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Design and the Prospects for Artistry

by Christopher R. Paparone and George L. Topic

Here, we would like to open a conversation about educating military practitioners, focusing more on the artistry of design (reflective practice) involving the “where,” “why,” and “how.” Through our normative stance (i.e. taking a “should” perspective), we hope the community of educators and senior practitioners are spurred to better appreciate what we argue are the more desirable professional qualities of artistry. To that intent, we admit we argue provocatively rather than seek to ratify the status quo. Our intent is not to suggest current practices in professional military education have no place in the future, but that they must be subordinated to greater scope and methods of design.

The difficulty and complexity of the post-industrial age national security enterprise at all levels is so profound and widely recognized that it is almost cliché to mention. Even as we focus on military practitioners, we see this predicament to be true for all specialties particularly as professionals in related national security fields reach higher levels of responsibility. Across the vast array of administrative and operational missions and functions that extend from the Pentagon to the farthest corners of the world, the professional military practitioner must be skilled in dealing with highly volatile, uncertain, complex, and ambiguous (VUCA) circumstances. The Department of Defense’s education community, for example, is working hard to meet the challenge of preparing future professionals for a high-VUCA world, including establishing several specialty schools, colleges, and universities to help shape the necessary skills. Yet curricula writers and faculty members remain challenged to move beyond an institutionalized educational philosophy that is intended to drive student learning experiences.

Do we have a crisis in our philosophy to educate military professionals? Our argument in this essay is, “Yes.” The crisis is not a matter of funding or other sorts of managerial attention and prioritization; rather, it relates to the professional military education (PME) community’s fixation on *technical rationality* – the belief that “practitioners are instrumental problem solvers who select technical means best suited to particular purposes.” **The issue we are addressing in this chapter is that the current system of PME will always show incongruence between real world practice and the "technical repertoires" that practitioners learn in school.** Our military professional education systems are based in students learning these technical means (the “what”) and when they operate in the “real world” the idea is to rigorously match these techniques to a similar problem set; hence, solve through the application of technique.¹ If the practitioner is faced with a problem set that is too novel for those technologies, the science and technology research and force planning communities’ missions are to receive that feedback and come up with new or modified technical means (e.g., across the “DOTMLPF”²) to address it.

¹ Chris Argyris and Donald A. Schön, *Theory in Practice: Increasing Professional Effectiveness* (San Francisco: Jossey-Bass, 1980), p. 19.

² Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities are the standing solution sets to address issues from the field.

Our job in this essay is to expose this philosophy's flawed underlying assumptions and to recommend an alternative approach to national security education.

The military practitioner faces situations that are so unique and uncertain that relying on the application of technical knowledge alone is insufficient. In other words, the practitioner is faced with what Donald A. Schön calls an *indeterminate zone of practice*. On these occasions, practitioners call upon *artistry*, that is, a professional quality associated with:

...a kind of knowing, though different in crucial aspects from our standard model of professional knowledge. It is not inherently mysterious; it is rigorous in its own terms; and we can learn a great deal about it – within what limits, we should treat as an open question – by carefully studying the performance of unusually competent performers.³

In our view, this idea is profound and critical to envisioning an education system different from one based in the philosophy of technical rationality. Rather than framing education based in knowing (technical rationality), we argue that technique is always, to some degree, mediated by *artistry* – involving situational framing and improvisation-in-action.

Traditional Department of Defense (DOD) educational designs focus on the “what”—that is, developing competency maps, determining curricula content, setting measurable learning objectives, and publishing intricate plans of instruction that are believed to control the education process. The “what” is assessed by comparing desired standards of performance to actual student performance. Other qualitative aspects of professional military education seem to be of lesser significance, if considered at all. In many cases, the education experience appears to be focused primarily on technical rationality – providing students with “knowns” and applying them in the classroom or laboratory. While lessons of the past are thought to be a necessary ingredient to learning, embracing “lessons learned” and so-called “best practices” may be dangerously dogmatic in high-VUCA situations.

What may now become apparent to the reader is that we use language and concepts in this chapter that may very well reflect a paradigm shift. Paradoxically, while we would like to communicate to national security institutions using familiar language, we appreciate that an emergent paradigm cannot translate well to the one at present. At times, we will have to reframe meanings and invent new ones to attempt to communicate these ideas.

For example, throughout this essay, we will employ the metaphors of “the swamp” (the Schönian indeterminate zone of practice) and “the high ground” (the professional school or other post-graduate academic setting) to capture the messy dichotomy of practice and the role of education in assisting that practice. We organize the essay to talk first about the nature of working in the swamp and then about how to create learning conditions that can serve national security professionals as the high ground for reflective practice. Our principal argument is that reflective practice is essential to artistry, yet we acknowledge that one can neither quite arrive at the ideal state nor that in the kind of learning environment we envision there can be an “ideal state.”

³ Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (San Francisco: Jossey-Bass, 1987), p. 13.

VUCA in the Swamp

VUCA (introduced in the first essay of this series) is a particularly useful acronym to describe the swampy environment in which many national security practitioners operate. Practitioners would like to make decisions while knowing all of the variables involved in a given circumstance, but this is impossible in the swamp. In effect, they are always bounded in their ability to be technically rational, except in rare situations where VUCA conditions would be very low—like in a very controlled simulation laboratory.

Nevertheless, a military practitioner can make judgments concerning the degree of VUCA present in the swamp and consider when programmatic and rational-analytic approaches (discussed in Essay #6 in this series) are appropriate. Assessing the level of VUCA associated with unique decisions or actions is a key aspect of the reflection process we propose. In that regard, we think it useful to examine more fully what each word means in the acronym while remembering that each description overlaps with the others.

Volatility. Volatility (or instability) is the degree of environmental turbulence or rate of change. Some have argued that every generation seems to think its era is the most volatile. We are neutral on this debate, but we argue that the swamp metaphor—like a bubbling, muddy, primordial mess—assumes countless dynamics at work, making it difficult to define the problem or even appreciate the situation because the context quickly morphs before we can address it. Moreover, this characteristic is not something we see only occasionally; it is a central feature of the international environment and operational niches.

Uncertainty. Uncertainty is the recognition that what has happened before is not an accurate predictor of what will happen later. So, pre-existing answers or solutions (the mainstay of technical rationality) are not available and maybe never will be. The structures of the environmental domains, missions, systems, and processes faced are complex and highly interactive. In the swamp, cause-and-effect relationships are impossible to isolate from others, and the massive amount of interactive variables make assessments, judgments, and decisions about the future more like a gamble—especially when considered in a global context or over long periods of time.

Complexity. Complexity in the swamp refers to the countless events involved and the degree of interconnectedness among them that result in randomness and unpredictability rather than certainty. The higher the complexity, the less certain logicians are that the situation can be studied in an objective way. Not every action shows immediate feedback. At best, delayed, confusing, unforeseeable side effects develop. Studying a state of high complexity in the swamp is like trying to study anarchy. How can you develop a framework to study chaos? Indeed, the paradox is that, by definition, no laws govern cause-and-effect relationships in anarchic systems, so outcomes are random. One can at best reflect on the circumstance—a subjective endeavor—rather than objectively determine how variables will interact. Interpreting complex situations will always result in some level of equivocation, which is our next topic.

Ambiguity. When national security practitioners admit that they cannot be technically rational because of the anarchic nature of high levels of volatility, uncertainty, and complexity, their attempts at explaining what is happening in the swamp are infused with ambiguity. Mindful that multiple meanings are competing for making sense in the swamp, reflective practitioners acknowledge that expected lack of clarity. On the other hand, unreflective practitioners might

have a false sense of clarity—a bias—and force the illusion of a shared understanding and seek closure rather than contemplate the almost endless possibilities of interpretations. In the VUCA-laden swamp, reflective practitioners understand that additional information does not necessarily add clarity but often generates more questions and more possible meanings.

Military practitioners should be familiar with the concept of ambiguity in daily life. Almost every word has more than one definition—and for good reason. Definitions vary across languages, editions, types, and cultures (even local or closely related social structures). Meanings are derived from context, culture, and interpretations of past events. One will likely find different definitions of the same phrase in other groups who have had different experiences and have contextualized those experiences in different ways. Meanings are not “objective” as one might think; semantic history has tremendous influence on how situations are framed. Indeed, the hermeneutic method (the interpretation of others’ text) to study the contextualization of the past can help gain a broader view about making sense of the present.

For example, many of us have attended a meeting where the senior ranking official declares that the first task at hand is to agree to “terms of reference” (i.e. settle up front on meanings with participants representing a diversity of organizations and governments) . In the swamp, accepting multiple, diverse meanings may actually benefit the collaborative “sensemaking.” It may be more valuable to remain open to different meanings than to risk animosity in attempts to force agreement on terms.

In the swamp, practitioners must take action to ensure our national security. Reflection without action is useless and action without reflection is careless. Educating the practitioner to work in the swamp is in conflict with the conventional belief that the way to that education is best determined by developing what should be taught. Such a technically rational model of education will not be very helpful to those who have to operate in high-VUCA environments.

We argue the need to focus much less on the “what” of education (that should occur more naturally) and more on the “where” of education (linking the swamp to the high ground).

Where: Structural Inertia

Our traditional structures for education seem oriented on building schoolhouses and, more recently, centers of excellence that are well-intended to feed practitioners knowledge that works. Particularly those curricula designed in DOD schools, colleges, and universities are structured after the hierarchical system of decision making that involves a great deal of determining the “what.” This system includes the top-down control of content, governance through approvals of competency maps and learning objectives, and formal accreditations and certifications—all geared to a technically rational culture. Hence, DOD curricula are mired in this structural inertia and evaluated based principally on compliance.

Although high VUCA situations require customization, indeed, standardization appears to be the dominant value in terms of managing the scale of productivity in our educational institutions. The weakness of promoting such industrial-age, large-scale, production-line approaches is the assumption that situations described in the classroom will repeat in the real world. The logic is that if the student can master espoused theories of action perform them to standard in the classroom, then the student will apply those standards successfully in his/her fieldwork—that is, in the swamp.

In our estimation, this is a maladaptive belief, particularly where standards of learning become competency traps and our practitioners have to exercise artistry. Thinking of the classroom or exercise scenario as the rehearsal stage for the real-world performance is a dangerous assumption; yet, it appears that a large part of the education community embraces this belief. Professor Donald A. Schön, in his seminal book, *The Reflective Practitioner*, puts the issue this way:

[With an] emphasis on problem solving, we ignore problem *setting*, the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen. In real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the materials of the problematic situations which are puzzling, troubling, and uncertain. In order to convert a problematic situation to a problem, a practitioner must do a certain kind of work. He must make sense of an uncertain situation that initially makes no sense.⁴

Educating the reflective military practitioner will involve continuously deconstructing and reconstructing the “where” component of the learning function. The center of attention moves away from using systematically engineering knowledge structures to creating more organic epistemologies that permit fluid movement of practitioners to and from the seminar (the high ground for deep reflection) and each unique job setting (somewhere in the swamp).

Emphases on deterministic knowledge solutions (sometimes euphemistically referred to as “toolkits”) are diminished while “reflection while in action” becomes more prominent—in essence, the swamp becomes the “where.” The “where” of education starts to blend these traditionally separate worlds; the high ground and swamp merge. The quality of reflection (the “why”) that occurs between the swamp and the high ground is vested in the critically important task of professional inquiry.

Why: Reflection as Professional Inquiry

Central to professionalizing national security practitioners is the shaping of their desire not only to learn but, more importantly, to encourage them to critically analyze and as appropriate challenge accepted knowledge and create new knowledge. One thing that will make them more professional is their sense of obligation to question the state of professional knowledge. One of the most important reasons for professional education is to help instill this sense of obligation. In the context of developing this sense, we will discuss four key ideas about the “why” of educating: valuing praxis, designing (and communicating) professional inquiry, research-in-action, and being philosophically savvy.

Valuing praxis. Inquiring and reporting around the idea of praxis—the unification of theory and practice—should be a preeminent professional value. Eighteenth century philosopher Immanuel Kant summarized this idea by saying, “Perception without conception is blind. Conception without perception is empty.” An ideal professional quality is to become an effective theorist, engaging in the imaginative process of linking interesting facts into relationships that are driving us toward a more holistic and integrative view. In short, theorizing is about presenting a larger context of how things are or could be. Traditional students in national security educational programs tend to focus far more on the search for school house theories for

⁴ Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (Basic Books, 1983), p. 40.

action and far less on developing theories of practice while practicing (a process Schön calls reflective practice).

Designing professional inquiry. The military profession offers opportunities for intrinsically motivated practitioners to become confident in how to approach inquiry and report outcomes with rich descriptions and concise summaries, both conversationally and in written form. The conversational form can be described as “consultative stewardship” and is a skill that delivers coaching, guidance, direction, and assessment. With this skill, professionals engage in substantive *critical dialogue* (associated with deviant leadership—see Essay # 2 in this series) with peers, subordinates, superiors, and perhaps most importantly, outsiders who may not normally be connected to the otherwise insular field of study. Professional inquiry involves “a process of reflection upon the adequacy and value of conventional wisdom and methods of learning.”⁵

Professional inquiry is important both in the realm of divergent knowledge (exploring the unknowns) and in confirming or denying assimilative knowledge (readdressing or challenging the knowns). Both of these reasons for inquiry are important for addressing the perpetual issue of avoiding professional myopia or a competency trap. As sociologist Gianfranco Poggie said, “A way of seeing is also a way of not seeing.” The current state of the profession may indicate blindness to the value of good consultative stewardship.

Research-in-action. The most accomplished professional practitioners could ideally be described as researchers-in-action. They develop innovative and improvisational ways to design national security strategies while working on them, rather than using mechanistic templates learned in the conventional classrooms that assume a near-context-free application. Inquiry developed between the swamp and high ground should not emphasize completeness, and plans should be considered works-in-progress that are never quite complete. Such inquiry does not seek closure but rather openings to unexpected possibilities. Reflective practitioners within the military should aspire to understand the value of both qualitative and quantitative research, both the value and limits of using applied science techniques, and the importance of appreciating when to employ *abductive reasoning* appropriately for high-VUCA situations when deductive or inductive forms of reasoning would be better reserved for low-to-moderate-VUCA situations).

Abductive reasoning involves the discovery of tentative inferences and search strategies for possible explanations. Surprise is the trigger of abductive reasoning, so it goes hand-in-hand with being a practical skeptic about one’s belief system. According to Herbert A. Simon (in his seminal 1973 article “The Structure of Ill Structured Problems” in the journal *Artificial Intelligence*) such critical inquiry needs a blending of luck, persistence in search, and superior heuristics (see the discussion of framing in Essay #5 in this series).

According to modern-day philosopher Nicholas Rescher, our sense of luck involves appreciation of chaos (small changes can lead to amplified effects), the unpredictability of others’ choices, the nature of chance (the unruliness of things happening), and our own ignorance (consisting of both fallacies in interpreting information and a lack of information).⁶ Despite the resulting randomness in everyday life, we can still abductively reason, which is more of an attitude than a methodology. Abductive reasoning theorists argue that much of our creativity

⁵ Hugh Willmott, “Critical Management Learning,” in John Burgoyne and Michael Reynolds (Eds.), *Management Learning: Integrating Perspectives in Theory and Practice*, (London: Sage, 1997), p. 162.

⁶ Nicholas Rescher, *Luck: The Brilliant Randomness Of Everyday Life* (NY: Farrar, Straus and Giroux, 2001).

involves extending what we already know. We borrow meanings from a wide assortment of experiences and learn to cross lines between knowledge disciplines (sciences and humanities) to make sense of novel situations. To reason abductively requires an open search strategy that includes having a disciplined conversation with oneself, collaborating with others who have varying views, calling on past experiences that can be synthesized and evaluated as hypotheses for taking action now, and extending and displacing old concepts until useful meanings are discovered for the situation at hand.

Superior heuristics (from the same root word) involves creativity in *frame reflection* (finding rules of thumb, analogies, metaphors, similes, and histories that may relate to making sense of the situation at hand—see Essay #5 in this series). The reflective military practitioner expects surprise as s/he abductively reasons about the emergent reality. An eclectic career path and multidisciplinary educational opportunities provide the practitioner superior heuristics when dealing with high-VUCA situations.

For example, using traditional deductive reasoning skills, the military practitioner might seek out new techniques for catching an insurgent before he sets an explosive device. Abductive reasoning occurs when concerned with investigating the conditions that fostered the proclivity of the individual to do so. Typically DOD educational programs lead to design actions that satisfy accepted governing templates. In abduction, students learn it is okay to “change the field of constancy itself.”⁷

Education should involve coaching students to be researchers-in-action as they encounter problems of the real world. Students should treat their past and ongoing field experiences in the swamp as hypotheses for action, not as proofs for action. We believe that broadening one’s education by crossing over into nontraditional national security related fields of study and methods of instruction, including fine arts and liberal arts, can offer tremendous value. Such studies serve as creative sources for framing the situation and exercising professional judgment when faced with high-VUCA situations.

Being philosophically savvy. We invite the reader to revisit the first essay in this series where Parmenidean and Heraclitean world views are compared.⁸ We believe that academic study for members of the national security community should be oriented more toward learning about the philosophical underpinnings of abductive reasoning. In other words, national security practitioners should strive to become philosophically savvy. That is, they should strive to remain open to ideas while being critically mindful enough not to succumb to clichés, catchwords, placards, parades, slogans, ideological clubs, circles, peer and populist unsubstantiated influences, orthodoxy, and overreliance on technique.⁹ Professionals should be sophisticated enough to recognize and resist anti-intellectualism, dogmatic beliefs, cultural biases, and ideologically-based influences and to deal effectively with inconvenient facts that may contradict prevailing beliefs. We need practitioners who can engage in critical reviews of otherwise popular or unexamined arguments in security think tanks, academic, and/or government-contracted studies.

⁷ Argyris and Schön (Op. cit.), p. 19.

⁸ Design and the Prospects of a US Military Renaissance

⁹ Lewis S. Feuer, *Ideology and the Ideologists* (New York: Harper and Row, 1975).

For example, professionals should routinely challenge the wisdom of popular books and articles that uncritically espouse the worthiness of what are actually metaphors, such as “fourth generation warfare,” “persistent conflict” and so forth. We also need practitioners who embrace well articulated arguments, scholarly work, the statements of talented and insightful thinkers, and those who respect fellow professionals despite organizational positional differences.

How: Connecting the Swamp and the High Ground

Rather than educating through episodic classroom experiences that are separate from actual practice in the field, we encourage the military community to find ways to merge the two experiences. Consider the possibility that educators could use a virtual seminar on the Internet while injecting short (maybe 2- or 3-week) small-group sessions over a period of years. Real-world experiences should serve as opportunities for artistic practicum, where the educator could be both an expert coach and discussion facilitator along the way.

Educational programs should be redesigned to use the adult seminar as an opportunity to go to the high ground. Students should have the opportunity to move themselves from the immersion of day-to-day problems at work to a temporary vantage point where group members help each other reframe their situations and participate in designing a way ahead.

Taking advantage of the high ground involves collaborative thought experiments and adapting to the situation at hand when no technical solution seems to work (i.e., engaging in creating *divergent knowledge*). The purpose of the cohort seminar, then, facilitated by the educator-coach, is to explore through dialog and inventively create divergent forms of knowledge as a group. The students return to work with a refreshing view and equipped with new insights and frames of their mission.

Some in the enterprise may prefer using the traditional case study or scenario method in the classroom. Instead of students bringing their swampy experiences to the classroom, the more traditional scenario method is to present well-developed and detailed case studies that are well-intended to help the students become better problem-solvers.

Criticisms of the scenario method are many. First, case studies tend to be developed around preconceived principles, themes, and theories of action that provide opportunities for deductive reasoning (using solutions from an existing knowledge framework). Few, if any, opportunities exist for theory building and testing-in-action (which are associated with abductive reasoning). Under the swampy conditions of high-VUCA situations in educational settings, abductive reasoning is the preferred skill. The benefit of using real up-to-date situations (that are indeed messy) is that students are required both to criticize prevalent theories or doctrines that appear irrelevant and to promote the artful design of new theories-while-acting.

Second, scenario-based exercises imply that there are context-free lessons to be learned. That is, the institution assumes the conditions will repeat in the real world and the students will now be familiar with them. But practitioners will not experience exactly the same conditions over and over again. In high-VUCA, real-world, national security situations, the strategy cannot be static, so knowledge of national security must always be transforming.

The traditional search for historic lessons learned must be continuously evaluated, and efforts have to be taken at some point to unlearn them; the knowledge of national security is, and has to be, ephemeral. History’s greatest role in national security education may be to confirm

that every situation is unique. While the context provided in case studies can never match the context that recent student experiences provide, history serves to be a rich source for building heuristic depth in practitioners.

Third, case method learning reinforces the idea that we can find root causes and define problems through analysis and other forms of scientific reductionism. In highly complex, interactive situations, practitioners may at best appreciate the unique conditions they are in.¹⁰ Appreciation is making subjective judgments of fact about the state of the whole system. It is a view of oneself and one's organization as part of a larger enterprise in an even larger global context.

Unlike traditional case studies, where causality can be more clearly determined in retrospect and aspects of causality appear isolatable, projecting on the current situation is better stated by Alfred Schutz as an exercise of "retrospection anticipated in fantasy." One should seek to twist this abductive reasoning idea with this maxim: "If you set out to invent the future now, you are not inventing the future; you are instead being inventive in the present."¹¹ This is a much greater skill than untangling historic case studies into neat, over-simplified, proximately causal terms that are designed to "prove" theoretical templates.

Studying history is not the problem. On the contrary, we advocate a detailed approach to studying history as part of the humanities, not the sciences. Our objection is about how historic cases are designed and biased toward proving a point or developing scientific techniques. These are illusory goals. We advocate affording practitioners the opportunity to go to the high ground in the midst of their day-to-day struggles in the swamp, where no one knows how things will turn out. Educating military practitioners should be more about reflective practice and playing with multiple theories of action than the deterministic search for best practice or schoolhouse theory.

Conclusion

In the face of high-VUCA conditions, traditional educational structures for national security practitioners are maladaptive because they focus on the "what." Our goal in this essay is to suggest the need to deconstruct and restructure our conceptualizations of education toward the questions of—

- Where: Reframing education away from the locus of deductive reasoning and technically rational structures toward artistry – requiring more abductive reasoning and contextual, adaptive, improvisational opportunities.
- Why: Orienting on praxis, designing, researching-in-action, and artfully creating and disposing of knowledge.
- How: Creating a cohort-based seminar approach that continuously connects the swamp to the high ground.

Given these proposed concepts of PME, a collegial body of reflective military practitioners can opportunistically design emergent and often ephemeral forms of knowledge that, under high-VUCA conditions, are more important than knowing "what" the community already knows. The most significant ingredient in this transformation must be a renewed emphasis on the quality of educators as coaches and facilitators of the proposed reform—

¹⁰ See Anna Simons, *Got Vision? Unity of Vision in Policy and Strategy: What It Is and Why We Need It*, US Army Strategic Studies Institute.

¹¹ Alfred Schutz, *Collected Papers, Vol. 1, The Problem of Social Reality* (The Hague: Martines Nijhoff, 1967), p. 87.

particularly to foster abductive reasoning skills in practitioners. In their role as ongoing seminar facilitators, these carefully selected educators should be, above all, highly skilled in shaping the conversations and creating opportunities to gain perspective on the swamp from the high ground. In lieu of developing skills using the logic of the natural sciences (technical rationality), we believe that educators should be more eclectic and pay particular attention to how “coaches” in the liberal and fine arts do their work.

Under the concepts that we propose, the focus of senior educational administrators in our various DOD organizations is no longer on controlling the content (the “what”) but on ensuring that cohort seminars are resourced in the form of excellent faculty, well-designed seminar rooms, and opportunities for virtual seminar experiences as needed. The quality of the connections among the members of these proposed collaborative groups depends on these resources and those expert coaches.

Our DOD-run schools, colleges, and universities must shift attention from seeking context-free knowledge (“best practice” or technical rationality) to facilitating context-rich knowledge (the realm of reflective professional practice). Traditional models of professional schools focus on students being able to recognize situations and know what to do. Our proposed philosophy assumes practitioners will be making sense of novel situations, inventing what to do as they are doing it, and reflecting in- and on- the situations as they are happening and in retrospect.

The swamp/high ground approach to education could provide a cohort venue in which the practitioner can become more professional. We recognize the tremendous challenges—intellectual, structural, and resource—that such a shift would entail within the DOD educational enterprise. Some people will have reasons why we cannot or should not change our traditional approach, and many will not entertain even experimenting with a new method. However, in the high VUCA world, it comes down to a single inescapable question: What educational philosophy will best help professionalize practitioners in light of design philosophy?

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