Applying Current Wars' Lessons to Training and Education

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ABSTRACT

"In general, it takes months of on-the-job training in-country to bring new arrivals up to an acceptable, functional level. We need to identify gaps and opportunities and institutionalize, not personalize, processes and best practices."(Supporting Statement provided by BG Rounds, J-7, Joint Staff participating in a VTC with GEN Petraeus and LTG McChrystal) The enemy is able to quickly change methods and procedures to meet Coalition operations. How do our "lessons learned" apparatus rapidly capture those changes, develop and implement counters? The problem set, however, is much greater than updating tactics, techniques and procedures to meet the immediate threat. Although the fundamental nature of war has not changed, changes in the political landscape, adaptations by the enemy, and advances in technology are changing the character of war. This demands adaptive training and education processes, organizations and systems. The question then becomes, "How do training centers and joint Professional Military Education institutions adapt to a changing environment and exploit and assimilate lessons learned?"

Institute for Defense Analyses (IDA) is concluding a 2-year project to review service and joint lessons learned programs as well as organizational, service, and joint initiatives to meet a rapidly changing environment. To understand and address those challenges, the IDA team interviewed returning service members, visited combat and home station training centers, collaborated with deploying and returning commanders, assisted lessons learned collection teams, and visited primary through senior service schools to holistically consider the entire training and education continuum. As the environment demands a more creative, flexible and adaptive leader, the cognitive boundaries of "what to think" versus "how to think," is being pushed ever lower in the rank structure; consequently, training and education needs to adapt to remain relevant. This paper investigates the changing character of war and its implications for training and education.

ABOUT THE AUTHORS

Dr. William (Bill) Knarr retired from the US Army in 2002 as a Colonel with over 34 years in service. His areas of expertise were intelligence, special operations and aviation. He spent his last active duty tour, from 1997 to 2002, as the Training and Doctrine Systems Manager for Unmanned Aerial Systems, Guardrail and Aerial Common Sensor. Previous to that assignment, he was Commander, Joint Intelligence Center, U.S. Special Operations Command. He currently works for the Joint Advanced Warfighting Division (JAWD) of the Institute for Defense Analyses (IDA). Bill holds a Doctorate in Education, Masters of Science Degrees in Systems Management and National Security Strategy, and a Bachelor of Science Degree in Mathematics.

Major General Thomas Jones, USMC, Retired, entered the Marine Corps through the Officer Candidate Program following his graduation from Eastern Illinois University. An infantry officer, he served in each of the three active Marine Divisions and commanded at all ranks from 2/Lt to Major General. MGen Jones commanded an Infantry Battalion during Desert Shield and Desert Storm and commanded an Infantry Regiment, leading all Marines in Operations Uphold Democracy in Haiti. MGen Jones served as a Tactics Instructor and later as Director of the Amphibious Warfare School in Quantico, Virginia. He twice served on Recruiting Duty and held senior staff positions at Headquarters Marine Corps and the Pentagon. He attended numerous service schools and acquired his Masters Degree in International Relations from Salva Regina College. His final assignment in the Marine Corps was that of Commanding General of Training and Education Command in Quantico, Virginia. MGen Jones founded Outdoor Odyssey, a non-profit Leadership Academy, in 1998, oriented on impacting youth through team building and mentoring. He presently serves as an Adjunct Research Staff Member at the Institute for Defense Analyses (IDA), in addition to his voluntary role as President/Executive Director of Outdoor Odyssey.

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INTRODUCTION

In general, it takes months of on-the-job training in-country to bring new arrivals up to an acceptable, functional level. We need to identify gaps and opportunities and institutionalize, not personalize processes and best practices. One example is ISR [Intelligence, Surveillance, and Reconnaissance] training and Intelligence/Operations integration. [Intelligence/Operations] need to be more people-oriented, culturally aware, and responsive.[1]

When an enemy can quickly change methods and procedures to meet Coalition operations, how can the Coalition's "lessons-learned" apparatus rapidly capture those changes, and then develop and implement counters? The challenge is greater than updating tactics, techniques, and procedures to meet an immediate threat. Although the fundamental nature of war has not changed, changes in the political landscape, adaptations by the enemy, and advances in technology are changing the character of war (Joint Operating Environment, 2008). This demands adaptive training and education processes, organizations, and systems. The question, generally, becomes, "How do we apply current wars' lessons to training *and* education?" or more specifically, "How do training centers and Joint Professional Military Education (JPME) institutions adapt to a changing environment and exploit and assimilate lessons learned?"

The Institute for Defense Analyses (IDA) is concluding a two-year project to review joint and Service lessons learned programs as well as initiatives to meet a rapidly changing environment. To understand and address those challenges, the IDA team interviewed returning Service members, visited combat and home station training centers, collaborated with deploying and returning commanders, helped lessons learned collection teams, and visited primary-through-senior service schools to consider the training and education continuum. As the environment demands a more creative, flexible, and adaptive leader, the cognitive boundaries of "what to think" to "how to think," are being pushed ever lower in the rank structure; consequently, training and education need to adapt to remain relevant. This paper investigates the changing character of war and its implications for training and education.

The project objective is to provide training and education solutions that will better enable joint forces to quickly adapt to new missions and challenges. It's built on the theme that acquiring, refining, and sharing information and assimilating lessons from operations and training need to be fundamental to joint actions (Joint Training Functional Concept, 2007).

Approach

The project team approached the questions posed above in three overlapping and iterative phases:

1. Review, in general, the joint and service lessons learned programs for obvious gaps and opportunities;
2. Apply the case study method; using intelligence/operations integration as a vehicle, determine best practices and issues within intelligence/operations; trace best practices/issues through the lessons-learned process to determine specific gaps and opportunities;
3. Visit the combat training centers (CTCs), home station training forums and JPME institutions; identify how they 1) adapt to meet changing environments, and 2) assimilate and exploit lessons.

Lesson Learned Programs and Processes

When bad process meets good people, bad process wins 9 out of 10 times. (All Hands Meeting, JFCOM, 2008)

Since 9/11, there has been a rapid growth in lessons learned organizations and activities, in terms of resources, effort, and command emphasis. As an example, the Army's Center for Army Lessons Learned (CALL) has grown from 53 to 202 people, with an anticipated 50 more coming to fill out their Lessons

[1] Brigadier General Michael Rounds, J-7, Joint Staff, supporting statement given during a Joint Staff video teleconference with GEN Petraeus and LTG Stanley McChrystal, 2007.

Learned Integration (L2I) net. The L2I net supports the various training centers and schools with additional representatives located at Joint, Interagency, and Multinational organizations. Another such program is the Marine Corps Lessons Learned Program (MCLLP), which, although operational in 2004, was formally established in July 2006. By 2008, the MCLLP had representatives at the major commands, in theater, and at the Marine Corps Air Ground Combat Center (MCAGCC) at 29 Palms, the Marine Corps' CTC. The Marine Corps Center for Lessons Learned (MCCLL) was recognized as a leader in the area of government information systems because of its leading-edge development and application of information systems to support the program.

The Joint Lessons Learned Program (JLLP) was initially established in 2000 under the proponency of the J7, Joint Staff, to replace the Joint After Action Reporting System (JAARS). In 2006, they capitalized on the Marine Corps' efforts in developing its lessons learned information system and enlisted their expertise to field the Joint Lesson Learned Information System (JLLIS), a leading edge, collaborative information system to link all community lesson learned information systems. Additionally, J-7 representatives are located at the various Combatant Commands (COCOMs) and Services to provide direct support to those organizations and general support to the JLLP as a whole. JLLIS shows great potential in tracking issues and supporting the implementation of a robust system to support JLLP objectives.

In general, the lessons learned process consists of four functional areas: Collection, Analysis, Dissemination, and Implementation (Figure 1), with various feedback and reconciliation mechanisms.

The lessons learned process is tied to the operational and training mission and incorporated feedback mechanisms to update and reconcile lessons. A number of observations were noted during the program/process review phase for further investigation during follow-on phases:

- Integrating the Lessons Learned community into the JLLIS encountered some challenges. As an example, due to the sheer magnitude of the Army's database and because of access and distribution policies, the Army is not integrated into JLLIS, but is working towards some accommodation to increase JLLIS access.
- Gaps and opportunities existed at the collection and implementation phases, the seams of the process.
  - At the front end, the collection seemed almost exclusively dependent on active gathering, with little input from passive methods,
  - Implementation, at the back end or closure of best practices/issues, is difficult to track because the responsibility of reconciling best practices/issues lies outside the lessons learned organization.

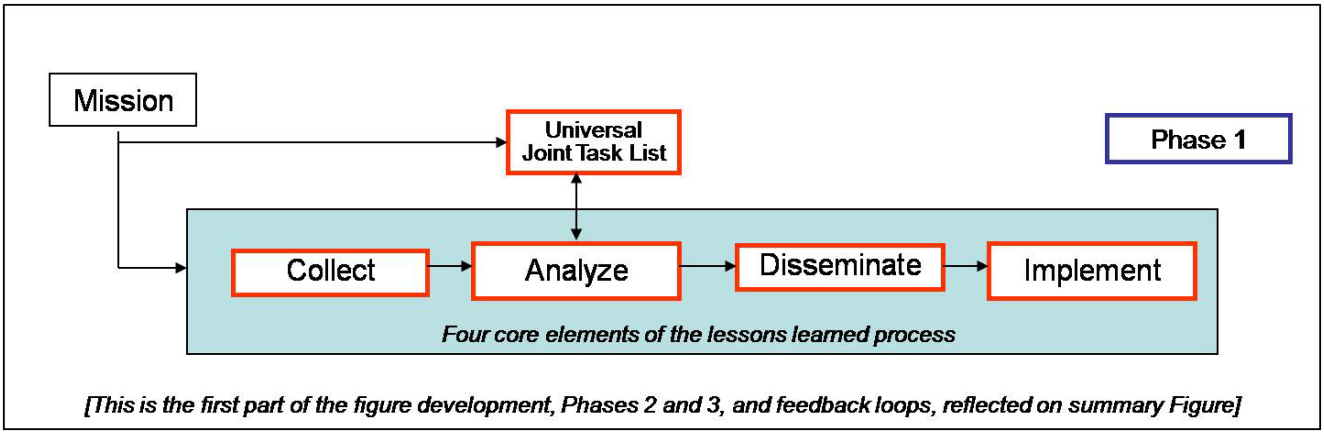

Figure 1. Lesson Learned Process – Phase 1 Review

The case study, the next phase of the project, helped the team look at the process and those areas noted above, in depth.

Case Study

Intelligence/Operations integration, highlighted at the introductory quote as a robust area for lessons learned investigation, is the subject of the case study. Our approach to the case study was doctrine-based, from FM 3-24, that is, it:

- Was developed with a focus on the population,
- Recognized the localized nature of insurgencies, and
- Was based on the premise that all Soldiers and Marines are potential collectors.

As such, the study team started at the bottom—Every Soldier a Sensor (ES2) and Every Marine A Collector

(EMAC)—and worked up from company to battalion to Brigade to the Multi National Corps–Iraq (MNC-I).

Corps. Additionally, the project team looked at the Stryker community; in the Stryker community there

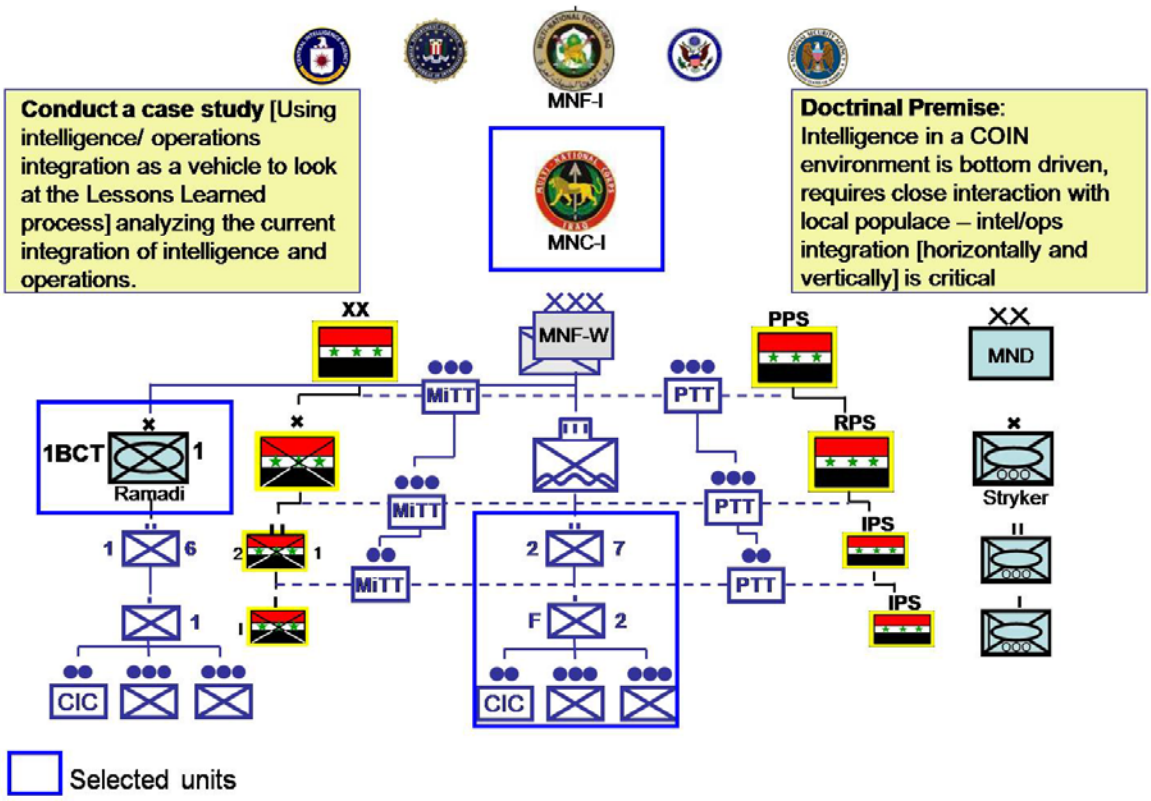

Figure 2. Case Study – Selected Units/Community for Study

Best practices and issues within the realm of intelligence/operations integration were selected and tracked based on several criteria: 1) recommendations from training centers, 2) the frequency with which the best practices/issues appeared in the database, and 3) the ability to draw that thread both horizontally, to peer units and across seams, and vertically up and down the structure (Figure 2).

Selection of units at the various echelons was based on two criteria: 1) recommendations by those within the training and lessons learned communities, and 2) demonstrated best practices. It may seem obvious, but those two criteria worked hand-in-hand, i.e., best practices, as noted in the various databases, were frequently linked to those same units that were recommended for the project.

Units selected were the 2nd Battalion, 7th Marines (2/7 Marines) and its Foxtrot Company (depicted at Figure 2 in the bottom, center blue square); 1st Brigade Combat Team (BCT), 1st Armored Division (Ready First Combat Team) (Figure 2, left blue square); and the MNC-I (Figure 2, top, center blue square) commanded by then-LTG Odierno and primarily staffed by III

was not just one unit that stood out—it was the community and how members of the community supported each other.

The sample of best practices/issues reflected in Table 1 is a result of the IDA project team's Analysis phase of the lessons learned process. During this phase the best practices/issues were identified and candidate solutions proposed from a doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) perspective. Additionally, those best practices/issues are linked to the training community via the Universal Joint Task List (UJTL). The following provides the narrative/storyline that links those best practices/issues together starting at the bottom with the population.

This war in Iraq was, and is, about the people. As such, front line contact with the population is extremely important in collecting intelligence, understanding the people's needs and working with them. Understanding that the focus is on the population perpetuated a paradigm shift in how we think of intelligence—an education issue that will be addressed later. It started with EMAC and ES2 and progressed to the squad and

platoon. At squad and platoon level, there should be no such thing as "presence" patrols—at a minimum they should be collection operations—answering the commander's Priority Intelligence Requirements (PIR). But that generates such a volume of information, both input and output, that the company needs some way to organize the information to support operations and further collection. Hence, the development of the Company Level Intelligence Cells (CLIC) in the Marine Corps and the Company Intelligence Support Teams (CoIST) in the Army.

force and assessing training and education effectiveness.

Systems compatibility issues became critical as organizations attempted to pass information vertically or laterally to other organizations, or even leave data behind to their successor organization. Nothing highlights this issue better than the databases fed by the Biometric Automated Toolset (BAT). BAT supports population control. Population control is basically "determining who lives in an area and what they do" (FM 3-24). Population control measures are critical

Table 1. Best Practices/Issues – Phase 2, Extract

Implications Lessons	D	O	T	M	L	P	F	Universal Joint Task List (UJTL)
Company Level Intelligence Cells: Company – MNC-I	X	X	X	X	X	X		Operational (OP) 2.1.4 - Allocate Intel Resources in the Joint AO
Targeting Cycle – Non-Kinetic and Kinetic Company – MNC-I	X		X		X			OP 2.5 Disseminate & Integrate Operational Intelligence
1st time Bde Cdr experiences support by all ISR assets is in Theater: MNC-I	X		X	X	X			SN 7.4 Ed & Train the Force; ST 7.2.4 Assess T&E Effectiveness
Systems compatibility: Access and feed BATs databases: 1st BCT/1st Armored Div			X	X	X			OP 1.5.5 Assist HN in Pop & Resource Control

The company participated in the targeting meetings at battalion. The targeting cycle was used at the battalion to structure the human targeting routinely required in counter-insurgency (COIN) operations. But the targeting cycle was no longer just about kinetic actions, it included money, reconciliation, negotiation, and the purposeful inclusion or exclusion of local leaders in activities to increase or decrease their influence within the community. Note that Targeting is the second lesson, also a best practice, listed in Table 1 and has potential implications in doctrine, training, and leadership. Linked to Operational Task 2.5, it is noted as a method for disseminating and integrating operational intelligence.

MNC-I's realization that ISR assets needed to be decentralized and pushed down to the lower echelons in this type of war, introduced new capabilities to the brigade combat teams. Capabilities include cryptologic support teams, signal terminal guidance teams and exploitation teams, increased full motion video assets, and more human intelligence (HUMINT) support—to be pushed further down the chain. However, this quickly became a training issue with the realization that the first time BCT Commanders experience the support by all these assets is when they assume battle space in Iraq (III Corps AAR, 2008). Note that the third lesson listed in Table 1, an issue, addresses ISR assets at the Brigade level, has potential implications for doctrine, training, materiel and leadership, and can be associated with Strategic National and Theater tasks of training the elements of protecting the population. The power of compatible databases is reflected in the story of a man stopped at a checkpoint in Tikrit who claimed to be a dirt farmer but had 11 felony charges in the United States, including assault with a deadly weapon. This reflects tactical events with strategic implications when you consider the Global War on Terrorism and the ability to track people across international borders.[2]

In Table 1, note that whenever there is a lesson, there is a Training implication. When viewing the table as a whole, there is also a Leadership and Education implication. In conventional operations, one looks for intelligence from the unit intelligence officer and higher headquarters. In the COIN fight, the key is information gathering at the "pointy-end" of the spear, with intelligence-building at the company and battalion levels. Hence, the decentralization and shift in ISR assets from higher to lower. Additionally, COIN operations are more people or population focused, hence the cultural aspects and interagency requirements to address other-than-security lines of operations become much more important in COIN than they would be in a conventional fight. The general aspects of this were obvious, but the specific aspects didn't become

[2] Ellen Nakashima, "Post 9/11 Dragnet Turns Up Surprises: Biometrics Link Foreign Detainees to Arrest in US," *Washington Post*, , 6 July 2008, A01.

apparent until we looked at the training and education continuum.

The case study reinforced previous observations:

- That "*Implementation*" or closure of best practices/issues is difficult to track or reconcile as different organizations become responsible (or worse yet, no one organization accepts responsibility) within the DOTMLPF arena.
- That *inaccessible* databases (the Army's CALL is not integrated into *JLLI*S) requires users to request permission to search each database. Having said that, there were a number of Army lessons learned documents that could be accessed through the MCCLL (a JLLIS compatible) site.
- Although *collection* still seemed dependent on active gathering, there were a number of unit and individual submissions for the CLIC, BAT, and census operations on the MCCLL site.

Additional observations included

- The UJTLs lack the granularity needed to support training, especially in a COIN environment. Specifically, they lacked standards.
- The Coalition's connection to the people, development of the CLIC/CoIST, dynamic nature of intelligence and operations, population control and census operations, and decentralization of ISR assets were the best practices/Issues most frequently noted in the lessons learned repositories for intelligence/operations integration (as reflected in Table 1).

Training and Education Continuum—Applying lessons at the Training Centers and JPME Institutions

The next phase of the project looked at how well lessons were applied at the training centers and JPME institutions.

Combat Training Centers

The project team visited MCAGCC at 29 Palms, California and the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana. Service lesson learned representatives were assigned to both locations. The question the team wanted to answer was, "How do training centers adapt to a changing environment and exploit and assimilate lessons?"

CTCs have changed drastically since 9/11. Iraqi villages, with role-players to portray Iraqi forces, villagers, and insurgents, and kinetic and non-kinetic events with realistic visual and audio effects permeate the environment—all to tax the service members and their units through a wide array of dynamic scenarios.

At 29 Palms, the MCCLL team, collocated with the Tactical Training and Exercise Control Group (TTECG), participated in weekly [video/teleconferencing] lesson updates from the theater and passed those on to the TTECG staff for inclusion into the curriculum. The focus was on supporting the mission rehearsal exercise (MRX) for the next arriving unit. Although the Army lessons learned team at JRTC also maintained contact with lessons learned teams within and outside the U.S., Lessons Learned cadre explained it was not their charter to introduce theater lessons into the mission rehearsal exercises (MRE). They were focused on determining lessons from the training exercises and feeding those lessons into the lessons learned system. Having said that, the CTCs take the lead in pursuing the most current lessons and tactics, techniques and procedures (TTPs). As an example, JRTC is in continuous crosstalk with the other CTCs as well as in-theater teams and deploys observer/controllers (O/Cs) with deploying units to collect best practices and successful TTPs in order to inject the current "reality" into the training environment.

During the project team's visits to 29 Palms in November–December 2007; the Marine Corps Warfighting Lab (MCWL) was conducting the CLIC Extended User Evaluation. The CLIC was noted in a MCWL X-File as early as 2004. However, use of the CLIC did not gain momentum until 1) 2/7 Marines published a Letter of Instruction on their development and use of the CLIC in 2006, 2) MCCLL noted 2/7's use of the CLIC in October 2006 and May 2007 Quick Look reports, and 3) the CLIC was identified as a potential best practice at a 24 June 2007 1st Marine Expeditionary Force (I-MEF) conference. After the MEF conference, MCWL was tasked to conduct an extended user evaluation to develop a "Best Practices Model." With 3rd Marine Battalion, 4th Marines (3/4 Marines) selected as the test unit, MCWL worked with the Marine Corps Intelligence School, as well as with representatives from Intelligence Integration Division at Marine Corps Combat Development Command, Training and Education Command, and the Program Manager, Intelligence Systems at Marine Corps Systems Command, to develop a program and assess 3/4's performance during Mojave Viper 27-31 January 2008 (MCWFL Report, 14 April 2008). The realization was that the CLIC as a best practice was being driven by commanders (company through MEF) who understood its importance; the lessons learned process was a repository to document and disseminate unit experiences. The MCCLL served a crucial function, but the catalyst for change was the commanders.

Visits to 29 Palms also highlighted developing capabilities that would prove important to linking Army

and Marine units together via Live, Virtual and Constructive (LVC) training venues. One example was the standup of the Marine Corps Tactics and Operations Group (MCTOG). The MCTOG's mission is to provide, via virtual and constructive simulation, "advanced training in MAGTF Operations, Combined Arms Training and Unit Readiness Planning at the Battalion and Regiment levels, and to synchronize doctrine and training standards in order to enhance combat preparation and performance of Ground Combat Elements units in MAGTF operations" (MCTOG February 2008 briefing). This had the potential to showcase integration at the brigade and regimental level between Army and Marine Corps units (to be discussed later).

In March 2008, the JRTC staff walked the IDA team through the schedule for a visiting unit. JRTC, in most cases, is the first opportunity the BCT has to train as an entire BCT; it is a significant challenge for BCTs to train themselves with no available sister units at home station because all sister units are deployed. The exercising unit's initial meeting with the JRTC staff was scheduled 6 months prior to the unit MRE at the Leadership Training Program (LTP) Conference. The LTP is intended to identify the commander's training objectives and start the "orders" process, that is, the development of the Operations Order by the exercising unit. The LTP toolkit, provided to each unit, includes best practices and lessons to be integrated into the upcoming training.

However, compressed Army Force Generation (ARFORGEN) timelines[3] resulted in units overwhelmed with predeployment requirements and without the requisite time and resources at home-station to prepare for a graduate level FTX at a major CTC. In many cases, due to a lack of personnel until very late in the reset/train and ready phases, the unit did not have adequate command and staff personnel until about 45 days prior to the MRE.

During the MRE train-up, the LTP team emphasized utilizing the targeting process (noted as a best practice) as a forcing function for integrating operations and intelligence at the battalion and company levels. They also emphasized the use of some form of CoIST, normally taken out-of-hide and composed of infantry and artillery skills sets and containing no military intelligence trained analysts.

Personnel turbulence, as addressed above, seemed to be the root cause for a number of other deficiencies. Many units are having problems with basics skills. Patrol and Engagement debriefs are not happening well. PIR and Specific Information Requirements (SIR) and information Requirements (IR) are not coordinated. Additionally, targeting coordination between the battalion and brigade is not synchronized.

Discussions with the JRTC staff then turned to the current brigade MRE. This BCT was ahead of the power curve—they had more time together as a unit than most BCTs and had undergone a previous NTC rotation in addition to this JRTC rotation. Despite the additional time to train, several comments provided insight into the unit's train-up for the COIN fight, that could be generalized across the force:

- Staff Structure: Units have not garnered the true benefit of robust unit staff structures and assets. The BCTs need to adjust from their Modified Table of Organization and Equipment structure to empower a bottom-up feed. Commanders are still trying to force centralization on a decentralized fight.
- Intelligence Support: A senior JRTC commander, discussing the status of intelligence and operations vertical integration, stated, "I have yet to find a Battalion-sized unit and below to indicate that they received intelligence from a higher headquarters that was instrumental in the execution of a mission."
- Iraqi Security Forces: Limited available assets make it difficult to replicate Iraqi Security Force interaction and situational awareness.
- Military Transition Teams (MiTT) Challenges: 50–60% of MiTTs come through Fort Riley while the balance comes out of unit hide. The advisory chain has no formal command relationship with the associated BCT. A formal relationship, such as attachment, would tighten the relationship between the MiTT and BCT working in the same area.

The above issues weren't unique to Army units. The Marine Corps suffered from the same force generation issues of inadequate time and resources at home station to conduct predeployment training. On the one hand, it seems that the Marines do take more interest in implementing the CLIC and associated processes and train-ups than the Army. On the other hand, the Marines train, and deploy at the battalion and below level while the Army trains and deploys at the BCT and below level.

[3] The ARFORGEN process for active duty Army units is generally a three-year process with 3 phases: 1 year for "reset/train;" 1 year for "Ready" which normally concludes with an MRE and 1 year "deployment" in theater. Those timelines were severely compressed with units spending 12–15 months in combat, and returning for only 12 months rather than the planned 24 months.

I-MEF Infantry Immersion Trainer

The I-MEF built the Infantry Immersion Trainer (IIT) in 2007/2008 to provide an adaptive, full immersion trainer at the squad and fire team level. The purpose is to ensure that Marines' first firefight is no worse than their last simulation. They do this by inoculating Marines with sights, sounds, smells, and chaos of close urban battle in a simulated environment. That simulated urban environment is housed within a 30,000-square-foot warehouse-type building, which was designed by combat experienced Marines and built by Strategic Operations, the same company that provides the realistic but simulated munitions for other force-on-force scenarios. The environment includes interactive avatars and holograms; sensory stimuli; the Joint Fires and Effects Trainer for supporting arms call-for-fire training; Deployable Virtual Training Environment; Combined Arms Network, and a Tactical Video Capture System (I-MEF briefing, 2008)

Battle Command Training Center—Fort Lewis, Washington

The Army has developed and resourced Battle Command Training Centers (BCTCs) at various installations to support home station unit training. The Fort Lewis BCTC was selected for the study because of its leading edge training support to the Stryker Community. Recall an earlier comment that there was not just one Stryker unit that stood out—it was the community and the interaction among the various units. The Stryker Warfighting Forum is integral to bringing the Stryker community together and the BCTC is integral to the Stryker Warfighting Forum. The BCTC mission is to "integrate the LVC training into seamless training which meets the Army's needs to increase, in shorter cycles, the experience base, confidence, and professional maturity of leaders and units". They train individual Soldiers through/to the Corps staff. They treat command as a team sport and through programs such as Plato's Diner, a leader team training program, they repetitively immerse leader teams in virtual constructs derived from contemporary Operation IRAQI FREEDOM (OIF) operational vignettes to build experience and confidence (Ft Lewis BCTC Briefing/Meeting, 2007).

The Fort Lewis BCTC also implements the virtual "right-seat ride" program to allow commanders and their battle-staffs to interact with forward deployed commands in near-real time, and, on occasion, even in real-time. The implications are exciting as the inbound unit constructs go-to-war data files, executes on-demand crisis action drills, develops its own plans and operations orders, and builds continuity on in-theater missions so it is prepared to execute when it hits the ground in-country. It was apparent that the BCTC had much to offer to the Army and the Joint community (Ft Lewis BCTC Briefing/Meeting, 2007).

During our travels to the various training sites we saw a number of best practices—resources, systems, and processes. Examples included the IIT at Pendleton; the MCTOG, ranges and facilities at 29 Palms; and the smorgasbord of capabilities offered by Fort Lewis. However, a major finding from our FY08 work was that they were isolated by service and location—they were disparate and disconnected. The project team's recommendation was to link these capabilities, resources and best practices together through distributed operations to support commanders' training objectives.

At Fort Lewis, the project team had an opportunity to meet with and observe the 1st of the 23rd Infantry Battalion (1-23 IN), of the 3rd Stryker Brigade Combat Team, 2nd Infantry Division (3/2 SBCT) as it planned and prepared for deployment to Iraq in 2009. Prior to assuming command of the battalion, LTC Chuck Hodges was a Professor of Military Science at Duke University where he implemented the use of virtual tools to support ROTC training. As a result of his successes in using those and other simulation tools, LTC Hodges was well versed in using the spectrum of LVC resources at Fort Lewis.

MGen Tom Jones, retired Marine, capitalized on LTC Hodges experience with, and propensity to use, LVC systems, the pre-deployment train-up of his battalion and the 3/2 SBCT to Iraq, and the various distributed capabilities among Army and Marine locations on the west coast, to champion and help coordinate, a JNTC-type event.

Joint National Training Capability-Type Exercise

The FTX, conducted from 4–11 March 2009, linked squads and platoons through echelons above brigade and regiment via communications and simulation systems, and participating units at Fort Lewis, Yakima Training Area, 29 Palms, Southern California Logistics Airport (force-on-force company training), and Camp Pendleton (Infantry Immersion Trainer—IIT). Organizations, locations, and events are summarized in Figure 3.

The project team's task, beyond helping coordinate the various systems and resources, was to use this FTX as a template for a future Joint National Training Capability (JNTC) exercise. Specifically, we would highlight systems and process issues in the conduct of the exercise and recommend approaches in the realm of intelligence/operations integration. Our intent was to construct a conceptual framework that would trace intelligence/operations from the bottom, the Marine and

Soldier, to the top, in this case joint training objectives, UJTLs.

Although still a work in progress, the exercise highlighted some systems operability issues between the Army and Marine Corps as well as providing insights into the integration of operations and intelligence at all echelons. Just as importantly, it highlighted the importance of ensuring the interoperability of the full range of LVC systems. The following are preliminary observations to be addressed in the concept and experiment design.

- Joint Training and Experimentation Network (JTEN) connection does not ensure interoperability. A number of subsystems needed testing prior to the exercise. Examples included different versions of Joint Conflict and Tactical Simulation (JCATS) and difficulties linking the Army's Maneuver Control System with the Marine Corps' Command and Control Personal Computer.

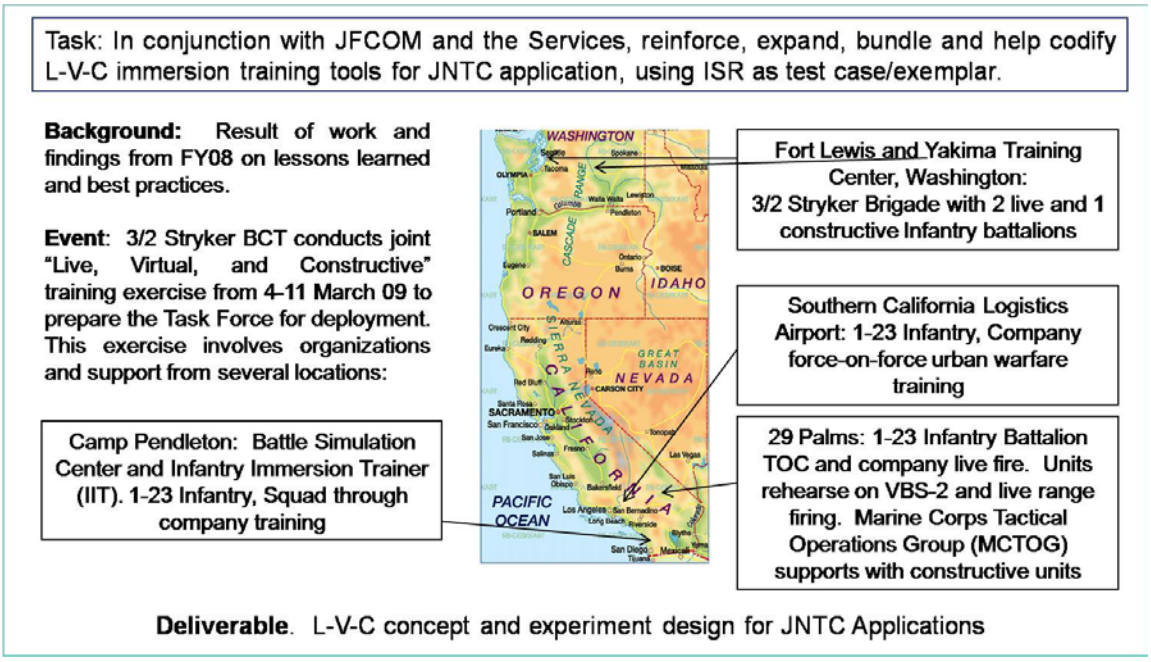

Figure 3. Live-Virtual-Constructive (L-V-C) JNTC-Type Exercise

- Common Scenario. Fort Lewis "Cascadia" provided a common scenario to be overlaid on/integrated into any terrain. The project team strongly advocates that this practice be replicated by the Services and championed by JFCOM.
- Link Scenario to Joint Objectives/UJTLs to provide context and focus. Examples from the UJTLs include Operational (OP) 2.5 Disseminate and Integrate Operational Intelligence, Strategic National 7.4 Educate and Train the Force; Strategic Theater (ST) 7.2.4 Assess Training and Education Effectiveness, and OP 1.5.5 Assist Host Nation in Population and Resource Control (all referenced in Table 1).
- Include Virtual Battle Space-2 (VBS-2) to provide a "test drive" of a range prior to live-fire. This subsequently led to an effort to align VBS-2 with actual terrain of Afghanistan. This initiative will avail units programmed for deployment to OEF an additional training opportunity through the use of this virtual tool.
- Use VBS-2 as a mission rehearsal tool prior to the unit's entering the IIT.
- Execute non-kinetic as well as kinetic actions in the IIT, as an example, exercise EMAC and ES2, negotiation and questioning skills. This could include the incorporation of HUMINT Exploitation Teams to develop and infuse bottom-up intelligence.
- Track information to intelligence flow; its integration into operations; also track resulting asynchronous and synchronous decision-making—this is all about decision-making under pressure!
- Insert the Theater and National Intelligence capabilities that will be available to the BCT and RCT in-theater into the train-up down to the BCT and RCT level (lesson 4 in Table 1). JFCOM involvement in these train-ups is critical.

Additionally, observations from the visits to the training centers and coordination of the JNTC-type exercise:

- Reinforced a case study observation that the UJTLs lack the granularity needed to support training, especially in a COIN environment.
- Reinforced the paradigm shift in how we deal with intelligence and operations in a COIN environment. At the same time, bringing units up to an acceptable level of performance at home station to take advantage of the graduate level type exercise at CTCs is a challenge.
- Highlighted that lesson assimilation at the training centers is being driven by the training centers, not by the formal lessons learned process. In fact, in many cases the informal infusion of lessons learned at the training centers is much quicker and resolute than the formal process. Having said that, the formal process supports the effort by documenting and archiving those lessons for future training events.

The development of the JNTC template, capitalizing on joint and service resources and capabilities at the different locations, may well ameliorate some of the resource issues at home station and provide a more realistic joint environment in which to train these units before their MRX/MRE.

Training and Education Continuum

We've chosen to discuss the training and education continuum between the discussion of training centers and JPME institutions to accentuate what we see as a split between the two communities. We're not speaking of the institutional split, but a lack of recognition in both communities that training and education are inextricably linked and complementary.

Certainly there is a difference between the two both in terms of learning outcomes and level of complexity. In simplistic terms training is "what to think" and education is "how to think" and training is more associated with the tactical level while education is more targeted at the operational and strategic levels.

Barry Watts in "US Combat Training, Operational Art, and Strategic Competence," discusses "wicked problems and the cognitive demarcation between tactical experts, operational artists and strategists." In his cognitive view of the traditional levels of war he describes the tactical response as an "intuitive response to tame problems" and the strategic or operation design as a "reasoned reframing of 'wicked' problems."

We agree that there is a cognitive boundary that is crossed when a student/leader progresses from training to education—from what to think to how to think. However, because complex problems are pushed ever lower in the command structure, "tame" and "wicked" are not good descriptors of tactical and operational or strategic issues when speaking of decision making in the COIN environment.

LtCol Joe L'Etoile, USMC retired, former commander of 2/7 Marines, feels that "small unit leaders require more artistry (creativity, agility, flexibility) than before due to the 'irregular' or non-linear nature of the conflicts we are currently engaged in." He sees less of a tame- versus-wicked dividing line or a level-of-war dividing line and more of a "causation versus correlation" dividing line where deductive logic is suitable versus where inductive logic is suitable. He cites the irregular nature of the problems he encountered in Iraq:

> *"In Iraq, most of the problems did not have definable or verifiable premises (deductive). The best case scenario was usually some sort of correlation that could be isolated for examination. Therefore, inductive reasoning skills were more often required. Assessment is another area where we spend too much time on causation vice correlation. We like to isolate facts (the price of bread, how many people voted, number of IED attacks) and then find causation with something that we are or not doing. The fact is, there is rarely if ever causation to deduce. There is usually correlation to induce but because the premise is not proven it requires constant and rigorous re-assessment."*

Additionally, every training event can contain educational opportunities and every educational event requires an element of training. Hence the continuum, and how training and education complement each other, is an important construct.

We used the Training and Education Continuum to consider all aspects of training and education. The Joint Training Functional Concept includes a Joint Training Continuum to discuss career-long programs to "equip individuals with skills and knowledge they need for joint duty and operations." However, a more detailed template, as reflected in Figure 4, is needed to examine gaps and opportunities in joint and service programs. What you see is a template that is based on joint requirements, strategy, and doctrine, is connected to the six warfighting functions, and addresses many different aspects of how we train, educate and prepare people for combat as indicated in the five basic training and education functions indicated in the upper box, entry level, skill progression, and so on.

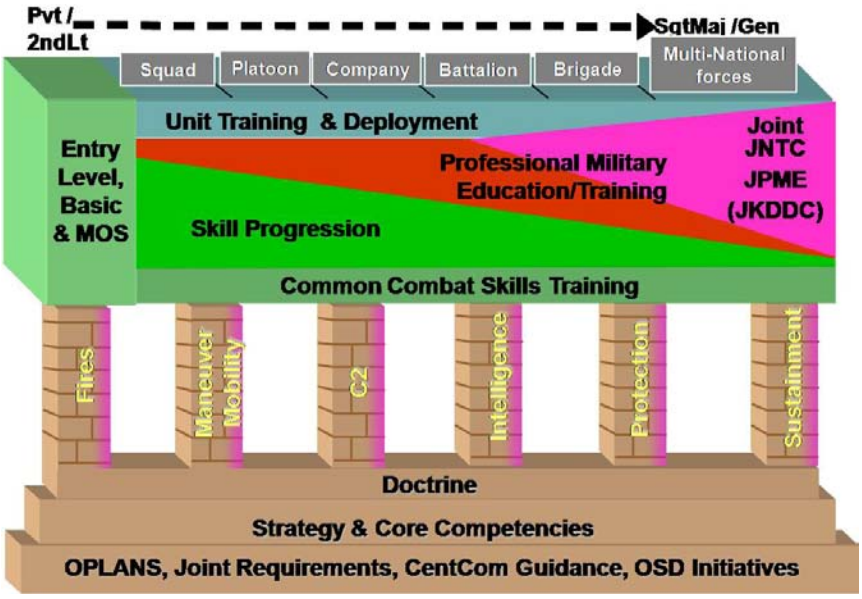

Figure 4. Training and Education Continuum, Phase 3 (courtesy Marine Corps)

The continuum reflects the progression from private or second lieutenant to sergeant major or general, respectively, and the various skills that individuals attend throughout a career. It's important to note that it includes a collective training piece that takes us from squad to multi-national forces and allows us to talk about how units are trained. The continuum also provides us a way to look vertically—to peel back those layers and look at the complementary skills that are required to make the unit effective. As an example, at the platoon you have a lieutenant platoon leader, but you also consider the complementary skills of the platoon sergeant to lead and manage that platoon. We find the same things at company with the captain and the first sergeant, and at battalion and brigade.

The real index of success is how this manifests itself at the unit level in combat, but obviously this must be peeled back as one identifies strengths and weaknesses and how they are linked to entry level schooling, skill progression schooling, PME and so on.

A good example of the perturbations that can be tracked on the continuum is the publication of FM 3-24 in December 06. The publication of doctrine had an impact on all five training and education functions.

Lessons learned programs mainly deal with TTPs which are in the training realm, but later the frequency and credibility of those TTP may be codified into doctrine. There are Joint and Service mechanism for making that transition. During the initial years into OIF, the Coalition approach did not reflect the type of war America was fighting—a counterinsurgency—and so, the Coalition was dealing in TTPs that challenged how they were going to wage war. One of the downsides of the current conflict is the operating tempo (OPTEMPO) and the inability to properly prepare for deployments, but one of the upsides of this grueling OPTEMPO is that almost all units have gone into combat so the barometer for what is and is not working is reality. As we look at the connecting files to foundational pieces, we see that certain changes to training have taken place such as basic training, school of infantry, and some of the MOS schools. How is that reflected at the JPME institutions?

Joint Professional Military Education

CJCSI 3150.25D, "Joint Lessons Learned Program (JLLP)" indicates the JLLP "should influence joint training AND [emphasis added] education" and per CJCSN 3150-25, the "JLLIS is the system of record for JLLP."

Currently, JLLIS is dominated by tactical lessons; there are few usable operational or strategic lessons in the JLLIS as compared to the tactical lessons. That reinforces a perception that "lessons learned" applies only to TTPs. The further one moves from training to education the more difficult it is to see any relationship with the lessons learned program. In fact, when posed the question, "How do you use lessons learned to inform and update your curricula?" most educators seemed confused. They weren't familiar with the lessons learned program. So we posed the question differently, "What changes have you made in your curricula since 9/11, and why? What triggered the

realization you needed to make a change, and what process did you use to implement the change?" We were trying to reverse-engineer the process and find the mechanism used by JPME institution for identifying and making changes. A representative of one institution remarked that they've made no changes as a result of, or since 9/1, further investigation revealed that was not entirely accurate. Some indicated that JULLS, a program phased out in 2000, was not user friendly and did not contain the type of information needed to support education. Those comments told us that JPME institutions were not familiar with the JLLP or JLLIS.

When speaking outside of JLLP, there are a number of mechanisms that JPME institutions employ to exploit and assimilate lessons into the curriculum, examples include:

- Mandated/suggested—Officer Professional Military Education Program (OPMEP) mandated joint learning objectives and suggested Special Areas of Emphasis (SAE)
- Commonly used across the community—electives, lecture series, faculty rotations, student experience, regional visits, surveys
- Other efforts—pilot programs for interagency coordination; linkage between lessons learned and concepts/doctrine development and schools; faculty development programs

These are all good initiatives, but, JLLP seemed to be a non-player or to play only a minimal role in supporting education objectives. In order for JLLP/JLLIS to influence education, the perception that JLLP/JLLIS is for TTP only, must change. The following can support that change.

- Everyone (the field, active collectors, users) needs to participate;
- Submissions need to include operational and strategic as well as tactical lessons.

This may require a culture change to have students and school faculty, as well as field units and collection teams, submit operational and strategic lessons.

Additionally, the team investigated the mechanism for making this link between current lessons and educational needs. As such, we took a step back and looked at JPME institution objectives. In general, their objective is to develop operational and strategic thinkers. A major part of that entails developing critical thinking skills, i.e., how to think. Developing critical thinking skills involves more than information. As we looked at the educator's challenge, there were a number of potential approaches for leveraging JLLP resources.

1. Share what's been developed—information and approaches. As an example, one of the faculty members used, "What Rumsfeld Got Right," in his strategic thinking seminar. Although the materiel is important, the approach, and how the instructor used the materiel to develop critical thinking skills, is just as important. For educational purposes, the "approach" should be part of the lessons learned submission. Maybe JLLIS needs to incorporate a template that best supports education submissions.
2. Materiel should be collected and organized to accommodate for differences in educational needs and the traditional lessons learned Observations, Insights, and Lessons (OIL)/AAR collection. As an example, the case study was mentioned during JPME visits as the most applicable vehicle for introducing information *and* exercising critical thinking skills. Approaches might include,

- *Supplement existing case studies* within current lessons. As an example, the USMC Command and Staff College uses "COINEX—War Comes to Long An Province" as a vehicle to study counterinsurgency. During the seminars they reflected on the similarities and dissimilarities of OIF and Operation ENDURING FREEDOM (OEF). A more complete development of those comparisons can be accomplished via JLLP. If the information is not in the database, then requests for information or RFI's can be submitted against the requirement.
- *Base new case study development* on educators' needs such as themes, topics, areas of interest, OPMEP, SAE, and so on. There are a number of topics emanating from OIF and OEF that could serve JPME. One recommendation was the "The Awakening" from Al Anbar. Such a case study could support Joint Learning Objectives dealing with culture, interagency/intergovernmental, soft power, and others. A proposed sequence would be to first connect to the JPME learning objectives, then develop the storyline, themes, and collection plan around those objectives. Finally, leverage lessons learned sources, to include active and passive collection, against the case study development. Figure 5 provides a candidate approach for linking JLLP to education.
- Optimize the *collection format* for education and the development of case studies.
- Organize the lessons learned repository (a section of it or the search mechanism) in such a way that supports education. Some have suggested that this might be a separate section of the JLLIS developed for the educators since it may incorporate the

faculties' educational approaches as well as the operational and strategic materials.

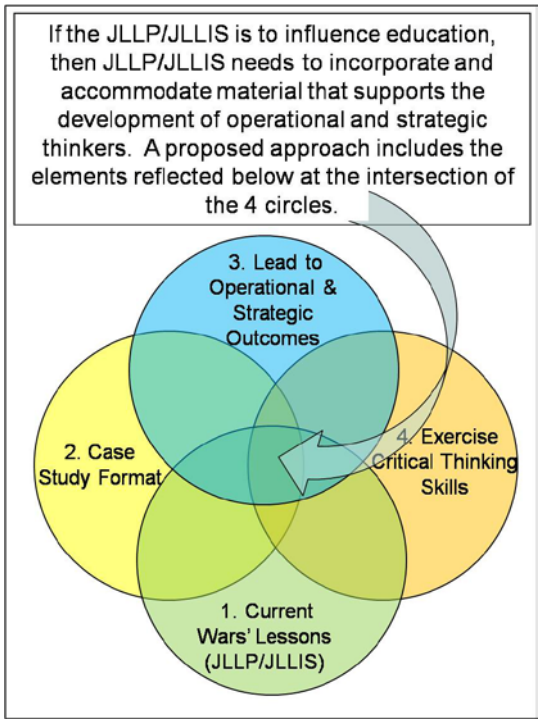

Figure 5. JLLP Influencing Education – Candidate Approach

This is an opportunity for Educators to voice their needs in this system!

In summary, there are a number of ways to bridge the gap between JLLP and education. First, it depends on faculty and students using the system—that includes submitting lessons. If we want to get at the core of the education process, then the submission needs to include how the information is used as well as the materiel itself. If we truly want the JLLP to influence education, then the JLLIS needs to incorporate changes in the submission templates, formatting and archiving to accommodate the needs of the education community.

Summary, Findings and Recommendations

Joint and Service lessons learned programs, as well as organizational, service, and joint initiatives designed to meet a rapidly changing environment, are critical to understanding the changing character of war and its implications for training and education. As the environment demands a more creative, flexible, and adaptive leader, the cognitive boundaries of "what to think" and "how to think," are being pushed lower in the rank structure; consequently, training and education need to adapt to remain relevant. The IDA project's objective was to provide training and education solutions to better enable joint forces to quickly adapt to new missions and challenges.

The question, generally, becomes, "How do we apply current wars' lessons to training *and* education," or more specifically, "How do training centers and JPME institutions adapt to a changing environment and exploit and assimilate lessons learned?" We approached those questions in three overlapping and iterative phases: 1) Review service and joint lessons learned programs; 2) apply the case study method, using intelligence/operations integration as a vehicle for looking at the lessons learned process; and 3) visit the CTCs and JPME institutions to identify how they adapt to meet changing requirements, and assimilate and exploit lessons. Figure 6 summarizes our approach and methodology.

Essentially we found:

1. Since 9/11, there has been a rapid growth in lessons learned organizations and activities, in terms of resources, effort, and command emphasis.
2. Issue tracking, cradle to grave on best practices/issues, is not easy. In particular, "Implementation" or closure of best practices/issues is difficult to track or reconcile as different organizations become responsible within the DOTMLPF arena.
3. CTCs, Communities of Interest (Stryker) lead the way in quickly implementing tactical lessons.
4. Training of lessons at unit level (company to brigade) is a problem due to limited "dwell time" between deployments, personnel turnover, and lack of training resources.
5. In addition to high frequency and common lessons across echelons, the case study highlighted:

– The preeminence of the squad as the foundational piece for intelligence/operations integration

– The company intelligence cell one of the most significant "best practices" noted by this bottom-to-top lessons review; it reflects a paradigm shift in the intelligence and operations approach, and is relevant to both training and education

– Potential gaps and opportunities in process: Standards/UJTL currently lack the granularity to support joint training.

6. Training approach—A multitude of best practices were identified, but the value is bundling them together into a compendium of LVC simulations and providing focused, distributed support to meet commanders' needs. This led to the coordination and execution of a JNTC-type exercise. The exercise highlighted some of

the systems operability issues between the Army and Marine Corps as well as providing insights into the integration of operations and intelligence at all echelons. It highlighted the importance of ensuring the also interoperability of the full range of LVC systems.

– Although still a work in progress, the developing template for JNTC exercises based on this experience will provide commanders with access to a greater selection of LVC resources on which to train prior to their MRE.

school faculty, as well as field units and collection teams, needs to participate.

8. Additionally, support to educational objectives requires more than information. As we move from "what to think" to "how to think," the submissions need to support the educators' objective of developing critical thinking skills, i.e., they need to reflect how the information is used as well as the materiel itself. If we truly want the JLLP to influence education, then the JLLIS may need to incorporate changes in the submission templates, formatting and archiving to

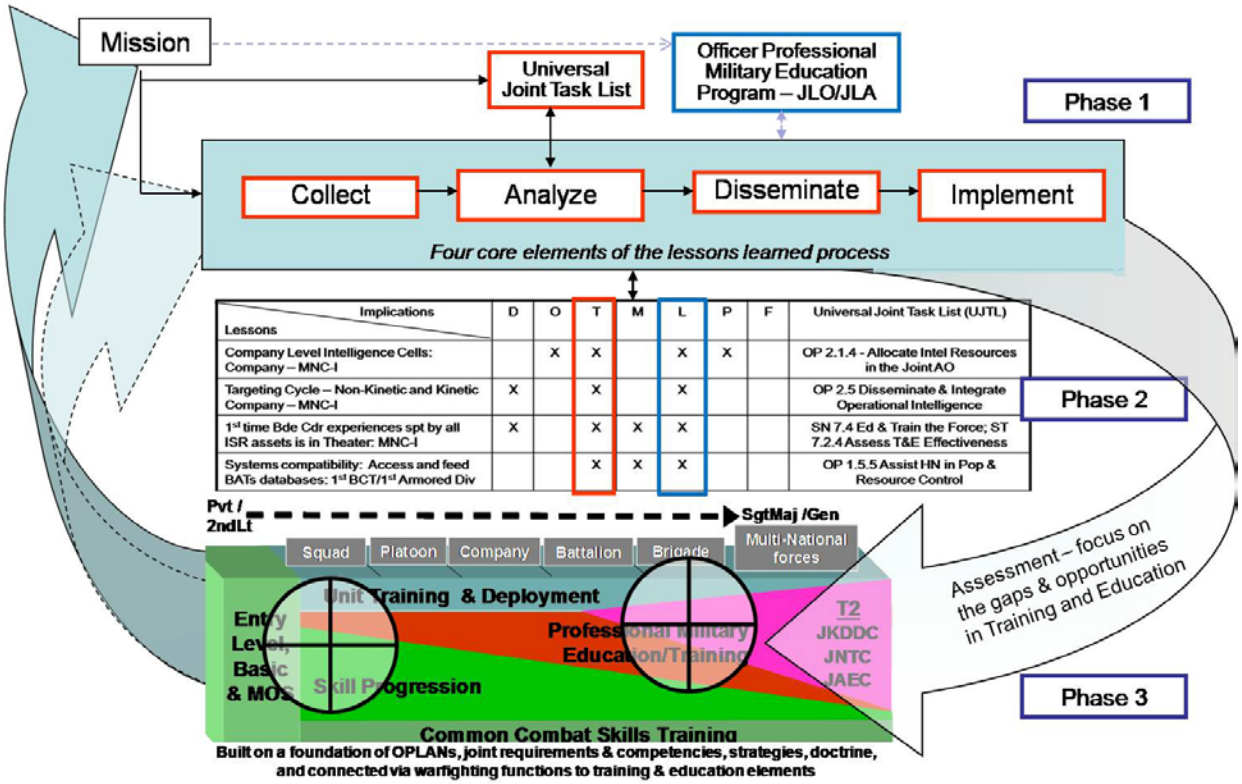

Figure 6. Applying Current Wars' Lessons to Training and Education

7. There are a number of ways JPME institutions are assimilating current information and lessons into their curricula: mandated or suggested by directives such as the OPMEP; commonly used methods such as electives, lecture series, faculty rotations, student experience, regional visits, surveys; and other efforts. These are all good initiatives; however, JLLP seems to play only a minimal role in supporting educational objectives. First, we need to change the perception that JLLP/JLLIS is for TTP only. This means that:

– Submissions need to include operational and strategic as well as tactical; everyone, students and

accommodate the needs of the education community. There are a number of ways to better understand education's requirement for the JLLP. We recommend the development of a case study that starts with educational objectives and documents how the JLLP could support that type of an endeavor in the future.

Bringing all this together is the realization that training and education are complementary and the Training and Education Continuum provides us a way to identify gaps and opportunities and the contributions of each.

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