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Abstract

This paper describes values-based network leadership conceptually aligned to systems science, principles of networks, moral and ethical development, and connectivism. Values-based network leadership places importance on a leader's repertoire of skills for stewarding a culture of purpose and calling among distributed teams in a globally interconnected world. Values-based network leadership is applicable for any leader needing to align interdependent effort by networks of teams operating across virtual and physical environments to achieve a collective purpose. An open-learning ecosystem is also described to help leaders address the development of strengths associated with building trust and relationships across networks of teams, aligned under a higher purpose and calling, possessing moral fiber, resilient in the face of complexity, reflectively competent to adapt as interconnected efforts evolve and change within multicultural environments, and able to figure out new ways to do something never done before.

Introduction

Values-based network leadership involves the application of skills associated with establishing, aligning, and sustaining a culture of higher purpose and calling suitable for an interconnected world. A values-based network leader advocates respect and understanding of diverse peoples and accentuates the need for cross-cultural appreciation and education. Within multicultural environments people can collectively learn in practice, interactively adapt, and interdependently perform among networks of teams for cohesive effort made possible by virtues, trust, and relationships. Effective use of leadership in multicultural environments requires a level of awareness of differences across cultures and a willingness to accommodate (Victor, 1992, p. 171). Accommodation, in this sense, involves deliberate and reflective practice suitable for establishing shared virtues and trust-based relationships within multicultural environments.

Values-based network leadership can be used to help organizations adapt to realities of the digital age involving the growing need for interdependent effort among distributed teams operating in an interconnected world. An interconnected world presents attentive leaders with fullness of claim and responsibility for bringing together distributed teams and aligning interdependent effort under a shared higher purpose and calling made possible by virtues, trust, and relationships. Readings of social signs in the digital age, however, suggest a paradox: as the technological means for interconnectivity grows, the gap between the tribal “us” and the other “them” can widen. Leaders face the paradox daily- even on the local level. For example, leaders successful with collaborative effort among existing teams, exhibiting trust among members, can encounter disappointment when an effort requires new collaborations with “other” teams whose members are not trusted by existing teams. In such cases, involving a mixed network of “us” and “them” teams, it is common for the network of teams to operate fairly independently. Consequently, attempts can be made by leaders to “sum the independent parts” for the greater good in the absence of mutuality. More likely than not, obtaining satisfactory outcomes from “summing the parts” is less likely in the absence of genuine dialogue made possible by mutual relationships required for shared sense making and aligned interdependent effort. Shared sense making arises through genuine dialogue between networks of teams. It is here in the network space between “us” and “them” that insights on the nature of genuine dialogue, offered by Martin Buber, are most helpful for understanding the moral elements of a higher purpose and calling associated with values-based network leadership.

Buber (1947) spoke of a longing for *quantum satis*, the “satisfying quantity” of mutual relationships in alienated spaces commonly experienced among work colleagues in contemporary society (pp. 35-44). Honesty and an open spirit to communicate without reserve to colleagues, are moral elements for genuine dialogue (Buber, 1947, p. 40). Buber placed responsibility on the leader for the practice of moral elements (1947, p. 44). Ultimately, in the same line of thought first articulated by John Dewey (1922), the interpenetration of these moral elements in the culture of organizations need to be practiced for forming unified character necessary for self-control regardless of the presence of outer control. This is at the heart of values-based network leadership. The full promise of networks of team rests in the unification of “us” and “them” through trusting relationships grounded upon unified character. The nexus of interdependent effort IS unified character.

The means to establish and sustain interdependent effort has long been a challenge faced by

leaders for generations when the theatre of operations involves dispersion of effort. Military leaders across history, speak to this blunt reality; the mere fact people can perform well under concentrated organizational boundaries does not mean they are equal to their tasks when having to fend for themselves or forces are dispersed. A common illusion presented by capabilities offered by the networked world to today's leaders is the belief that access to digital communication and collaboration tools are sufficient for interdependent effort by dispersed teams. In the case of dispersed teams operating across virtual and physical spaces, the use of digital communication and collaboration tools are necessary but not sufficient for effective interdependent effort. Carl von Clausewitz insightfully pointed to what is necessarily sufficient for interdependent effort when he spoke of "military virtues":

Military spirit always stands in the same relation to the parts of an army as does a general's ability to the whole. The general can command only the overall situation and not the separate parts. At the point where the separate parts need guidance, the military spirit must take command...What is missing here must be made up by military virtues (p. 145).

U.S. military leaders continue to validate Clausewitz's insights on the importance of military virtues regardless of advancements in technology and growing means for command and control across complex joint or coalition structures spanning the globe. Since Clausewitz's time, research has been conducted on the cognitive and behavioral aspects associated with the development of virtues and their daily use via habits of mind guiding values-based practices.

With an unprecedented expansion in communication channels due to rapid advancements in digital technology, interconnectivity may be enhanced, but true, moral leadership and meaningful discourse may not. This paper addresses the challenges, theories-using the US military as an example, albeit with worldwide implications and lessons to be learned and appropriately synthesized for all. A framework is offered for leaders to help situate their leadership practices in an interconnected world sufficient for values-based interdependent effort among dispersed teams. Values-based network leadership is closely tied to interdependent leadership behaviors outlined and investigated over the years by the Centers for Creative Leadership (McCauley, et al., 2008). Increasingly, leaders of civilian and military organizations have to practice leadership beyond the boundaries of their local teams and organizations to accomplish tasks and larger missions dependent on collaborative effort by networks of teams widely dispersed around the globe. Today, much of the effort by networks of teams is accomplished through the mixed use of virtual and physical tools and environments which introduces leadership challenges in how best to address the issues and opportunities introduced by network effort for offering new or expanded capabilities.

Effective networking of teams depends upon alignment of interdependent effort, trusting relationships, and quality of interactivity among teams. The complex challenge facing leaders of networks of teams is that most existing teams bring little to no experience working closely with other teams outside of their immediate organizational boundaries. So, today's leaders face not only challenges associated with strategically aligning efforts among networks of teams for success, but also show how to prepare people to effectively perform and thrive in a global environment under perpetual construction from bifurcation of ideas and interactions (Stacey, 2003). In essence, leaders of networks of teams are leading complex adaptive systems highly dependent on strategies of interaction with each other. Unfortunately, many of today's leaders are not well prepared for leading complex adaptive systems on a global scale.

And, few networks of teams' cultures offer the means for participants to continuously learn in practice, grow, and thrive in complex adaptive systems. This paper addresses both challenges for leaders and recommends support for learning in practice among networks of teams. Placing emphasis upon learning in practice among networks of teams calls for rethinking about the design of educational experiences reliant upon inflexible circular structures and courses.

A Closer Look at the Challenges Facing Leaders in an Interconnected World

Today's leaders are leading organizations consisting of people facing greater challenges in how best to stay current with knowledge and skills in the face of rapid change, growing complexity, and nearly constant exposure to new and diverse ideas, concepts, and rapid information flow across a variety of networks. Large organizations, many of which operate on a global scale, depend on high-performance teams virtually working interdependently with other teams to effectively address fluid, complex, and unpredictable challenges. Performance among networks of teams is determined by the degree of shared understanding and trust among teams established from the quality of relationships.

Future learning environments can be designed to integrate with distributed working environments supporting networks of teams so members can learn in practice in ways closely aligned with a networked world wherein trust-based relationship interconnection is increasingly necessary to effectively engage in shared sense-making, problem solve, and perform by pooling knowledge and interacting on a deeper level for synchronization of effort across organizational boundaries. Learn-in-practice environments provide learners the means to be able to observe how their influence, insights, and contributions ripple and impact connected effort among network of teams. Such environments can be designed for supporting open-boundary connections among network of teams spanning organizations suitable for collaborative culture, collective learning, shared sense-making, and effort with capabilities to operate on a global and massive level.

John Seely Brown advocates for new learning environments suitable for a networked world (Brown, 2006). He recommends future learning environments evolve to take on features associated with open ecosystems, to better support how people connectively learn in a digital age via communities of practice making use of open networks. In the networked world, learners can engage in shared sense-making and collaborative learning through informal and formal channels spanning work, home, and distributed locations. This paper highlights the application of insights obtained from recent military experiences with networks of teams for usage by leaders to leverage the benefits of open-learning ecosystems for learning in practice, *in situ*, suitable for performing in a networked world. The kind of learning required to effectively operate in a networked world, is not just a mental process or mechanical habituation. Rather, it involves the development of practices and abilities to negotiate meaning with others in contexts of unfolding, multidimensional complexity. Today's learners need to be able to tune their practices to successfully perform in a networked world constantly in flux and requiring adaptations to get the job done. Of all of the characteristics of a collaborative culture necessary for operating in a networked world, perhaps the one most central to making a successful transformation is collective learning — valuing it and becoming proficient in it. In many ways, collective learning represents the essence of becoming a more collaborative culture (Hughes & Stricker, 2009).

A Framework for Learning in Practice in an Interconnected World

A variety of learning theories – e.g., behavioral, cognitive, and constructivism – can be used to help inform the design of environments suitable for learning in practice. Along with theories of learning, moral and ethical developmental models are also important to better inform designs supporting growth in moral reasoning and ethical behaviors. Also, research in social intelligence and situated learning in communities of practice is useful (Goleman, 2007, 2011; Wenger, 2006). Importantly, selective use of any one learning theory for application by a learn-in-practice environment *is not sufficient to fully prepare and sustain a collaborative culture for networks of teams to collectively learn and operate in a networked world*. Rather, a framework is needed to integrate, employ, and adaptively apply benefits offered from across learning theories and development models with the means to differentially support a variety of ways people and teams can connect and collectively learn from one another while engaged in practice, *in situ*, with the networked world. Such a framework would need to have properties more in line with open ecosystems operating in natural environments than closed systems operating in isolation. A learn-in-practice environment, designed as an open-learning ecosystem, can be employed for *in situ* usage by networks of teams to better address the kinds of complex challenges encountered in a networked world. Digital-age technology is increasingly defining and shaping how people think, connect, and communicate with one another, learn informally in communities of practice, problem solve with others in the context of real-life practices, and successfully adapt as a member in evolving social structures across the intersecting domains of private and public life experiences (Calongne, Sheehy, & Stricker, 2013). George Siemens (2005), and colleague Stephen Downes, offered an open and connective learning framework suitable for today's learners in a network world, termed “connectivism,” wherein it is recognized that learners shape the environment in positive ways for supporting sense making in the context of real-time dynamic interactions with others:

Connectivism presents a model of learning that acknowledges the tectonic shifts in society where learning is no longer an internal, individualistic activity. How people work and function is altered when new tools are utilized. The field of education has been slow to recognize both the impact of new learning tools and the environmental changes in what it means to learn. Connectivism provides insight into learning skills and tasks needed for learners to flourish in a digital era.

Siemens and Downes formed their learning framework on the basis of insights arising from systems and network sciences whereby the capacity of organisms, people, and organizations to form connections between sources of information to better self-organize and adapt to change is the hallmark of growth, survival, and competence. Also, beyond survival, the fluidity and ways in how people interconnect with diverse fields of knowledge and viewpoints, opinions, and disparate ideas is the touchstone of creativity and innovation. Educators can use connectivism for helping to transform learning experiences necessary for today's learners to flourish in a digital and interconnected world. Connectivism is best described as *learning [occurring] through connections within networks. The model uses the concept of a network with nodes and connections to define learning. Learners recognize and interpret patterns and are influenced by the diversity of networks, strength of ties and their context. Transfer occurs by connecting to and adding nodes and growing personal networks* (Downes & Siemens, 2005). Siemens (2005) offered the following principles of connectivism:

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.

- Learning may reside in non-human appliances [e.g. AI-enabled appliances].
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Synchronicity of Insights from Military Wartime Experiences with Connectivism

The principles of connectivism ring true from the experiences of U.S. military leaders seeking to understand and effectively address the advantages they perceived from the organic nature and movement of Al Qaeda in Iraq. They noted that Al Qaeda forces’ “extremely fluid, freely designed operational structure helped ensure that the narrative of their leadership consistently permeated their distributed membership, enabling their rank and file to move with speed and individual initiative, collaborating with one another and aligning their otherwise-isolated actions with one another’s efforts, free from formalized approval chains” (Fussell & Goodyear, 2017, p. 15). In the book *One Mission: How Leaders Build a Team of Teams*, authors Chris Fussell and Charlie Goodyear address the insightful realization among U.S. military leaders that while the forces under their command offered “excellence, talent, and capability.” Al Qaeda offered a “uniting calling.” The contrast was stark: the U.S. forces were an ordered machine equal only to the sum of their parts - operating strictly from directive strategy from within bureaucratic tribal-like walls that blocked ability to communicate, collaborate, and trust with global implications. Simply put, U.S. military leaders recognized they had to shift the isolated, tribal-like team culture of U.S. fighting forces to one where teams trusted other teams and were encouraged to form organic interpersonal relationships, share information, and dynamically interact under an “aligning narrative.” It is important to point out that U.S. military leaders in Iraq were grappling with how best to help networks of teams rapidly learn, in an environment involving the close interaction of order and chaos, to best align the needed changes within the context of military command and control hierarchies. To better understand the challenge, it is helpful to examine Anne-Marie Slaughter’s (2017) comparison of common characteristics between hierarchies and networks offered in *Table 1* below (p. 51-52).

Table 1: Comparison between Hierarchies and Networks

HIERARCHIES	NETWORKS
Centralized	Distributed
Fordism: workers perform specialized tasks	Flexible specialization: small-scale production teams simultaneously work on
Employee traits: deference to authority, obedience, conformity	Employee traits: autonomy, adaptability, problem solving, collaboration
Ties are strong but few	Ties are loose but many

Tasks, managers, and departments are organized by function	Tasks, managers, and departments are organized by project
Communication is vertical command through defined channels	Communication is lateral as well as vertical consultation
Management derives authority from title, rank, and seniority	Management derives authority from expertise and contribution
Job descriptions and areas of control are narrowly defined	Job descriptions are broad and boundaries are permeable
Transaction and payment are the glue of relationships	Trust and reputation sustain relationships
Key decisions are centralized so coordination costs are low	Decentralized decision making, so higher employee satisfaction and loyalty
Performs well in stable, predictable environments	Performs well in ambiguous environments that require efficiency and flexibility

As suggested by Siemens's connectivism principles, along with Anne-Marie Slaughter's comparison of hierarchical and network organizations characteristics, U.S. military leaders in Iraq wanted the benefits of connective networks while maintaining necessary elements of military command and control. The importance of "getting it right" was imperative for improved military operations. Forces needed to connect and interpret their collective information sources, nurture and maintain their connections across teams and organizational boundaries to successfully adapt to the shifting "alterations in the information climate affecting their decisions." By doing so, US-led coalition forces were able to appropriately address conditions rapidly encountered on the battlefield with greater speed and decentralized autonomy.

Leading Network of Teams: The Power of an Aligning Narrative

U.S. military leaders in Iraq, making use of connectivism principles, decided to apply an aligning narrative. They soon harvested the fruits from their efforts with improved military operations, as shared by Fussell and Goodyear: "[O]ur teams on the ground could move and adapt faster than the leaderless insurgent cells they faced on the battlefield" (p.18). They continue to share the overall transformational effect: "Under the pressure of war and seemingly insurmountable challenges, we'd transitioned from a coalition who capability was simple the sum of its parts to a cohesive enterprise driven by trust-based relationships. Most importantly, each of us evolved in our views from a tribal, small-team optic to a newfound feeling of higher purpose and calling" (p. 19). The use of an "aligning narrative" by senior U.S. military leaders proved essential to override individual and unit narratives to help align everyone towards a shared understanding offering credibility for more speed and decentralized autonomy with the means to keep aligned with overall strategy and effort. The aligning narrative was expressed with the following simple equation (Fussell & Goodyear, p. 17):

$$\text{Credibility} = \text{Proven Competence} + \text{Integrity} + \text{Relationships}$$

Fussell and Goodyear highlight that the competence and integrity factors in the above equation of the aligning narrative were not the limiting factors when U.S. military forces needed to quickly and flexibly address rapid enemy adaptations. Rather, the greatest limiting factor turned out to be relationships represented by poorly interconnected teams. Even though U.S. military teams were made up of very selective members possessing strong moral fiber they were missing the relationships through which proven competence and integrity could be discerned and trusted to convincingly establish credibility with decision makers and with each other. Military leadership recognized the relationships needed to extend “far beyond those already established among members of the same unit and reach those on other teams and in critical partner institutions” (Fussell & Goodyear, p. 18). Using the aligning narrative, U.S. warriors were encouraged to interconnect, expose themselves to other closely-held viewpoints across teams and organizations, and transform the connections into tangible operational benefits for each team. The means to harvest similar transformational effects for helping to prepare future leaders is offered by thinking about the benefits of applying connectivism principles in the design of open-learning ecosystems. *Figure 1* illustrates a model for helping to guide the use of an aligning narrative for shaping future learning environments. The model depicted in *Figure 1* expands upon the narrative used by U.S. military leaders in Iraq to help highlight the association between factors of the original equation (*Credibility = Proven Competence + Integrity + Relationships*) to key learning elements for shaping warrior identity and performance in the Profession of Arms.

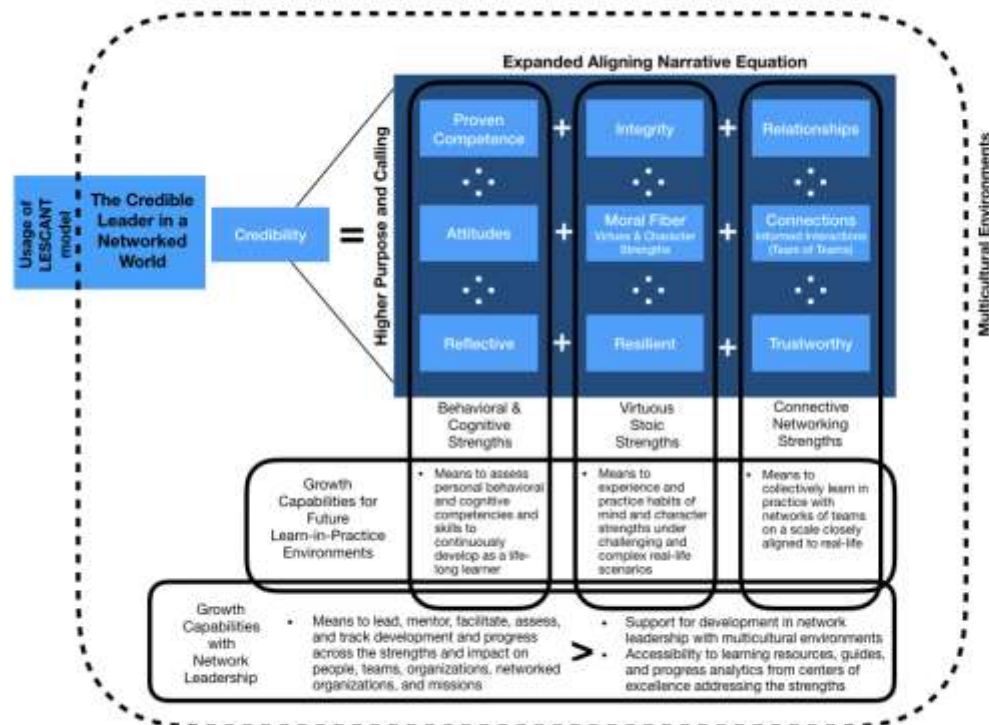


Figure 1. Expanded aligning narrative in context of multicultural environments.

The expanded model depicts a way to think about and associate the contributions offered by behavioral, cognitive, ethical, and connectivism theories for developing credible U.S warriors

for the 21st century. Each factor of the expanded model is briefly discussed below as it relates to the original equation put into use by U.S. military leaders in Iraq. Growth capabilities are also offered under each developmental strength area for consideration in the design of future learning environments and for supporting leaders in the use of the expanded aligning narrative for force development in an interconnected world.

Factors Associated with Behavioral and Cognitive Strengths

Attitudes. This factor addresses the close association between “skill and will.” The role attitudes play with willingness to engage and take action in the use of skills is paramount for establishing and strengthening proven competence. Educators pay attention to the association between skill and will by addressing affective learning in the design of learning environments:

Affective learning involves the melding of thinking and feeling in how people learn. Importance is placed on social learning environments for knowledge construction and application wherein deeper awareness and understanding of the role played by mental dispositions in how a person views, engages, and values learning can result in better understanding and use of knowledge and skills. Learning outcomes are focused on enculturation of norms, values, skillful practices, and dispositions for lifelong learning (Stricker, 2009).

Reflective. With respect to the Profession of Arms, learners can expect an encounter of fog and friction in modern warfare. In such cases, success is very likely to arise from a willingness to consider alternative courses-of-action that can challenge existing beliefs. Cognitively, it can be very difficult for military leaders to let go of existing beliefs – no matter how successful those beliefs have worked with past courses-of-action. Argyris (Argyris & Schön, 1974) speaks of the willingness to suspend deeply held beliefs and engage in the consideration of alternative courses-of-action as double-loop learning (p. 19). Conversely, Argyris describes single-loop learning as the use of one’s current beliefs, and related actions, routinely applied in day-to-day practices (p. 18). Single-loop learning works most of the time for routine or stable environments. Interestingly, when practitioners are faced with unique or unstable environments, sole reliance on single-loop learning can often go unchallenged even in the face of mounting evidence that continued use of existing beliefs, and related actions, are not resulting in desired outcomes (pp. 18–19). Thus, there is the need to offer military learners opportunities to experiment with reflection-in-action to learn how to recognize and respond when single-loop learning ought to shift to double-loop learning. It is worthwhile to quote Schön’s fuller description of a professional practitioner engaged in reflection in action:

When a practitioner reflects in and on his practice, the possible objects of his reflection are as varied as the kinds of phenomena before him and the systems of knowing-in-practice which he brings to them. He may reflect on the tacit norms and appreciations which underlie a judgment, or on the strategies and theories implicit in a pattern of behavior. He may reflect on the feeling for a situation which has led him to adopt a particular course of action, on the way in which he has framed the problem he is trying to solve, or on the role he has constructed for himself within a larger institutional context. Reflections-in-action, in these several modes, is central to the art through which practitioners sometimes cope with the troublesome ‘divergent’ situations of practice. When the phenomenon at hand eludes the ordinary categories of knowledge-in-practice, presenting itself as unique or unstable, the practitioner may surface and criticize his initial

understanding of the phenomenon, construct a new description of it, and test the new description by an on-the-spot experiment (Argyris & Schön, 1974, p. 62).

Schön's description of reflection-in-action is particularly relevant to modern warriors facing increasingly divergent or asymmetric forms of warfare wherein appropriate and effective courses-of-action often need to be determined in situations involving high levels of uncertainty and time pressures may require action before complete information can be gathered or a comprehensive plan is put into operation. Such demands on the modern warrior require experience with such situations before encountered in actual warfare. U.S. military learners need opportunities to experience and experiment with difficult situations requiring decisions in real-time under circumstances involving incomplete, uncertain levels of accuracy, or missing information (Stricker, Arenas, Westhauser, & Hawkins-Scribner, 2017). Reflection-in-action, in a networked world, also involves consideration of action in the context of multicultural environments. As discussed previously, usage of the LESCANT model helps to better reflect upon and consider the culturally linked variables of language, environment and technological considerations, social organization, contexting, authority conception, nonverbal communication, and temporal conception (Victor, 1992, p. 246).

Factors Associated with Virtuous Stoic Strengths

Moral Fiber. Developing moral fiber of U.S. warriors serves as a guiding principle for military training and education. Moral fiber is developed with emphasis placed on Stoic virtues offering the means to temper control with forgiveness. Temperance also applies to balance warrior drive and achievement with humility and wisdom. Moral instruction of U.S. warriors provides the ethical foundation from which values such as loyalty, duty, respect, selfless service, honor, integrity, and personal courage become associated with identity and virtuous behaviors in the Profession of Arms. Research on virtues, and related character strengths, can inform how to instruct and embed within the warrior habits of mind associated with stoicism for facing the hardships of military life and service. This factor places importance on virtue and the training of the soul, for developing character strengths cultivated as a kind of mindset for a stoic warrior to endure the harshest of circumstances brought by war (Stricker, Arenas, Westhauser, & Hawkins-Scribner, 2017).

Resilient. This factor is heavily influenced by a warrior's moral fiber. More than ever in the history of warfare, war fighting can rapidly span across mental, economic, social, cultural, religious, and political systems shaping and influencing uncommon and complex battle spaces. Twenty-first-century warfare requires a warrior to understand the importance of and means to possess a repertoire of ways to strengthen their physical, mental, and moral stamina to be better at facing high levels of uncertainty and complexity in modern warfare. Resiliency requires lifelong developmental effort by warriors to holistically strengthen and sustain physical, mental, and moral healthfulness.

Factors Associated with Connective Networking Strengths

Connections. This factor is more likely than the other factors, in the expanded aligning narrative, to be overlooked for appropriate developmental focus in the context of real-life military settings wherein trust-based relationships across teams is paramount. On the surface, it might be assumed that offering the means for military learners to problem solve together in teams on location at a schoolhouse is sufficient. What is likely to be overlooked, however, is the importance for learners to engage in problem solving most likely to be encountered in real-

life military settings via combinations of physical and virtual connections among teams, often involving unfamiliar units or institutions, and in many cases among teams distributed geographically and operating across different time zones (on a scale similar to actual military settings and joint operations). Also, there are digital literacies associated with the means to effectively discern and appropriately use digital tools to establish and sustain effective collaborative effort in networked environments. This is especially true when performing in real-life hybrid situations involving combinations of onsite and distributed teams. Such situations call for U.S. military members to adjust appropriately in how information is effectively collected, interpreted, communicated, shared, and used for effective problem solving across physical and virtual spaces. Impactful outcomes by networks of teams are dependent on connective networking strengths.

Trustworthy. U.S. military leaders in Iraq found that trust-based relationships were the vehicle from which the other factors in the aligning narrative equation came to be proven among teams with one another for the establishment of credibility far beyond each member's team and organization. Trust-based relationships transformed the capability of units from the sum of its parts to a cohesive enterprise possessing a higher purpose and calling with the means to respond quickly to a shifting environment (Fussell & Goodyear, 2017, p. 18). In the words of a participating U.S. military member:

Human-to-human connectivity and true strategic alignment had been established across our enterprise's teams and around the globe, binding thousands of people from unique and different tribes to a purpose that changed in scope and complexity almost every day. This new culture allowed our enterprise's teams the space to react with speed and autonomy to the unpredictable challenges thrown our way every day. We were thousands of professionals around the globe, but shared the intimacy of a small team sitting around a table...our organization had become whole: we were many teams, freely operating and engaging with one another in the pursuit of one mission. We often put other, once-rival tribes ahead of ourselves and knew they would do the same for us...I would miss more than anything else once I departed for home — a many-leagues-deep interpersonal trust, scaled across an entire enterprise through carefully facilitated, informal, intertribal relationships, that complemented our preexisting bureaucratic norms (Fussell & Goodyear, 2017, p. 23).

Growth Capabilities

The expanded aligning narrative offers a way to think about how identified strengths, targeted for force development, can be holistically addressed for improving how people learn in practice in an interconnected world. A few growth capabilities are offered for consideration across the strength areas to highlight their importance.

Behavioral and Cognitive Strengths. It is important to empower learners with the means to be actively engaged in self-assessment and enabled to address developmental goals across their continuum of service. Future learning environments need to offer learning progress dashboards, the means to collect and organize important assessment and progress reports, outlining their longitudinal development in the form of portfolios, with prescribed learning pathways uniquely tailored for them on the basis of developmental needs and growth plans. The means to offer such capabilities is determined by the use of learning analytics making use of collected learning data on a scale necessary for handling big data, analyzing trends, and intelligently prescribing and adapting learning pathways for enabling deep learning with

precision across an entire span of service.

Virtuous Stoic Strengths. Research on ways to develop virtues and character strengths and their use in habits of mind has proven helpful for shaping better leadership practices (Costa & Kallick, 2014; Sosik, Gentry, & Chun, 2012). Research points to the importance of developmental focus in the practice of character strengths using real-life scenarios (Costa & Kallick, 2009). And, research highlights the need to continuously learn about the use of character strengths in changing contexts of practice and roles as a person matures and takes on different leadership responsibilities over their professional lifetime (Gentry, Cullen, & Altman, 2016; Sosik & Cameron, 2010; Sosik, 2006). Similarly, in the Profession of Arms, a credible warrior in a networked world that changes rapidly requires a set of guiding values to be successful. For example, core values provided by the United States military services offer a foundation that empowers a cohesive effort of individuals guided by purpose. Common core values such as loyalty, duty, respect, selfless service, honor, integrity, and personal courage act as a guide to individuals and reinforce habits of mind that build moral courage and trust. They aim to create a culture that makes belief in collective action possible. Leading, adapting, and learning in a networked world requires individuals to have moral courage, trust, and belief in a united purpose. Core values in the Profession of Arms profession of arms give individuals a foundational guide to be successful in a rapidly changing networked world through collective and collaborative effort united by a culture of trust and driven by the purpose of a nation.

Connective Networking Strengths. The biggest challenge ahead for addressing these strengths in future learning environments is the means to offer ways for learners to engage in team of teams networking, across virtual and physical spaces, on a scale realistically similar to real-life practices associated with interdependent and collaborative problem-solving challenges. Another set of challenges is related to unsuitability of existing geography-restricted infrastructures and frameworks employed in current formal learning environments (involving the use of closed networks and inflexible curricular structures organized around courses). On one level, future learning environments should functionally offer global communication and IT infrastructures with the means to provide access to collective expertise of a globally distributed team. On another level, future learning environments should be designed as open-learning ecosystems involving properties better aligned to the needs of people learning and performing in a networked world. For example, the guiding design nexus for open-learning ecosystems is based on the science of relationships. Importance is placed on the means for learners to learn in an interconnected community sustained by a web of relationships. In an open-learning ecosystem, learners can better learn about and experience networks of teams. And, with in-situ usage of an open-learning ecosystem, the fabric of professional identity and practice becomes a resilient learning community in which all participants are interlinked in a network of relationships - all working together and learning continuously.

Growth Capabilities for Networks of Teams' Future Leaders

Leaders are instrumental for the effective use of an aligning narrative by ensuring consistent engagement with and communication of the narrative across all levels of the organization. Leaders need to steward a culture of trust, transparency, and willingness to take greater risks necessary for supporting development and progress across the Stoic strengths. Two growth capabilities stand out for assisting leaders in this role:

Development of Network Leadership in the Use of Aligning Narratives. There is a learning

curve associated with values-based network leadership necessary for developing a shared consciousness among people and teams around the factors of an aligning narrative. Leaders need to understand and discern the importance of habits associated with connected networking (e.g., ways to connect teams across organizational boundaries and steward synchronization of effort), the type of communication, information sharing, the interpretation and use of learning analytics to assess progress, and the impact on organization and mission levels. Leaders also need to understand how to engage their staffs in the supportive use of an aligning narrative and in the cultivation of an open-learning ecosystem within their organizations. This should be shared with other organizations for networking teams to collectively learn and contribute to the larger mission. Leaders also need to know ways for helping to establish and sustain a collaborative culture involving the use of connected networks among people and the anticipated effects that normally evolves informally with and across an organization's formal structures (Capa & Luisi, 2016). Anne-Marie Slaughter (2017) describes the “five Cs” which highlight common skills and attributes associated with network leadership (pp. 186-197):

Clarify: Leadership begins with the clarification of goals for accomplishing collective purpose. The usage of an aligning narrative by leaders helps to continually remind and refocus network members.

Curate: Curating members and resource availability of a network requires careful planning by leaders. For example, innovation networks benefit from deep and wide ties, as well as formal and informalities.

Connect: Leaders need to be skilled at connecting people to each other and nurturing a culture of participation and sharing.

Cultivate: Network leaders diligently cultivate and tend to relationships. Leaders discern the importance of trustful relationships for holding together networked teams. Network leaders also cultivate an ethical culture, delegate and empower groups of leaders focused on bringing diverse people together and addressing tensions for the common good.

Catalyze: A network leader requires uncommon abilities of persuasion. “The chief attribute necessary to persuade, however, is neither command of facts nor rhetorical gifts. The first step toward persuading others is an evident and sincere willingness to be persuaded yourself.”

David Victor’s (1992) LESCANT model offers key cultural areas for deliberate and reflective practice by leaders with the above “five Cs.” LESCANT is an acronym for seven variables likely to shift across cultures: Language, Environment and Technology, Social Organization, Contexting, Authority Conception, Non-Verbal Behavior, and Temporal Conception (Victor, 1992, p. 14). Sensitivity and responsiveness by a leader to each LESCANT variable helps guide the development of trust-based relationships essential for enculturation of shared virtues necessary for cohesive effort in multicultural environments. Each LESCANT variable is briefly interpreted below for leadership with multicultural environments in an interconnected world (Victor, 1992):

Language: Use of language carries social implications of belonging to a common group that for many cultures establishes the trust necessary for relationships. Language reflects cultural assumptions and influences thought. In reflective practice, a leader is aware of the role played by language to connect people, cultivate relationships, and persuade. A

credible leader in a networked world will need to communicate difficult concepts to general audiences in an easily understandable multicultural-aware narrative form.

Environment and Technology. Leaders may not recognize environmental factors as culturally subjective. The way people relate to each other at work, in their community, and with family is largely, if not overwhelmingly, determined by the nature of the technology employed, how it is employed, and the social relations that govern its use.

Social Organization. This variable addresses common institutions and collective activities shared by members of a culture. The practice of social values by members of a culture are reinforced by a number of social structures such as kinship, family, community, education, economic stratification, religion, political, to name a few. Effective network leadership considers the role served by social structures in the practice of social values. Another element to note with social organization is the degree to which cultures place value on the continuum between individualism and collectivism. In individualist cultures, for example, people tend to identify weakly with the groups to which they belong. On the other end of the continuum, collectivistic cultures place a higher premium on group membership and loyalty. A leader in multicultural environments will need to address both ends of the continuum to successfully steward interdependent effort involving networks of teams.

Contexting. This variable supports the notion of behavior and how participants in the network think about rules based on low or high context. An example of how context affects decisions relates to the question *when is it reasonable to violate a rule?* A high context culture examines the situation before making a decision whereas a low context culture feels strongly about following rules, even when they are not applicable to the situation. Critical thinking and problem-solving benefit from understanding how context impacts leadership and the world view.

Authority Conception. There is considerable cross-cultural variability of how authority is conceived on the basis of power perception and leadership style. Authority is the power to direct the actions of others as well as the actions taken by a leader, via leadership styles, to cause others to do what is desired on the basis of perceived meaningfulness of the action. The relationship of power and leadership is inseparable from culture in practice. Network leadership in multicultural environments may involve accommodation to the degrees of differences between Western conceptions of power (power is bestowed through title or position) and in Asian cultures where power conception is embedded in its social setting and in individuals rather than the offices held.

Non-verbal Behavior. This variable acknowledges that the amount of information people communicate nonverbally exceeds what they communicate by using words. Consequently, network leadership taking place in environments offering no visual or verbal cues in communication will involve greater attention to how messages are more likely to be misinterpreted.

Temporal Conception. This variable addresses how a person understands and uses time. As is true with the other LESCANT variables, temporal conception is culturally influenced and socially reinforced. The decision on when to meet, how to allocate time during a meeting, and when to stop meeting sound like simple tasks, but cultural perceptions of time vary. How leaders perceive and share the fabric of space and time in network leadership requires sensitivity to cultural differences, and respect for world views framed by high and low context perspectives. One culture may find it disrespectful for a session

to exceed the scheduled time while another culture views it as the natural outcome of an excellent experience.

Access to Learning Resources, Guides, and Analytics Addressing the Strengths. Leaders need access to learning resources, guides, and analytics for each of the strength areas to help support their leadership role using an aligning narrative. Resources and guides need to be specifically developed for use in squadron and unit-level contexts involving on-station, deployed, joint environments, and also for other settings less formal outside of work areas. Leaders also need access to learning analytics depicting the developmental progress across the aligning narrative strength areas for helping them to assess and address impact on people, teams, organizations, and mission levels. Ideally, learning analytics ought to be provided to leaders in the form of longitudinal indicators for helping them to assess progress over time. Analysis of learning data should include prescriptive recommendations for leaders to help assist with their efforts in remediation, adjustments, and future planning activities. The means to support leaders with data-driven insights involves computing for data analysis on a scale necessary with the applied use of learning analytics by large organizations.

Use of Open-Learning Ecosystems for Networks of Teams

The use of an open-learning ecosystem for networks of teams offers participants a way to learn in practice while also providing the means for greater flexibility to transverse organizational boundaries. Networking infrastructure, tools, and resources evolve and are openly shared across organizational and cultural boundaries dynamically among participants as they collectively learn, adapt, and perform. Ultimately, open-learning ecosystems help networks of teams to thrive (see *Figure 2*). Open-learning ecosystems are well suited for supporting interconnected and inter organizational efforts dependent on the need to broadly connect, collectively learn together in practice, and interdependently work on complex challenges. Overall, high performance by networking teams is dependent on how well cross-fertilizing and spreading knowledge can openly and easily occur across teams. Leaders play a key role for helping people involved with networks of teams to better understand and benefit from the open processes and dynamic connections offered by an open-learning ecosystem. And, leaders will also need to help people understand how learning in practice, via an open-learning ecosystem, is different from formal learning environments. Learning in practice involves development of shared understanding, negotiation of meaning via open processes, and constant need to include new elements of complexity that are highly perturbable. Participation in networks of teams introduces for each person a tension between experience and competence when boundaries are crossed.

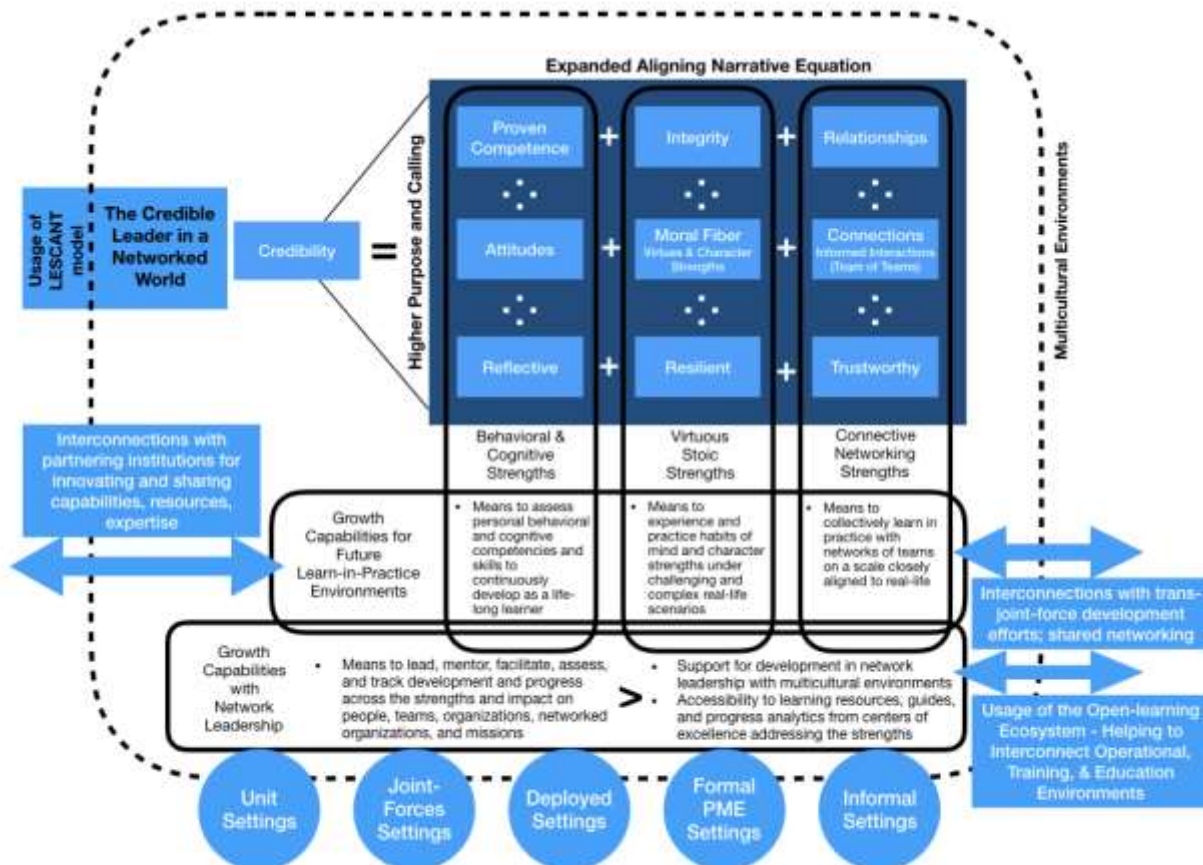


Figure 2. Open-learning ecosystem for supporting network leadership in the use of an expanded aligning narrative.

Although crossing boundaries helps to open up new areas interconnected with a person's specialty, it can also impair growth (impacting the means for participating with shared understandings) if willingness to reveal gaps in comprehension and obtain assistance is not forthcoming. New members to networks of teams are most likely to struggle with this issue and leaders need to be aware of indicators when a team member is not willing to seek assistance from networks of teams. Over time, participants in networks of teams need to learn how to self-reflect and benefit from an open-learning ecosystem.

A leader, by using an aligning narrative in the context of an open-learning ecosystem, acts as a strategist for sustained transformation of independent tribes towards networks of teams via a learn-in-practice culture. The learn-in-practice culture helps to deepen understanding of those involved with networks of teams that continuity of effective interdependent effort depends upon trust and relationships for collective learning, reflective adaptability, and resilience in the face of constant change (Stricker, 2017). Rooke's and Torbert's (2005) developmental leadership model, outlining seven transformations of leadership, is helpful for understanding values-based network leadership. A strategist operates at the higher sixth-level of thinking for a leader. The transformational strategists demonstrate consistent capacity to innovate and successfully transform their respective organizations by creating aligned and shared visions and fostering collaborative ecosystems and environments in the organization (Rooke & Torbert, 2005, pp. 5-6). **Comprehensively, values-based network leadership involves the use of systems and design thinking to adaptively align a complex ecosystem of interrelationships and synergies between areas of expertise involving networks of teams. In**

the strategist role, under values-based network leadership, a leader pays attention to the evolving pattern of relationships in networks as a living system involving continual adaptations aligned with “living strategy” as conditions change.

The concept of a “living strategy” is useful to distinguish between linear and nonlinear patterns of strategic thought and effort. Nonlinear strategy factors assimilate complexity theory and emergence into strategic thinking and planning. Network leadership employs the use of “living strategy” to help guide and lead successful adaptations by networks of teams to accomplish difficult challenges in the face of complexity. Alignment of effort among networks of teams is driven in large part by the dynamics between cognitive and social dimensions from which members construct meaningfulness from the interconnectedness of rules of behavior, values, intentions, goals, strategies, and designs. Using “living strategy” a leader employs an aligning narrative to help construct and sustain a culture of shared meaningfulness among networks of teams to the importance of adaptations, collective learning, and collaborative excellence.

Conclusion

Values-based network leadership builds upon the interdependent leadership behaviors outlined and researched over the years by the Centers for Creative Leadership (McCauley, et al., 2008):

- Soliciting diverse or fresh perspectives from others;
- Facilitating or seeking shared sense-making, co-constructing direction, alignment, and/or commitment;
- Engaging in dialogue to explore differences;
- Actively managing polarities of diverse perspectives;
- Openness to revision and change of strategy or approach; and
- Engaging in self-authorized decision-making.

The leadership behaviors identified above, nearly 10 years ago, have only grown in importance as leaders increasingly lead teams that are inter-organizationally networked across virtual and physical locations. Effective performance by team networking is dependent on leaders helping to ensure a culture of unified character necessary for trust-based relationships wherein the differences between “us” and “them” are effectively reconciled for connective and aligned interdependent effort. Values-based network leadership employs a clear and aligned understanding of effort among networks of teams enabled and sustained by an environment suitable for collective learning in practice for in situ adaptations and growth.

This paper offered an introduction to values-based network leadership with suggestions for the use of an open-learning ecosystem highly suitable for helping leaders lead and sustain networks of teams. The implication of the suggestions offered in this paper is that most U.S. Department of Defense educational institutions do not currently address learning outcomes associated with networks of teams’ skills and practices that transcend particular courses and disciplinary boundaries. What would it look like if U.S. Department of Defense educational institutions were to design educational experiences less around which courses learners need to take and more to demonstrate enhancements in collective learning and network of teams’ skills necessary for an interconnected world?

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