Strategic Leaders should possess these competencies:

- Identity – Who Am I? or 'Self-Awareness'
- Mental Agility
- Cross-Cultural Savvy
- Interpersonal Maturity
- World Class Worrier
- Professional Astuteness[32]

These two sets, though identified through different methods and at different times, are remarkably similar.[33] Reading between the lines and based upon other empirical and

theoretical[34] work, there are two monolithic capabilities that underpin both.[35] They are truly developmental, in the sense used in the Behavioral Sciences literature, and are *Cognitive & Social-Emotional* in nature. [36]

For example, "World Class Warrior" presupposes a well-developed Cognitive Capability to deal with high levels of abstraction, complexity, and ambiguity – to "read" situations well, even those global in scope. The same is implied by "Mental Agility," "Multi-National (Global) Perspective," and "Systems/Organizational – Building/Engineering Systems & Organizations and/by Establishing Purpose, Values, and Shaping Culture." Similarly, "Social-Emotional Capability" must be highly developed to demonstrate "Interpersonal Maturity" at the Strategic Level and "Identity" – "Self-Awareness" and "Professional Astuteness" as well. In fact, "Self-Awareness" is one way of defining level of achieved "Social-Emotional Capability," that is, "Self-Awareness" grows as "Social-Emotional Capability" develops.

Competencies are what Leaders have. They are composed of specific knowledge, skills, and ability complexes and manifest in specific behavior – what Leaders can do and how well Leaders can do it. Apache flight certification assures the Army that the individual possessing it is competent to fly, but it says nothing about how one might employ this asset with others in a combat situation against who for what purposes with what anticipated outcomes; however, the state of development of leaders' Capabilities–Cognitive & Social-Emotional—will provide substantial clues.

Capabilities determine "what we are" – they manifest themselves more globally in the nature of our Frame-of-Reference, or our 'eye on the world,' what we use to make sense of the environment and events happing to others and us. Thus, there are substantial differences between Competencies and the Capabilities, as outlined in Table 1.

Table 1
CAPABILITIES VS. COMPETENCIES

Capabilities Are:	Competencies Are:
• 'What You ARE'	• 'What You HAVE'
• Developed Across Time	• Developed within Time
• Cut Across Specific KSAs & Job Tasks/Subtasks	• Related to Specific KSAs & Job Tasks/Subtasks
• 'Foundational' to all Competencies	• Specific to Jobs & 'Job Families'
• Determiners of 'Level' of Competency Proficiency	• Reflected in Current Competency Performance
• Reflected in 'Stages' or 'Levels' of Current & Potential Growth	• Only Reflected in Current Performance

Taking another example, competence as a "Strategic Planner" means entirely different things depending on the level of Cognitive & Social-Emotional development. For example, at the lowest levels of Cognitive development, planning "strategically" will mean a few hours up to a day or two, while at the higher levels it will mean from one to as many as 20 years or more, that

is, to be able to project the consequences of actions taken today out that far. Consequently, Capabilities underlie how leaders use their Competencies – they are all about how Leaders make "*meaning*," or sense, of the world, issues, others, and themselves. They determine what Leaders think of them and how Leaders behave towards the outside world.

Cognitive & Social-Emotional Development (CD & ED) occurs by "Levels" and in "Stages" for these two forms of development respectively. *Nature*, what we were born with, establishes how far we can progress, our potential, and *nurture* provides the experiences that help or hinder reaching it.[37] Capabilities and Competencies are two monolithic underpinnings depicted below in Figure 1.[38]

Figure 1.

CD LEVELS & ED STAGES

COGNITIVE   *SOCIAL-EMOTIONAL*
(CD) LEVELS   *(ED) STAGES*

5 – 'We' - 'Universal, Humanitarian Values'

4 – 'I' – 'Own' My Values

3 – 'We' – My Army, Group-Centered Values

2 – 'Me' – Self-Centered Values

Pyramid (bottom to top):
1 - Platoon
2 - Company
3 - Battalion
4 - Brigade
5 - Division
6 - Corps
7

Center of Rationality - Principles   **Center of Values - Responsibility**

Cognitive 'Grasp' – 'What I Can Do?'   Moral 'Grasp' – 'What I Should Do?'
'How far does my 'Vision' extend?   'What are the Human Implications to Whom?'
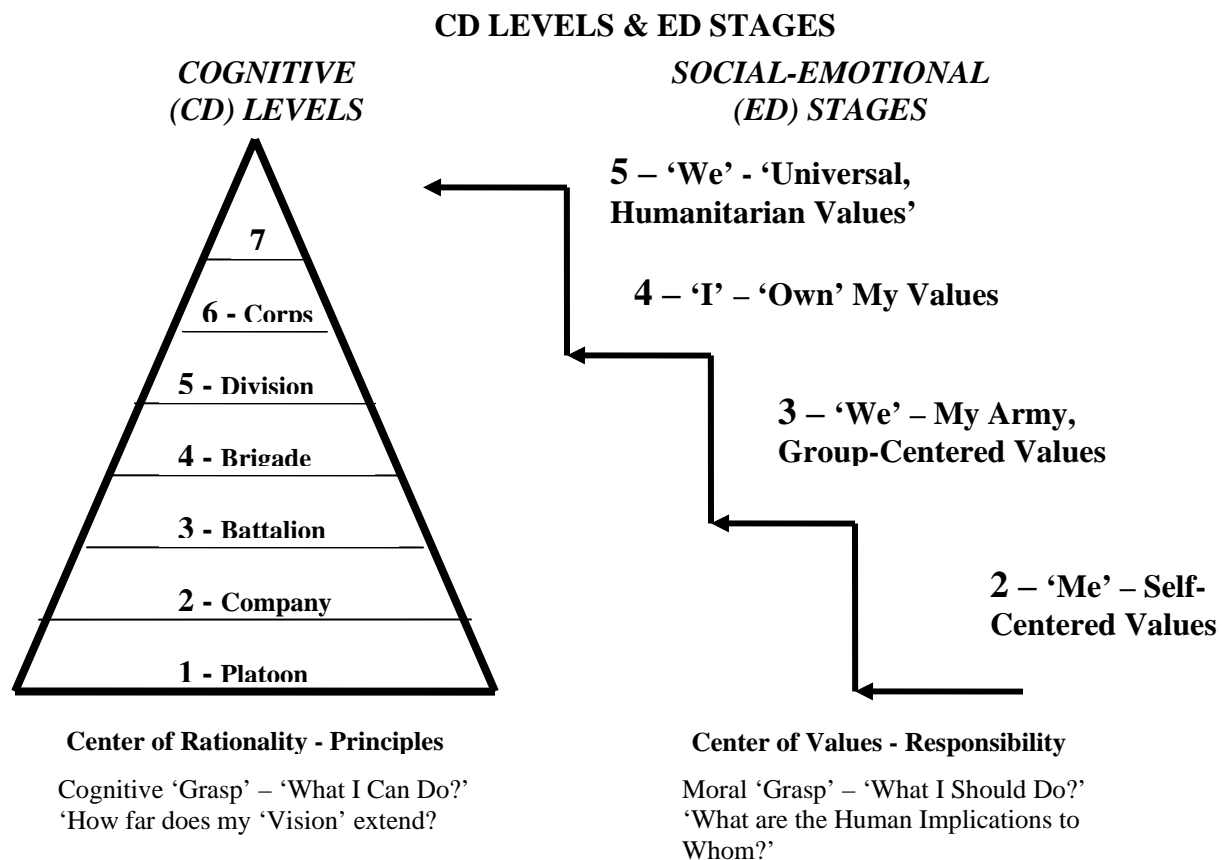
Figure 1 shows that CD, our Cognitive "Grasp," the breadth, depth, and scope of the "map" in our heads of how "I" or "we" – the person, himself or herself, teams, groups, organizations, nations, and the global community conduct business, varies widely among individuals. In large part, it determines "WHAT I CAN DO." In terms of how Army forces have been traditionally echeloned, leaders possess a broad grasp at each one. Span of control and discretion for decision making varies widely from very little at the platoon level to very large at Corps & echelons above, whatever these, if any, are defined to be, depending upon the scope of force engagements globally.

Future force structures must envision fewer echelons, more flexible, agile, maneuverable units. This suggests that leaders must be *more capable earlier than heretofore has ever been the case*. In short, we should expect, for example, company commanders to be as, if not more, CD capable relative to today's Battalion or even Brigade commanders. Therefore, we must find ways of **accelerating** development over and above what our training and educational system has traditionally been capable of achieving.

In relative terms, ED is more important than CD, although the two are significantly correlated (r=.46, df = 32, p < .01).[39] ED defines what has been called our "Center-of-Gravity,"[40]or the center of their emotions, actions, and decisions at some point in time. Whereas CD will determine the scale and scope of problems and operations an individual can effectively take on and the logic behind them, ED determines, in large part, the why – people's motivation – of what they do.[41] Put simply, it is all about "WHAT SHOULD I DO AND FOR WHOM?" Successively higher achievement on this dimension determines how *objective* the individual can be about their strengths and limitations, which also reflects how open they are to learning and discovery about themselves and others.

According to ED logic, people's self-identity, and feelings of self-worth, are defined by two distinct perceptions: their own, and what they believe others think of them, especially the views held by significant others. Our social identity springs from these two sources. As shown in Figure 1 (right-hand side), development on this dimension also results either in a focus on "self" (Stages or levels 2 & 4) or "others" (levels 3 & 5). Consequently, how much we are concerned about what others think of us varies systematically over the life span. ED progression directly relates to the need to have agency over (control) situations, others, and even the self.

Five distinct Stages of ED, roughly corresponding to CDs identify and describe qualitatively and quantitatively Seven Levels. Adult growth stages classified four of them (with intermediate points totaling 15 stages & sub-stages).[42] Most adults (about 55%) progress from an exploitative, self-centered 'teenage' Stage 2 into the broader "community" oriented Stage 3. Far fewer (about 25%) reach a self-authoring, "I own my values and principles of operation" Stage 4, and fewer still (< 10%) ever manage to achieve Stage 5, where the individual is able to construct true 'learning organizations' in themselves and the broader social context that can be self-sustaining.

The focus of one's concerns or their "Center-of-Gravity" systematically changes over time. The "We" at Stage 5 is very much different from what it was at Stage 3. In this case, instead of being "pulled" in the direction of prevailing Army norms, a person at Stage 5 will view them only as a point-of-departure. Nor will they view using the institution as an extension of themselves, to do their bidding as they *uniquely* see fit, as they would at Stage 4. At Stage 5, they can "de-center" from their own unique Stage 4 self and will work towards change that will have better overall universal outcomes for "their" group, institution, system, regardless of how well it might suite or benefit their unique way of doing business. Table 2 summarizes salient characteristics of each development Stage.

Table 2.
CHARACTERISTICS OF ED STAGES

STAGE:	2	3	4	5
VALUES:	'Law of Jungle'	Community/Team	Self-Determined	Humanity
Organizational Orientation:	Careerist	Good Citizen	Organizational Leader	System's Leader
Communication:	Unilateral Win-Lose	Exchange 1:1 – Win-Lose	Dialogue Consensus –Win & Lose	Collaboration Win & Win
Need to Control:	Very High	Moderate	Low	Very Low
View of Others:	'Objects' – Pawns to be Used for My Purposes	'Game' Competitors	'Contemporaries' Respectful of 'Their' Views	'Colleagues' Their Views Complement & Round-Out Mine
Self-Awareness:	Very Low-Low	Low-Moderate	Moderate-High	High-Very High

Without an intervention a person within a Stage has 20-20 hindsight, they can clearly "see" and de-center from what they were retrospectively – "Oh my God, could I really have been so naïve to think, feel, and act in that way?" Yet, they have great difficulty in totally grasping their present view – imbedding them in it. For example, in the "I"-ness of Stage 4, where the person has built a solid sense of who they are, they fail to understand that their views, regardless of how well thought through, are just one of many equally valid. When they begin sensing this, to begin accepting other equally valid points-of-view and *synthesizing* them into more comprehensive, robust ones, Stage 5 perspectives emerge and the relative sterility of their Stage 4 understandings becomes obvious. They have just discovered that a new vantage point exists for them to achieve, should they care to make the effort that will be required to achieve it.

Table 3 shows theoretical expectations for CD & ED achievement by traditional position level within private sector organizations and the Army. It also describes, in very basic behavioral terms, what we expect of incumbents by level and what past research suggests that they should be able to do.[43]

We should realize that CD and ED reflect themselves in the twin pillars we use to define organizations, aside from assigning mission(s). FM 3-0 stipulates, on the one hand, our "Operational Principles," the logic of what we do. Stated along side these are our "Values," defining the 'how' of what we do: *How the operational principles and values are realized in everyday, action defines Culture*. They are the sin qua non of what we are and there is usually a disparity between what we claim we are and what we actually are; that is, a significant delta between "what we say" and "what we actually do," a topic that will be addressed later. The extent of this delta is directly related to how difficult bringing significant cultural change about is likely to be.[44]

Table 3.
Summary of Combined CD & ED Developmental Milestones to Leadership & Organizational Structure

STAGES Of ED	LEVELS Of CD	LEVELS OF ORGANIZATION		GENERAL TASK REQUIEWMENTS
STAGE	STRATUM	LEVELS OF LEADERSHIP	POSITION/RANK	
5	**VII**	STRATEGIC – Mission, Culture, Strategy, Vision	******** Echelons Above Corps/Army Staff General/Global CEO-Board of Directors	Create and Integrate Multiple Commands/ Separate Business Units, Create Policy, Vision, & Establish Present & Future Directions & Missions. Brokers the Organization with outside influences: Press, Competitors, Suppliers, Partners, Congressional Constituencies, etc.
	VI		******/***** Corps/Separate Command Corporate Executive VP	Oversees Internal Operations of HQ, Subordinate Divisions, Strategic Business Units (SBU's); allocates resources, sets Policy into motion and Monitors Progress towards achieving Mission Objectives
4	**V**	ORGANIZATIONAL - Operational Policy, Mission, Objectives, SBU Climate	*****/**** Division Cmd SBU CEO	Direct Operations of complex Support and Direct Subordinate Units; Allocates assigned Resources; Implements Directives & Corporate Policy
	IV		****/*** Separate Bde/ADC Senior VP ━ ━ ━ ━ **0-6** Brigade Cmd Division Director/Junior	Direct Operations of Direct Subordinate Units; Taylor or Task Organize Resource Allocations to Interdependent Subordinate Programs and Sub-Units; Put Policy Directives into Operational Motion
3	**III**	DIRECT/PRODUCTION – Translate & Implement Policy Through Operational Procedures	**0-5** Battalion Cmd Department Director	Develops & Executes Plans & Task Organizes Sub-Units; Prioritizes Resources; Translates & Implements Policy at the Working Level within Assigned Mission Constraints
	II		**0-3** Company Cmd 2nd Line Supervisor	Directly Supervises Subordinate Units' Performance; Anticipates & Solves Problems in Real-Time; Constantly Shifts Resources with Situational Demands; Translates Policy
2	**I**		**02-01** Platoon/Squad Leader 1st Line Supervisor	Direct Performance of Work; Uses Practical Judgment to Solve Ongoing-Immediate Problems

Table 3 helps understand CD & ED achievement in relation to potential individual and organizational effectiveness. How they interact with one another defines yet a third crucial

element of leader growth: Knowledge Development (KD). Infer a robust KD from level of assessed CD & ED.

Knowledge Development (KD) represents the combined product of CD and ED and is the platform for our Frame-of-Reference - FOR, the outcome state that, in turn, drives behavior patterns. CD and ED are the *vertical* growth dimensions and the nature of their *nexus* is **critical** to leader development. Both are statistically related. These findings and others suggest develop CD and ED *in synchrony*, to maximize knowledge development, KD, generally. CD lays open to the individual a landscape of choices, while ED determines whether he or she makes the RIGHT CHOICES under prevailing circumstances. As a result, educational and training efforts that do not develop CD and ED in tandem are predictably suboptimal, especially for military officers. Without ED being as fully developed as CD, they would know "What" but not "Who" they are!

Another way of saying this is that what is not marked "in your gut" is lean on *meaning*. "Performance" has an experiential component, and competence per se does not–learning to ride a bicycle from a book without ever mounting one represents the CD component, while actually riding it provides KD's ED complement. Thus, CD and ED together provide a complete grasp of a person, object, situation, issue, etc. Focusing on CD alone, as many educational and training experiences do leaves out a critical part of the *meaning making* process (comes through using simulation assisted learning). So, while CD => KD = **competence** is necessary for acting 'knowledgeably,' it is not sufficient for acting 'responsibly,' or with a full understanding of the social – emotional consequences, on whatever scale, of the course of action one chooses to pursue. Synchronous CD & ED growth promotes holistic understandings, which must be a part of any well-defined Army leader development process.

Perceptual & Learning Processes:

The final piece of the puzzle that the Army must consider in developing future leaders is itself a rather complicated process. Substance is to substrate in emulsions as competencies are to capabilities in human development. How competencies combine with capabilities to produce development *across* time occurs through *Learning*, but that is, in turn, dependent upon our senses – what we see, hear, taste, touch, and smell. Some would rightly add a sixth that defies rational explanation or concrete definition – *Intuition* – What we know or feel without explicit knowledge of how.

Our senses provide the food for learning–the gatherers of raw information. "Rote" learning is the food not processed before it is stored. Learning Research has shown that humans can only deal with about seven raw pieces of information (number, letters, etc.) at one time.[45] Given this limitation, people develop conceptual strategies that store higher orders of information or datum in the form of "concepts," and process further into concepts of yet higher orders, pillaring one conceptual layer on top of the other. Rote learning occurs in concepts. Someone else has processed the raw inputs constituting them, or the receiver can process the information himself or herself into the higher order. Learning consists of both processes, but one is passive and the other active.

How to produce the next Generation

Understanding how to develop and nurture adaptability must be undertaken, in concert with extant Army plans for revamping the officer Education & Training process, for the institution itself to produce Future Leaders who will have the FOR necessary to change the Army's culture in ways I and others have suggested:

Adapt the model of development suggested in favor of alternative approaches that have not achieved the ends intended for at least two generations, if not more. Those teaching at the Adaptive Leader's Course need to focus on the essential elements of development, as defined here, and as suggested from the best available findings about human development and transformation available today.

Develop measures of both the Essential Elements themselves and their behavioral manifestations. Measures of ED and CD do exist, but develop as "user friendly" and usable on a Army wide-scale basis. Metrics cannot be the current leader evaluation card used by Cadet Command that is very complicated and forces leader observers to focus on the card and not the actions of the student leaders and their units. A tool for new metrics can be a simple card with just a printed "name," "mission," "time," and name of "evaluator." The rest is space to write observations. Given a number of these observations over time, through demanding situations enabling adaptability provide a measurable evaluation of adaptability. Complementary measures of P&L exist as well. Clearly, if we cannot measure the Essential Elements, they do not matter; hence, we must find ways of measuring these elements for two purposes:

- **Intensive confidential** individual assessment, feedback, and development planning at each school house entry or career gateway. The issue is to provide the foundation needed to guide development during the educational experience and in follow-on assignments.

- **Systemic feedback**. Each officer should be anonymously assessed at each gateway point to provide a feedback loop at the systems level, to determine if the programs and processes set in motion are having their intended effects. This will provide an interlocking chain of continuity to each Officer's development from the time of pre-commissioning onward. With such a continuity thread, it will be possible to monitor progression towards our objectives: Generically, the crucial question is developing the Army's talent at the right time and place needed in terms of the Essential Elements.

Establishing the blend of instructional technologies to use, particularly in the institutional setting, is critical to promoting synchronous growth in CD, ED, and, consequently, KD. Present instructional approaches lack opportunities for experiencing the EMOTIONAL TRAUMA OF FAILING WITHIN A SAFE, FACE SAVING ENVIRONMENT that is needed to promote ED. The technologies coequal focus must be on CD to teach critical and reflective thinking, or how to think. This should replace the now almost total emphasis on **what** to think (content) to permit building richer and deeper understandings of the self and alternative worldview, an understanding of which will enrich one's own.

The Army's highly technical environment demands that the emphasis from the outset be on *transformation*, on growing by learning-to-learn, not information alone. This annex has focused on the **what**, but there are going to be sequels to address the **how**, which is critical to the overall eventual success of these recommendations. In many senses, the **how** is a more difficult issue, but evidence exists that gives us strong clues about what its nature must be.[46]

Conclusion

The only way the Army can produce a future leaders with the wherewithal to define and develop a "Culture of Innovation" are from inside the individual out. It will only be possible by growing a cadre of people with a more advanced FOR than evidence suggests exists now. Thus, the transformation our recommendations envision will take place over a protracted period as the next generation is produced. If the Army starts in earnest now to focus on development as we have described it, rather than on its manifestations - behavioral "eaches" or "meta-eaches," The Army can reinvent itself in the ways current trends suggests it must: "*Adapt or Die:*" The Imperative for a Culture of Innovation in the United States Army."[47]

If the Army truly wants to raise itself to the next level, it must be prepared to grow a new, more advanced Leader at all levels, and marshal the "military continuity" – that sustained, dedicated, focused sense of purpose – that will be necessary to make it happen. As long as the Army culture mirrors more than less the culture at large, it will never produce the change it seeks. A culture supportive of the Profession of Arms, where mistakes are measured in lives, not dollars. The Army has the talent, if only the institution will take the initiative and engage the appropriate, extended effort that will be required to develop it.

Annex H

Testimonials from the Field

"This is the first and only course where it kept our attention, got everyone involved, and I learned a lot on how to be a cadre teaching adaptability."

> SFC Adams
> BOLC II cadre
> 20 March 2006

"I see and hear the changes in officer education, and this stuff is good. But when are you are going to change the NCOES to where this becomes the core of how to teach its courses?"

> SFC Ben Eley
> BOLC II Cadre
> 12 April 2006

"We are getting it, and the cadre are anxious about implementing it. We just have to find a way to educate the chain of command [above the regiment] and those who inspect us so the 'tail don't wag the dog while we are mastering it."

> Michael Mullins
> MAJ FA
> Commanding B/1/30FA (BOLC II)
> 12 April 2006

"I wrote in the AAR for the Instructor's Certification Course, that they should throw out everything and start over using only the stuff you taught us in "Deciding Under Pressure and Fast."

> Paul Wilcox
> MAJ AR
> Commanding D/1/11INF (BOLC
>   II)
> 2 May 2006

"I found myself pounding the table and saying 'yes!' over and over as I read the white paper ["Future leader: The Journey of Developing (and Nurturing) Adaptability: The Future is Now" & "How to Create Adaptive Leaders How to Teach-facilitate-mentor, Handbook For Instruction of Adaptive Leaders"]. Excellent work that should provoke some thought by the thoughtful. I would be very interested to see what the CAL [Center of Army Leadership] team says about it. "

> Colonel George E. Reed
> Director of Command and
>   Leadership Studies
> May 24, 2006

"Needless to say, nothing in Army Doctrine (and thus TRADOC training) really did anything to prepare me for what I would be doing. I was outside the wire that first time for about a month a half, and was completely on my own—had to figure everything out as I went. It could have been overwhelming (and very nearly was), but I credit your habit of teaching us to <u>think</u> and to <u>make decisions</u> without leaning constantly on 'The Doctrinal Thing To Do' with getting me through it…--what future leaders truly need to know is how to think, decide, and above all, <u>lead</u> on their own, in all types of environments. Though I wasn't always the tip-top cadet in ROTC, MAJ V, I credit you and your fellow instructors with giving me the tools to be successful out here [Afghanistan], running virtually an SF-type mission."

> 1LT Ian Dietz
> Georgetown University
> PLT Ldr 173rd AIB
> Dec 26, 2005 (Afghanistan)
> Number 2 in Infantry Officer
>   Basic Course

"I'm having a lot of trouble relating to what they are teaching here [IOBC Fort Benning]. They pretty much teach process and definitions. That's really it. They don't teach tactics or anything about how to out think the enemy in a competitive, uncertain environment. I am maxing everything at the course, but I contribute that to what you taught regarding how to think, and then communicate your plan. At least the instructors do notice in a positive way my ability to do this. I will keep you updated."

> 2LT Joe Bernard
> Georgetown University
> November 5, 2005 (Fort Benning,
> GA Infantry Officer Basic Course)
> Number 2 in course

"Sir, we were right on the money last year. The training, the classroom instruction, the demands on the cadets—particularly the decision making and decision making exercises—

went beyond requirements from Cadet Command. I can disassemble, and reassemble an OPORD with my eyes closed. The tactics, professionalism, how to brief, how to delegate, how to write were all second nature for my classmates and I when we commissioned in May. But what was really crucial were all of the small things—the current event briefs, the TDGs, the situational exercises—because they teach our cadets how to critically think through problems/situations, how to decide on a course of action, and how to execute that plan."

> **2LT Anthony Heisler**
> **George Washington Univ.**
> **February 2005, (Kuwait)**
> **Number 2 in FA OBC**

"…I probably would not be alive right today. The decision-making ideas, theorems, and leadership techniques that you planted in my brain are what made possible my platoon's tremendous success in Iraq and prevented indecision in the face of a real, deadly enemy. I could only affect the destiny of a few hundred American soldiers and a few thousand Iraqis; but the true beauty of your work is that I am but one of the many hundreds of men and women's lives you have changed…"

> **1LT Pat Fagan**
> **Georgetown University**
> **1st Infantry Division**
> **June 2005 (Germany)**
> **Number 1 in Armor OBC**

Annex I

Endnotes

[1] Colonel Rickey Smith and Mr. Donald E. Vandergriff, "The Journey of Developing (and Nurturing) Adaptability: The Future is Now," in the Future Leader Study, (Arlington, VA: Capabilities Integration Center, December 2005), p. 3-4.

[2] Brigadier General David A. Fastabend and Mr. Robert H. Simpson with an introduction by General Peter J. Schoomaker, Chief of Staff, Army, "Adapt or Die' The Imperative for a Culture of Innovation in the United States Army," (Army Magazine, Association of the United States Army, November 2003). Known here on as "Adapt or Die."

[3] Adapt or Die," p. 6.

[4] "Learning for Adaptation," title page

[5] Donald E. Vandergriff, Raising the Bar: Developing Adaptability to Deal with the Evolving Face of War, (Washington, D.C., Center of Defense Information, June 2006). I wrote Raising the Bar in May-June 2005, and the book provides the genesis for the ideas presented in the Future Leader Study (Dec 2005) and this paper.

[6] "Learning for Adaptation,", p. 3-4.

[7] Lieutenant Colonel Dan Dillon and Mr. Max Padilla, "BOLC Gap Analysis Update," unpublished brief for Lieutenant General van Antwerp, Commander Army Accessions Command, (Fort Monroe, VA: BOLC Task Force, September 19, 2005), p. 6-23 make recommendations from the ALC model, which LTG van Antwerp approved for implementation at the BOLC II course.

[8] Army doctrine (FM 22-100, Army Leadership, August 1999, 5-3 to 5-4) lists the two types of decision-making processes as Troop Leading Procedures followed at company and below level and the Military Decision-Making Process at battalion and above. Both are analytical. Paragraphs 5-16 and 5-25 go on to say that there is another decision-making method based upon using experience and intuition but that but that you "should not be fooled into relying on this because it may just hide a lack of competence or someone too lazy to do the homework needed for a reasoned, thought-out decision." In fact, the presence of competence in the profession of arms is what allows this decision-making to occur.

[9] John F. Schmitt, "Command and (Out of) Control: The Military Implications of Complexity Theory," (National Defense University, June 1999), p. 20-21.

[10] John Schmitt, "Complexity Theory," p. 22.

[11] Ibid., p. 5.

[12] Dillon and Padilla, "BOLC Gap Analysis Update."

[13] E-mail discussions with Mr. Bruce I. Gudmundsson December 16, 2004; "Put another way, it is no accident that Pestalozzi focused on "pre-school" - the education of very young children - and that many German officers referred to TDGs as "pre-school" ["Vorschule"] for tactics."

[14] http://www.cals.ncsu.edu/agexed/aee501/pestalozzi.html

[15] John Schmitt, "Complexity Theory," p. 22.

[16] Sergeant First Class Jeffrey Roper and Major Donald E. Vandergriff, How to Create Adaptive Leaders, How to Teach-Facilitate-Mentor Handbook: For Instruction of Adaptive Leaders, 1st Edition, (Washington, D.C.: Georgetown University Army ROTC, September 2003). It has been rewritten into a 3rd edition December 2005.

[17] Discussions with COL Robert Frusha, Commander Eastern ROTC Region, July 17, 2004. COL Frusha made many positive changes to the ROTC Leader's Training Course (LTC), which was once considered a gentleman's course or summer camp. LTC is held between the sophomore and junior years of ROTC, and also allows many programs to lateral transfer more cadets into their programs without the cadet having to progress through the Military Science I and II years.

[18] Donald E. Vandergriff, "Scenarios Enabling Adaptability (SEA), Number 1," in Future Leader, (Arlington, VA., Army Capabilities and Integration Center, December 2005).

[19] John Taylor Gatto "The Prussian Connection" The Underground History of American Education: An Intimate Investigation into The Problem of Modern Schooling (New York, New Society Publishers, 1991), p. 79.

[20] Major Donald E. Vandergriff, "Lessons Learned with Decision Making," unpublished AAR, (Georgetown University Army ROTC, October 2003), this came after overseeing the playing of over a 100 TDGs with cadets.

[21] Ibid, p. 44-45; Also see e-mail discussions with Mr. Bruce I. Gudmundsson December 16, 2004, on the use of Tactical Decision Games (TDGs). Bruce added, "it is not so much "training" and "pre-training." That is to say, they serve to develop habits that are conducive to the use of all sorts of other methods, to include more elaborate simulations and field exercises, to study tactics."

[22] Zaghloul Morsy (ed.) "Thinkers on Education," Volume 3, (Paris: UNESCO Publishing, 1994), p. 21-45.

[23] SFC Roper and I developed a process of certifying cadre after the 2001-2002 school year in anticipation of new cadre coming into the program.

[24] "Adaptability Handbook," p. 25-30.

[25] Also known as "Deliberate Practice" K. Ross and J.W. Lussier, "Adaptive Thinking Seminar," (Arlington, VA: Army Research Institute, 2000).

[26] J.A. LePine, and J.A. Colquitt and A Erez, "Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience, *Personnel Psychology*, (2000), p. 563-593.

[27] Gary Klein, "The Recognition-primed decision (RPD) model: Looking back, looking forward,"

[28] Gary Klein, *The Power of Intuition: How to Use Your Gut Feelings to Make Better Decisions*, (Currency, 2003).

[29] While at Georgetown Army ROTC, I found computer based wargames were another good tool at building adaptability, but the student had to be brought to reality. It is easy to play the game in the comfort of one's dorm room, in the dead of winter, or heat of summer with no other restrictions or stress other than deciding when to stop playing the game at the cost of other tasks. One way to determine evolutionary adaptability is having several students play the same virtual game scenario with time restrictions, and then view how far or if any of the students solved the scenario, and how many times did it take the students to play the same scenario to solve it. Most wargames alter the play of the artificial intelligence every time the same scenario is played.

[30] Our cadre downloaded Marine Corps Gazette archived TDGs and converted Marine to Army language and modified them further to teach the adaptability principle of that period.

[31] "Adapt or Die", p. 9.

[32] Walter Ulmer, "Notes on Leadership for the 1980s," *Military Review*, reprint from July 1980, January-February 1997, p. 77.

[33] Walter Ulmer, "Creating and Assessing Productive Organizational Climates," Army War College Course Handout, Carlisle, PA: U.S. Army War College, 2002, p. 1.

[34] The TDG was the favorite among cadets surveyed who had been exposed to such tools. Returning alumni from both Iraq and Afghanistan stated that TDGs was one of the best ways to prepare their decision making ability for the situations they faced.

[35] Major Donald E. Vandergriff, "Lessons Learned with Decision Making," unpublished AAR, (Georgetown University Army ROTC, October 2003), this came after overseeing the playing of over a 100 TDGs with cadets.

[36] Jon Moilanen, "Leader Competency and Army Readiness," *Military Review*, Vol. 82, July-August 2002, p. 62.

[37] *Ibid.*, p. 78.

[38] The Marine Corps Gazette TDG website is at http://www.mca-marines.org/Gazette/tdg.htm, it also archives years of past TDGs with solutions.

[39] lafdtraining.org/tdg/ Also see, http://www.usachcs.army.mil/TACarchive/ACwinspr03/Edwards.htm

[40] Conversations with Major Philip Peck, March through June 2005. He has eight scenarios available.

[41] William H. Kilpatrick, "introduction to Heinrich Pestalozzi" The Education of Man - Aphorisms, (New York: Philosophical Library, 1951)

[42] Major Frank Brewster, "Using Tactical Decision Exercises to Study Tactics," Military Review, (November-December 2002), p. 3

[43] I would like to think Dr. Steven Stewart who assisted me in writing this one for the Army. Dr. Stewart assisted in the founding of the Army's School of Advanced Military Studies, and taught a cognitive development course at the War College.

[44] Jacobs, T. O., & Jaques, E. (1987). Leadership in complex systems. In J. Zeidner (Ed.)., *Human productivity enhancements: Vol. 2. Organizations, personnel, and decision making* (pp. 7-65). New York: Praeger.

[45] Wong, L., Gerras, S., Kidd, W., Pricone, R., & Swengros, R. (2003). *Strategic Leadership Competencies*, Carlisle Barracks, PA: Strategic Studies Institute.

[46] Stewart, S. R. (1992). *Leader Development Training Needs Assessment of U.S. Army Battalion Commanders*. U.S. ARI Technical Report 969.

[47] Stewart, S. R. (1987). *Leader Development Training Assessment of U.S. Army TRADOC Brigade Commanders.* U.S. ARI Research Report 1454.

[48] Stewart, S. R. (1988). *Correlates of Problem Solving and an Evaluation of Training to Increase Problem Solving Effectiveness.* Ann Arbor, MI: Bell & Howell (order no. 9022825).

[49] Lasky, O. (2001). Linking Two Lines of Adult Development: The Developmental Structure/Process Tool. *Bulletin of the Society for Research in Adult Development (SRAD),* 10.1, 8-11

[50] Demick, J. & Andreoletti, C. (Eds., 2003). *Handbook of Adult Development.* New York: Kluger Academic/Plenum Publishers.

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[52] Jaques, E. (1989). *Requisite Organization.* Arlington, VA: Cason Hall.

[53] Lewis, P. (1995). *An Exploration of Leader Conceptual Capacity.* Paper presented at the 103rd Annual Meeting of the American Psychological Association, New York, NY, August 11, 1995.

[54] Graves, (1981). *Summary Statement: The Emergent, Cyclical, Double-Helix Model of Adult Human Biopsychosocial Systems,"* Boston, May 20. [quoted in Wilber, K., Integral Psychology, Boston: Shambhala, 2000.

[55] Lewis, P. & Jacobs, T. O. (1992). *Individual Differences in Strategic Leadership Capacity: A Constructive/Developmental View.* In R. L. Phillips, and J. G. Hunt (Eds.), *Strategic Leadership: A Multiorganizational-Level Perspective* (pp. 121-137). Westport, CT: Quorum Books.

[56] Kegan, R. (1984). Ibid.

[57] Jacobs, T. O. & Jaques, E. Ibid.

[58] Department of the Army (2001). *Field Manual 3-0, Operations.* (pp. 1-7). Washington, D.C. U.S. Government Printing.

[59] Simon, H. A. (1969). *The Sciences of the Artificial.* Cambridge, MA: MIT Press.

[60] Stewart, S. R. (1989). *Correlates of Problem Solving and an Evaluation of Training to Increase Problem Solving Effectiveness.* Unpublished Doctoral Dissertation. Carbondale: Southern Illinois University.

[61] Fastabend, D. A., & Dimpson, R. H. (2003). Ibid.