Optimizing Leadership Performance

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ABSTRACT

This program is aimed at providing innovative training methods and applications for development of dynamic leadership skills. The training will support current and evolving national and international requirements. Optimizing the human contribution to joint warfighting, and achieving a war-winning capability for future operations requires a paradigm shift from traditional leadership methods. To be effective in the new paradigm, leadership training must adapt to rapidly changing events and flexible multi-disciplinary organizational structures such as joint and multi-national forces operating in collaborative, distributed, network-centric environments. Military leaders must have the knowledge and skills to lead successful operations in various battlefield and non-battlefield environments such as peacekeeping, stability, humanitarian operations, and working with international organizations. In the new asymmetrical paradigm, the enemy has set conditions such that U.S. forces must engage at the tactical level, largely reducing the role of technology in the fight and changing its focus to support information collection and sharing. The new paradigm requires leaders who understand how to achieve human dominance over adversaries not just kinetic dominance. The authors identified dynamic leadership skills required in asymmetric warfare. They found ten specific roles and responsibilities essential to operate in joint, stability, support and security operations within an asymmetrical war. In addition to the ten specific roles and responsibilities, the authors found certain meta-leadership knowledge and skills and meta-leadership attributes that are expected to enhance performance. This requirements analysis is expected to feed a training program consisting of three levels -- mastering basic concepts, applying specific skills in limited situations, and integrating the entire range of skills and knowledge to solve complex real world military problems. Two instructional strategies are intended to provide maximum effect - formal study in a classroom with the group, or independent distributed study.

ABOUT THE AUTHORS

William J. Walsh has been designing innovative training and education technologies for military and civilian customers since 1968. His work has ranged from defining requirements for new training systems, designing and developing e-learning and intelligent tutors, and developing and delivering train-the-trainer courses. Mr. Walsh has been active in I/ITSEC over the years as a paper author and presenter, as 2001 Program Chair and 2003 Conference Chair. Mr. Walsh has a BA from the University of Scranton and a MA from The Pennsylvania State University.

Orly Ben-Yoav Nobel, Ph.D is a strategy and leadership development expert who worked with multiple organizations ranging from leading financial institutions to the US Army. She advised senior management teams on development of strategic direction for their organizations and designed programs aimed at identifying and teaching key leadership competencies critical for strategy implementation. Dr. Nobel spent several years at the United States Military Academy, West Point NY where she lead research projects and developed the foundations for training program focusing on military leadership in volatile, high risk and cross cultural environments. Dr. Nobel has a BA in psychology from Bar-Ilan University in Israel, a Ph.D in organizational psychology from the State University of New York at Buffalo and a Post Doctorate certificate in clinical psychology from New York University.

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INTRODUCTION[1]

"*Before 9/11,* [placing combat advisors in Iraq] *would have been turned over to highly select, rigorously trained Special Forces. We have only so many of these tremendous quiet professionals, and they are fully engaged in all theaters, including Iraq. So the rest of us conventional types had to step up. Schooled in many cases by Special Forces experts, we had to learn (or relearn) our weapons and tactics fundamentals, absorb some cultural awareness, and get out to Iraq and get cracking*," (Bolger, 2004).

The goal of this paper is to present a conceptual model for leadership that would underlie design of a scenario-based leadership development training program aimed at preparing officers[2] to lead effectively in the new asymmetric reality of joint, stability, support and security operations. The paper begins with a short description of the theoretical foundation of leadership development that guides design of the program. It proceeds to provide an overview of the comprehensive analysis of the different roles and tasks that military leaders may be called upon to fill in these missions and the competencies (i.e. knowledge, skills, abilities, and attributes) that are likely to enable them to provide followers with purpose, direction, and motivation during these tasks. The paper concludes with a brief analysis of the learning principles expected to guide development of simulation scenarios as well as a brief review of the utility of computer simulations as a leadership development training tool.

Initial Conceptualization of the Problem

Optimizing the human contribution to joint warfighting, and achieving the revolutionary war winning capability articulated by the Chairman, Joint Chiefs of Staff (2005) for future operations requires a paradigm shift from traditional methods of warfighter leadership. Future leaders will be required to be technologically savvy, flexible in their approach to problems, willing and ready to share knowledge, and able to work effortlessly with other services and foreign cultures. In the words of Gen Myers: "Execution of complex operations…….requires knowledgeable, empowered, innovative, and decisive leaders, capable of leading the networked joint force to success in fluid and perhaps chaotic operating environments. Future joint leaders will require more comprehensive knowledge of interagency and foreign cultures and capabilities." In effect the new breed of leaders must possess dynamic leadership skills, i.e., be cognitively ready for any contingency. Operationally speaking, cognitive readiness means ensuring that leaders and individual warfighters are mentally prepared to accomplish the mission; that each person is performing at an optimal performance level with the most effective and affordable tools and techniques.

Battles of the future will not be fought entirely on battlefields. In fact, according to Chairman, Joint Chiefs of Staff (2005) even some battles of today are being fought by means other than conventional combat. Rather, "winning in war requires achieving desired political aims. Achieving these aims requires resolving crises, winning conventional combat operations, and ensuring stability in affected areas. The joint force must be capable of successfully conducting stability operations prior to, during, and after combat operations or as a stand-alone mission." In fact, our future leaders must be aware that integrating the full spectrum of military efforts with other instruments of national power is essential to achieving national objectives. Future leaders must have an appreciation for the fact that

[1] This paper describes the initial approach taken on a Small Business Innovative Research program to define and assess leadership performance and dynamic leadership skills requirements to fit a new model for leadership training. The program is managed by Dr. Barbara Sorensen of the Air Force Research Laboratory, Human Effectiveness Directorate, Warfighter Readiness Research Division.

[2] While this paper refers to leaders as "officers," it in no way implies that the skills, knowledge or abilities described herein are strictly applicable to commissioned military officers. Rather, the authors use the term in a broader, more encompassing manner to refer to most leaders of units or organizations.

military success on the battlefield may only be a small part of the nation's overall strategy to reassure our allies while defeating potential aggressors.

Unfortunately, the current model for leadership training has not adapted to fit these changing roles. Current military leaders have been groomed throughout their careers to approach certain problems with specific tactics. "Industrial Age militaries decomposed the battlespace, created layered organizations, divided into specializations, and organized forces into hierarchies. Thinking that this approach transformed the complexity of war and large operations into a collection of simple, manageable tasks and problems, the Industrial Age military felt that they were able to focus on the optimization of processes," (Alberts & Hayes, 2003). The concept of warfighting leadership is changing. The rules of engagement are no longer the same (Cebrowski & Garstka, 1998). Increasing demands are being placed on leaders at all levels. Changing circumstances at the national and international level require leaders who are able to respond to a wide range of threats with a wide range of options. Consequently, the development of future leaders depends on adapting to new threats with new ways of training. Although current leadership training heavily emphasizes warfighting skills and decision making, leaders emerging from this training are specifically equipped to operate within the traditional organizational structure and within expected parameters.

In order for our future leaders to be effective in the new paradigm, their training must adapt to rapidly changing events and flexible, revolutionary multi-disciplinary organizational structures such as joint and multi-national forces operating in collaborative, distributed, network-centric operating environments. Within this framework, future military leaders must have the knowledge and skills to lead successful operations in various battlefield and non-battlefield environments such as peacekeeping, stability, humanitarian operations, and working closely with international organizations. Two concepts that impact the preparation of future leaders are network centric operations (NCO) and effects-based operations (EBO). Both concepts are still unclear, even to the educated observer. Though in use to some degree, these emerging concepts are being formulated as we speak, yet they will be central to the set of dynamic leadership skills required in the future.

The Current Operational Environment

The United States' has established itself as a hegemonic military force that is able to project combat power to all corners of the globe to shape strategic security and geopolitical balances and engage national adversaries. The global war on terror (GWOT), however, has shown the limitations of lethal or kinetic forms of combat power and thus questions whether relying on technological overmatch is an adequate and sustainable strategy for the future. In this new asymmetrical reality, U.S. forces are fighting predominately in urban settings where enemy forces cannot be easily discerned from neutrals or non-combatants and where damage or destruction of civilian infrastructure must be limited. Asymmetric warfare, therefore, often becomes an exercise of restraint versus maximizing the application of kinetic forms of combat power. This is a new paradigm for a force that evolved over the last half century to fight massive kinetic warfare against potential symmetric enemy formations across the battlefields of Europe or Korea, or as evidenced in Southwest Asia during Desert Storm.

In this new asymmetrical paradigm, the enemy has set the conditions such that U.S. forces must engage at the tactical level, largely reducing the role of technology in the fight and changing its focus to support information collection and sharing. This is a human fight – up front and personal. The new paradigm requires leaders who understand how to hold human dominance over current and potential adversaries in addition to kinetic dominance. Establishing human dominance requires not only soldiers and leaders who are physiologically prepared to handle the stress and physical demands of sustained close-combat warfare, but also cognitively advanced to engage a cunning enemy at the intellectual level with adaptability and nimbleness.

Re-Defining Critical Capabilities for Military Leaders

In his recent manifesto, Major General (Retired) Robert Scales (2006) makes a cogent argument that U.S. forces must plan now for a potential new paradigm of warfare - a paradigm that could define *World War IV* where effects-based, net-centric, information based and other techno-centric solutions have severe limitations. *World War IV*, argues Scales, will be defined as a psycho-cultural war and cannot be won by developing greater "things," but "biologically," by developing greater human capability. Scales argues that this shift will require a new focus of senior military leaders away from a current fixation on technology to one where social, behavioral and cognitive sciences are leveraged to foster the development of leaders and soldiers. This powerful manifesto implies that the elements of victory will be made through human endeavors; namely through cultural awareness, building alien armies and alliances, shaping human perceptions, inculcating knowledge, tactical intelligence, psychological and physiological tuning (maximizing human performance), developing

high performing soldiers and small units; and through developing leadership, decision-making, and intuitive battle command. In sum, kinetic forms of force-on-force warfare are becoming less prevalent and the non-kinetic forms are largely determining the success of current military operations.

This new complexity requires officers of all services to conduct joint operations that integrate tactical proficiency with the leveraging of nonmilitary advantages including the building of trust and alliances with nongovernmental organizations, local security forces and noncombatants (Scales 2006; Wong 2004; Kifner, 2006). Winning "hearts and minds" and developing collaborative relationships with local security organizations and civilians can be essential for rebuilding societal institutions as well as for the collection of information or the aligning of local support necessary to succeed in irregular war fighting. The growing need to establish and maintain cooperative relationships with noncombatants is a central component of human-dominance and behavioral approaches to warfare. Training and development in this area has focused primarily on the need to enhance officers' cross-cultural awareness including basic knowledge of cultural history (e.g. ethnic diversity), manners and traditions (social structure, role of religion and religious leaders), style of communication (e.g. how to avoid offensive body language and gestures), and basic language skills. Recently there is a growing recognition of the importance of going beyond the development of cultural awareness by focusing on the negotiation skills required to solve conflicts and develop working agreements necessary to foster collaboration with local civilians in complex circumstances. This suggests that to accomplish missions involving war fighting and stability and support functions, officers must posses the cognitive readiness and behavioral flexibility necessary to successfully utilize a wide spectrum of skills and competencies. These competencies may range from mere situation awareness to aggressive war fighting, to what may be experienced as the antithetical competencies of mediation and cross-cultural negotiation.

Toward a New Training Approach

In order to establish dominance over the battlespace, leaders must develop the competencies to adeptly process battlefield information along the following sequence:

Through effective processing, they will gain situational awareness, situational understanding, situational solutions and actions, reflectively learn from those actions—and ultimately—establish cognitive dominance over adversaries and the battlefield.

Leaders must scan battlefields that are rich in stimuli. A plethora of sights sounds, smells and tactile information is available to the leader at any point in time. Leaders must have the ability to scan and identify critical sources of information, as the amount of stimuli available is often in excess of the cognitive limitations of the individual or the amount of time available. Once critical battlefield sensory information is gained and discerned through processes of attention, selection and perception, it must then be fully processed. Leaders must be adept at higher-order cognitive processing of new knowledge within a rich framework of existing knowledge in order to 'make-meaning' of that information. Effective meaning-making systems enable leaders to decide on the most optimal military solutions. Leaders must ultimately act on their decisions resolutely. The leader needs to forcefully engage and effect purposive action to carry out their decisions, and must therefore have a sense of ownership or agency over their domain of leadership responsibility. They must act with confidence and courage to manifest their decisions into corresponding actions. Finally, leaders must reflect on the adequacy and broad ranging effects of their actions to discern lessons for the future. This learning must be codified and integrated into processes not only at the individual level, but at organizational levels as well.

LEADERSHIP DEVELOPMENT: THEORETICAL FOUNDATION

A central assumption shared by varying conceptualizations of leadership is that it involves a process "whereby intentional influence is exerted by one person over other people to guide, structure and facilitate activities and relationships in a group or organization" (Yukl, 2006). The definition provided by Army Field Manual 22-100 adds an emphasis on improving the organization. It describes leadership as "influencing people—by providing purpose, direction, and motivation—while operating to accomplish the mission and improving the organization." Recent conceptualizations of leadership expertise consider it to involve a complex mix of cognitive, social and behavioral skills (Day & Halpin, 2004; Lord & Hall, 2005; Mumford, Zaccaro, Harding, Jacobs & Fleishman, 2000).

Leadership development is defined as the expansion of a person's capacity to demonstrate effectiveness in leadership roles and processes (Van Velsor & McCauley, 2004,). Enhanced leadership capacity involves the ability of the leader to consider and apply a

wider range of strategies to a given situation suggesting increased complexity in their responses (Day, 2004). Specifically, leadership growth has been conceptualized in terms of increased cognitive, social and behavioral complexity (Hooijberg, Hunt & Dodge, 1997). Cognitive complexity is defined in terms of differentiation, which refers to the number of dimensions or concepts used in perception of the social or physical environment, and integration, which represents the degree to which individual dimensions can be combined to meet the demands of specific situations.

Social differentiation addresses the ability of a leader to recognize different aspects of social situations and their significance; understand social relationships and networks; recognize and regulate one's own emotions; recognize others' emotions, and the complexity of self knowledge. Social integration refers to an individual's capacity to integrate the various facets of social situations as a way to enhance their understanding of the situation and form appropriate responses. Understanding of social situations technically falls under cognitive complexity but is treated here separately due to the importance of social relationships to effective military leadership. Behavioral repertoire refers to the breadth of different leadership roles that can be performed by a leader effectively (Day & Lance, 2004; Hooijberg et al., 1997).

One effective way to enhance leaders' cognitive, social and behavioral complexity is to assign individuals to "stretch" tasks that include challenges and require thinking and acting in more complex ways (Day & Lance 2004). A scenario-based, leader development program should be designed to meet these requirements by developing a series of scenarios that simulate realistic job assignments and demand progressively greater cognitive, social and behavioral complexity for the leader to complete missions successfully. Development of realistic and challenging simulations must begin, however, with a detailed task analysis that describes key responsibilities involved in the various roles leaders' must engage in to meet asymmetric and complex military situations to establish cognitive dominance.

ANALYSIS: OFFICER'S ROLES

Methodology

Our analysis of key roles and responsibilities which officers and their units may be asked to perform and the competencies (i.e. knowledge, skills, abilities and attributes) that underlie successful performance involved five key steps:

1. Review of key DOD sponsored research and analysis: A comprehensive review of recent DOD sponsored tasks and competencies analyses focusing on officers' roles and responsibilities in stability and support and kinetic operations (Cosby, Madden, Jacobs, Flynn, Sellars, Brown & MacIntire, 2006; Morath, Ccurnow, Cronin, Leonard & McGonigle, 2006; Leonard, Polich, Peterson, Sorter & Moore, 2006; Ulmer, Shaler, Bullis, DiClemente & Jacobs, 2004).
2. Review of FM 3-24 Counterinsurgency: Review of the recently published counterinsurgency Field Manual (Petraeus & Amos, 2006).
3. Review of scientific research and journal publications: We conducted a review of recently published research focusing on officer leadership roles and responsibilities in various types of operations (e.g. Ben-Yoav Nobel, Zbylut, Fuchs, Campbell, Brazil, Morrison, 2006; Ben-Yoav, Wortinger and Hannah, 2006; Scales, 2006; Wong, 2004).
4. Interviews with combat experienced officers who served in OIF: Summary of key roles and competencies derived from in-depth, 30 minute, one-on-one interviews conducted in June 2005 with 36 mid-level and junior officers who returned from deployment in Iraq in March or April 2005. All participants in the study were selected based on their roles and responsibilities during deployment that included regular contact and formal and informal negotiations with members of the local Iraqi population in addition to performing or supporting security operations.
5. Confirmatory Interviews with combat experienced officers who served in OIF: We held, 45-60 minute, in depth, one-on-one interviews with ten officers who recently returned from service in Iraq or Afghanistan (seven company commanders, one battalion commander and two advisors) to further clarify and confirm the list of roles and key competencies identified in steps 1 through 4.

Results

Our analysis yielded ten key roles each associated a list of responsibilities within those roles. The ten roles with sample tasks associated with each of them are presented in Table 1. For parsimony, the tasks and competencies shown in the tables are representative examples and are not exhaustive. A more complete list of roles and associated tasks that emerged from our research is provided in Walsh, Fulbright & Cone, 2007.

As can be seen the roles range from a focus on physical force and kinetic physical effects required in the role as a tactical commander; spanning to non-kinetic roles such as negotiating impartial agreements and mediating disputes between competing local communities. A shared goal of most of the roles discussed is to ultimately encourage the local population to move away from hostile or neutral positions to actively or passively support U.S. military goals and local government's objectives.

Key Role	Sample Tasks	Sample Competencies
Intelligence Gatherer	Continuously assess attitudes of the local population and gain greater understanding of demographics of the area through questioning of local individuals encountered during patrols, civil affairs actions and by monitoring media and communication sources such as posters, leaflets, print, broadcast media and Internet posting.	• Guide followers to adopt a consistent and comprehensive approach to scanning the tactical and social environments • Monitor, control and correct information processing and perceptual biases
Insurgence Threat Assessor	Ensure soldiers' understanding of the social and political goals of the insurgency, its organization structure and tools; Support the proactive and continuous analysis of changes and adaptation to insurgent tactics.	• Possess adequate knowledge and clearly explain to followers the social and political goals of the insurgency • Acquire knowledge and explain to followers the organization structure and tools that insurgents employ to weaken government control and legitimacy while increasing their control • Learn and share with followers environmental cues that suggest changes and adaptations to insurgents' tactics
Tactical Commander	Establish/reinforce the chain of command; de-conflict military operations with adjacent units; determine defensive and offensive moves to ensure mission accomplishment and followers' protection; clarify rules of engagement; make complex decisions in the face of increased task load, time pressure and threat.	• Possess sound knowledge and understanding of tactical doctrine and the timely and appropriate application of specific battle tactics • Possess the capacity to translate higher commander's intent into effective action in the face of unexpected developments • Utilize rehearsals to prepare for an operation by adding clarity to commander's intent and concept of operations; identifying and discussing options at decision points; and synchronize activities within the force and among subordinate forces
Joint Operations Commander and Shared and Coordinated Situation Awareness Facilitator	Coordinate and synchronize input from team members or dispersed units; disseminate key information, intelligence, and knowledge extracted from the environment in a timely, accessible, and usable manner; ensure coordinated situational awareness and understanding of command intent in joint operations involving teams with limited or no prior experience of working together.	• Collect and integrate situation awareness information provided by individuals and teams • Discuss situation awareness information and facilitate the development of shared understanding of problems across joint units • Recognize, and utilize team members' knowledge and expertise to

Key Role	Sample Tasks	Sample Competencies
		develop novel solutions to emerging problems
Strategic Thinker and Diplomat	Consider the strategic implications of tactical moves and the consequences of military actions on the image of US forces as perceived by local the population; establish rapport and develop collaborative relationship with local civilian leaders and residents during patrols or meetings; Develop familiarity with the culture, history, religion and language of operational areas to ensure effective interaction with local population and to avoid antagonizing the population by unintentionally demeaning acts.	• Project and assess the physical and nonphysical effects as well as the intended and potential political collateral impact of unit's actions goals and objectives • Share and discuss cultural knowledge with followers and direct them to conform to cultural expectations
Negotiator, Mediator, Peace-Maker	Utilize negotiation in resolving disputes and developing agreements of collaboration with members of the local population; utilize mediation techniques to bridge the demands of representatives of local competing or hostile groups and develop commitment to a communal based set of goals; negotiate impartial agreements when dealing with representatives of specific local sects.	• Develop own and followers' negotiation and mediation skills as well as knowledge of local cultural assumptions about conflict and negotiation
Nation Builder	Support the development of local governance, social, economic and security organizations by providing training and support to emerging institutions; conducting joint planning and operations with local security forces; conducting operations to minimize the negative influence of the enemy on local population's support for the local government.	• Acquire knowledge of many diverse, complex subjects including governance, economic development, public administration, and the rule of law • Assess level of population's support to local security and governance organizations
Civil Affairs Administrator and Infrastructure builder	Support Civil Affairs assessment of local essential services; follow up with community leaders who oversee the repair or rebuilding of critical infrastructure projects; use and manage funds as a way to address local needs and foster support to local government and US forces.	• Acquire and utilize Civil Affairs evaluation methods • Develop and apply project management skills to supervise or support progress of infrastructure improvement projects • Ensure own and followers' understanding of the strategic and tactical goals of funds
Adaptive and Moral Force Developer	Motivate followers to perform tasks outside their area of specialty including crowd control and other police type activity that bring them in contact with deprived, frustrated and suffering civilians; inspire troops to operate confidently in the face of threat and unpredictability; demonstrate and inspire followers to exercise self restraint and emotional control in the face of frustration or grief; demonstrate and expect followers to exercise ethical decision making.	• Develop updated command intent in followers through training, and point out the significance of behavioral flexibility that will enable them to quickly learn roles outside their main area of specialty • Continuously update and clarify rules of engagement to facilitate followers ability to shift flexibly from intense war fighting operations to routine security or stability and support functions

Key Role	Sample Tasks	Sample Competencies
Team Leader	Utilize team resources effectively to meet increased task load; ensure that team members continuously communicate with each other about missions, barriers and facilitating factors; ensure that team members continuously cooperate and support each other.	• Foster team cohesion, cooperation and a sense of collective efficacy • Develop a galvanizing unit level identity • Reinforce trust among members of organic units and build swift trust as network configurations change

Table 1. Critical Roles in Joint, Stability, Support and Security Operations within an Asymmetrical War Environment

It is important to note that while the emphasis on one set of roles or another may change with the specific task at hand, most asymmetric military missions involve a mix of all ten roles—frequently at the same time, or sometimes sequentially. Thus when conducting security operations officers must utilize strategic thinking to consider what impact war fighting tactics employed may have on local population support for U.S. political and military goals. At the same time, officers must maintain shared and coordinated situational awareness among their followers, continue to assess insurgence threats, and be prepared to take actions upon contact as they attempt to advise members of local security and civilian organizations. The design of a leadership development program aimed to prepare officers to perform these tasks effectively must therefore target for development those leadership challenges and competencies associated with specific roles that officers may be called upon to perform, as well as the effective integration of these roles during different types of operations.

KEY LEADERSHIP COMPETENCIES

Leadership competencies refer to knowledge, skills, abilities, and attributes that enable leaders to develop followers' capacities, direct their efforts, and inspire their commitment to the successful accomplishment of complex missions. The competencies identified in our analysis serve as a foundation for defining training goals and objectives. The competencies and their associated learning objectives must be explicit as a way to guide scenario development. They must also be measurable to enable assessment, and provide feedback to trainees about performance gaps and needed improvement (Salas, Priest, Wilson & Burke, 2006).

Meta-Leadership

Like the role-specific competencies, the meta-leadership knowledge and skills expected to enhance leaders and followers performance across all roles are drawn from both interviews with experienced combat officers; the review of military leadership studies (Ben-Yoav Nobel, Zbylut, Fuchs, Campbell, Brazil, Morrison, 2006; Ben-Yoav, Wortinger & Hannah, 2006; Cosby, Madden, Jacobs, Flynn, Sellars, Brown & MacIntire, 2006; Morath, Ccurnow, Cronin, Leonard & McGonigle, 2006; Ulmer, Shaler, Bullis, DiClemente & Jacobs, 2004; Wong, 2004) and the recently published Army and Marine Corps counterinsurgency doctrine FM 3-24, (Petraeus & Amos, 2006). Several key meta-leadership knowledge and skills have been identified as central for preparing officers to lead effectively across the full range of roles and responsibilities involved in security and stability operations (see Table 2).

Meta-Leadership Knowledge and Skills
• Role modeling
• Performance management
• Delegating
• Influencing
• Problem-solving, decision-making, strategic intuition
• Situation awareness
• Supporting

Table 2. Key Meta-Leadership Knowledge and Skills[3]

Meta-Leadership Attributes

Meta-leadership attributes may be classified as: Cognitive, affective and self-regulatory psychological states. Several attributes appear highly relevant for effective leader's performance in fulfilling the multiple roles and responsibilities involved in security and stability and support operations. High levels of cognitive and social complexity (Day & Lance, 2004; Hooijberg et al., 1997) are likely to enable a more complete understanding of the complex tactical and social situations encountered in asymmetric warfare. They are also likely to enable officers to devise more

[3] For a complete description of these knowledge and skills, please see Ben-Yoav Nobel & Hannah, 2007.

appropriate solutions to novel problems. The meta-leadership attributes are listed below (see Table 3).

Meta-Leadership Attributes
Cognitive and affective attributes:
Cognitive complexity
Social complexity
Hardiness
Leadership Efficacy
Courage
Optimism
Self-regulation attributes
Metacognitive ability
Emotional control
Behavioral flexibility

Table 3. Meta-Leadership Attributes.

The complete set of role-specific and meta-leadership competencies, knowledge and skills, and attributes described in this paper will be confirmed by additional research in Phase II of this project. Once confirmed, they will define the final set of learning goals and behavioral indicators will be developed.

PEDAGOGICAL APPROACH

This identification of leadership skills, knowledge and abilities in the abstract may contribute beneficially to leadership development; however, our purpose has been to identify ways in which leaders can be prepared to better face the new reality of war. As such, the ultimate targets of our analysis are new and emerging leaders, and current leaders faced with challenges for which they have not been prepared. To provide the optimal learning environment for each of these groups we envision a leadership training program that is able to be utilized in training environments for new leaders, like military academies and new officer preparation and commissioning programs.[4] This is one reason why the Leadership Development Research Center (LDRC), Department of Behavioral Science and Leadership, United States Military Academy, West Point is an interested participant. A second target audience is those potential leaders who are already on duty who may not have been prepared with the dynamic leadership skills required for modern asymmetric warfare. For these individuals, a course of independent study is best suited for their needs. Thus, we have two widely diverse populations for whom different instructional strategies are appropriate. For those in the academies, a training program that makes use of existing instructional methods, i.e., traditional classroom, appears to be best so that they can work group exercises involving all members of the class. While for the other dispersed group, individualized instruction, i.e., computer-based training, is more appropriate.

Challenge and Complexity

Developmental experiences leading to leadership growth involve three key elements: assessment which serves to indicate strengths and areas for improvement and is assumed to motivate trainees to improve; challenge which forces people to question the adequacy of their skills and to adapt new capacities; and support primarily from superiors and peers, which is necessary to ease the struggle and sometimes pain involved in acknowledging one's limitations, letting go of familiar work procedures, and developing new competencies (Van Velsor & McCauley, 2004).

A valid leadership training program will include a tutorial component to introduce key roles and competencies. It should also involve a series of realistic simulated training scenarios that become progressively more challenging and require increasingly more complex decisions and actions on the part of the learner. Specifically, challenge and complexity will increase by presenting situations that require learners to react to a growing number of stability, support and security operations situations in which they must exercise a progressively larger number of meta-leadership capacities in order to complete missions successfully. For example, while an early scenario may focus primarily on successful performance in the roles of Intelligence Gatherer and Insurgents' Threat Assessor latter scenarios will require simultaneous, effective enactment of these two roles along with additional roles such as Strategic Thinker/ Diplomat and Negotiator to complete missions successfully. Interacting initially with simple scenarios involving a limited number of knowledge and skills provides learners with the opportunity to consolidate their understanding of these concepts and see how they can be applied in simple real-life situations. Additional advanced scenarios would require learners to demonstrate more meta-leadership competencies such as Role Modeling, Performance Management and Delegating in addition to successful enactment of specific roles in order to complete missions successfully.

Assessment

Assessment of officers' effectiveness in enacting specific roles or utilizing meta-leadership competencies and feedback concerning their learning progress should be provided through multiple channels. First, trainees will be able to judge their own effectiveness based on the consequences of their decisions and actions built

[4] Certainly, non-commissioned officer academies could also make use of such a leadership program as well.

into a scenario. Thus, officers will be able to observe whether their actions led to the successful completion of a mission or to new unintended problems. Next, interactive after action reviews at the end of modules will enable officers to assess their effectiveness in performing specific roles and in demonstrating specific meta–leadership competencies. Additional assessment procedures will involve feedback given during after action discussions, between modules, from others who acted as followers or peers of the learner during the simulation.

Support

Support can be ensured through development of assessment and feedback discussion facilitation tools that focus on specific behaviors and avoid overall/generalized judgments of the person's capacities or personality. The progressive nature of the learning environment will build efficacy, optimism, hardiness, and courage as trainees begin to succeed in more and more difficult scenarios.

The Value of Virtual Training Environments

Any new leadership training program must involve a mix of group classroom and learning lab exercises as well as individualized computer-based simulation. Computer-based simulations are rule-governed, goal-focused, microcomputer-driven activities that incorporate principles of gaming and computer-assisted instruction (Driskell & Dwyer, 1984; O'Neil & Fisher, 2004). Simulations are based on models of reality, and as such attempt to represent a system, entity, phenomenon or process (Hays 2005). 'Microworld' is a term used to describe simulations that include relevant aspects of a phenomenon or a topic and allows learners to interact within the dynamic representation of this phenomenon in ways that enable the learner to see the impact of their actions (Hays, 2005; Papert, 1980). Participants are able to experiment with different choices representing a variety of tactics or strategies, and as a result, develop a better understanding of the phenomenon that the simulation attempts to represent. Simulations, therefore, provide a unique opportunity for participants to bridge the capacity to think in terms of newly learned theoretical frameworks with learning how to manage and respond to the complexity of actual contexts (Romme, 2003).

Computer-based training simulations have the potential to offer multiple benefits in comparison to full scale simulations or field training (Ross, Phillips, Klein & Cohn, 2005). These include portability, convenience of use, networking capability, and the flexibility to quickly modify and adapt to software enhancements as they become available (Morris, Hancock & Shirkey, 2004). PC-based simulations also offer the advantage of a low-cost, safe training environment where multiple training sessions can be held in a short time period and where technology can capture most of the learner's activities, thus providing opportunities for comprehensive feedback and after-action reviews (Ross, Phillips, Klein & Cohn, 2005).

Despite their apparent benefits, empirical research assessing the impact of instructional simulation is limited and inconclusive in results (Hays, 2005; O'Neil & Fisher, 2004). Research suggests that simulations can enhance learners' intrinsic motivation and interest in a task; improve thinking skills, including practical reasoning, complex problem-solving and engagement in inductive reasoning; potentially enhance meta-cognitive skills; improve complex real-world motor skills such as flying airplanes; and increase awareness of the complexity of specific tasks (O'Neil & Fisher, 2004).

Reviews of simulation technology research (O'Neil & Fisher, 2004) as well as research addressing the impact of all types of instructional simulations used in the work place (Hays, 2005) have focused primarily on technical and tactical decision making aspects rather than on the development of interpersonal and emotional facets of leadership roles that are central to developing officers to operate in asymmetrical operations. Our own search of the Psychological Abstracts Information Services (Psychinfo) failed to identify research focusing on the instructional value of scenario-based computer simulations aimed to develop the social or emotional dimensions of leadership skills. It is our assumption that the absence of such research reflects the scarcity of leadership development scenario-based training simulations that emphasize these key dimensions. We hope that the leadership training program described here will help close a gap in the leadership development simulation field. The program and its associated assessment tools are also likely to contribute to the military goal of evaluating the effectiveness of immersive technologies in promoting combat zone leadership development.

SUMMARY

The U.S. military is facing a new asymmetrical paradigm which requires leaders who hold human dominance over current and potential adversaries in addition to kinetic dominance. Establishing human dominance requires leaders to take on multiple roles and be adaptive to both differentiate and integrate those roles as necessary to accomplish their missions. To meet these challenges, leaders require a new set of competencies. Through our research and literature review we have developed a taxonomy of roles, tasks required to perform those roles, as well as various

leader competencies associated with those tasks. This paper presented a conceptual model that would underlie the design of a virtual, scenario-based leadership development training program aimed to develop the suite of competencies needed to prepare officers to lead followers effectively in the new asymmetric reality of joint, stability, and support and security operations. These competencies and the pedagogical approach to develop and assess each competency will be further developed in Phase II of this grant project.

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