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DAU Innovate to Win: DoD Upskilling Innovation Readiness

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DAU Innovate to Win: DoD Upskilling Innovation Readiness

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Abstract

In the context of divisive geopolitics, the Department of Defense (DoD) faces challenges in assessing innovation readiness due to the lack of a unified language and metric. Despite over 200 active innovation cells, efforts are fragmented and underfunded (Theodotou, 2023). In response to the National Defense Authorization Act of 2023 and Deputy Secretary of Defense Dr. Kathleen H. Hick's commitment to innovation, the Defense Acquisition University (DAU) launched the "Innovate to Win" pilot program in 2022.

This program aims to codify the innovation skillset required by the DoD workforce by integrating academic research and industry practices into a DoD context. Key elements include an Innovation Competencies and Skills Model, Innovation Readiness Self-Assessment resulting in Curated Learning Pathways, and an Innovate to Win Playbook for all levels of leadership. Over 3,700 personnel have completed the self-assessment, receiving tailored learning pathways to enhance their innovation skills. This research examines the correlation between self-assessed innovation readiness and organizational support, aiming to refine the self-assessment tool and provide resources to foster innovation across the DoD workforce.

Keywords: Innovate to Win, Innovation Readiness, Innovation Ecosystem, DoD Workforce, Defense Acquisition University (DAU)

Background

The Department of Defense (DoD) operates in an era of rapid technological change, among shifting geopolitical forces and nascent threats that demand relentless and swift adaptation. To gain and maintain the operational advantage, the DoD must scale innovation at an unprecedented pace, ensuring that both technological advancements and operational concepts evolve to meet the challenges of modern warfare (Defense Innovation Board, 2023). Despite efforts to drive innovation, challenges persist. Bureaucratic resistance, risk aversion, and rigid hierarchical structures often hinder the ability to rapidly develop, test, and implement new solutions (Mahnken et al., 2023). An institutionalized culture of innovation can serve as an antidote to those challenges (Bowdren, 2024). A critical component of innovation at scale is fostering an innovation mindset among the DoD workforce (Theodotou, 2023a).

Research highlights that innovation is not solely driven by advanced technology, funding, or watershed moments, but by the cognitive and behavioral traits of individuals supported within an enabling system wide approach of an organization (Miller & Brankovic, 2011). Organizations play an essential role in accelerating the speed of innovation within the DoD. Studies show that "effective management of [organizational] culture lies at the heart of organizational innovation" (Tushman & O'Reilly, 2002, Chapter 5). Organizations that promote both creativity and speed to implementation report more success than organizations that focus on only one; both are needed (Tushman & O'Reilly, 2002).

Within the DoD, innovation-enabling entities such as AFWERX, Army Futures Command, Defense Innovation Unit (DIU), and NavalX have demonstrated that providing dedicated resources, streamlined acquisition pathways, and partnerships with private sector innovators can significantly enhance innovation outcomes (Defense Innovation Board, 2025). However, the DoD's innovation efforts are fragmented, with over 200 active innovation organizations operating independently. These organizations employ diverse definitions,



languages, skill sets, and metrics. The absence of a unified language and metric for innovation has led to inefficiencies, fragmentation, and the underfunding of innovation efforts within the DoD (Theodotou, 2023b). Results garnered by varied innovation organizations validate the success of organizations that foster both innovative mindsets and rapid implementation. They also highlight the need for a unified approach to streamline these efforts and enhance overall innovation readiness across the DoD workforce (Theodotou, 2023b). In response, DAU developed the Innovate to Win initiative and deployed it in 2023 (<u>https://www.dau.edu/innovatetowin</u>). It is designed to:

- Establish the baseline innovation competencies and skills needed to cultivate an innovation mindset.
- Define innovation readiness to standardized lexicon and optimize innovation metrics across the DoD workforce.
- Provide tools and resources that enhance innovation behaviors for individuals and assist leaders in motivating and cultivating a culture of innovation.

An innovation mindset is characterized by curiosity, adaptability, and a willingness to take calculated risks, essential for developing novel solutions to complex national security challenges (Theodotou, 2023b). This paper analyzes 3,700 self-assessment responses. Specifically, it examines how employees rate their innovation mindset and what organizational barriers and incentives are prevalent.

Methodology

Inspired by language in the National Defense Authorization Act of 2023 and the commitment of the former Deputy Secretary of Defense Dr. Kathleen H. Hicks, DAU launched the "Innovate to Win" pilot program in 2022. The program aims to codify the innovation skillset required by the DoD workforce by leveraging successful tactics from academic research, industry practices, and existing innovation cells. The three key elements of the program are: 1. Innovation Competencies and Skills Model, 2. Self-Assessment and Curated Learning Pathways, and 3. Innovate to Win Playbook.

Innovation Competencies and Skills Model

The Innovation Competencies and Skills Model is a standardized framework for assessing innovation readiness across the DoD, shown in Figure 1. Data triangulated from academic research, workforce insights, and industry best practices are represented in one of three domains of practice:

- Thinking Thinking innovatively hinges on embracing a growth mindset, using critical thinking approaches, cultivating creativity, taking calculated risks, and practicing futures thinking.
- Collaborating Collaborating to foster innovative behaviors includes networking and communicating effectively, including asking probing questions and listening actively.
- Cultivating Cultivating innovative behaviors includes experimenting, observing, embracing a comprehensive approach, driving change, integrating people, ideas, and learning, and embracing lifelong learning.

Each of the three domains is characterized by supporting competencies and skills. The Innovation Competency Model introduced innovation competencies, enables self-evaluation of innovation skills and reports an innovation readiness metric. It then provides a curated pathway of targeted learning assets. The Innovation Readiness Metric calculates the median of each



response aligned to each competency skill and rolls it up to the domain level. A workforce member can gauge their own innovation readiness by completing the self-assessment. Team leaders can use the Innovation Readiness Dashboard to review and report the aggregate innovation readiness of the team based on the individual self-assessments of each team member.



Figure 1. DAU Innovation Competencies & Skills Model: A Three Step Approach

Self-Assessment

The self-assessment instrument provides a gauge of self-reported innovation readiness shown in Table 1. It is central to the model and is crafted to pinpoint strengths and areas for growth. Access is available at https://www.dau.edu/innovatetowin/self-assess.



Table 1. DAU Innovate to Win: Self-Assessment

	F	RA	TIN	١G
ROWTH MINDSET	1	2	3	4
ly basic intelligence is something that is not static and can be expanded over time.				_
s I learn new things I am improving my overall intelligence.	_			_
/nen litace a challenge, liting a way to persevere.	_		\vdash	-
requerity iterate on a loca and work on it in small doses.				-
				-
ISK TAKING				_
am willing to try a new way of accomplianing my work.	-		H	-
regularly ask questions that challenge the status guo				-
am comfortable making calculated decisions in the absence of complete information				+
REATIVITY				-
frequently connect seemingly unreleated concepts and ideas from diverse disciplines.				
frequently tinker with problems and seek new ways to tackle them.				
am familiar with Design Thinking process models or other tools/models to create innovative solutions.				
am comfortable using my imagination to come up with new ideas.				
RITICAL THINKING				
gather relevant information and think through multiple solutions before making a decision.				_
/hen tackling a problem, I listen to other people's opinions, points of view and their perspective.	_			_
am willing to make decisions without all the data I would prefer to have.				_
understand now unconscious bias, assumptions, and empathy can impact decision making.	_	\vdash	Н	_
OTURED THINKING	_	\vdash	Н	-
o envision luture scenarios, neverage data, trends, and technology.	-		\vdash	_
OLI ABORATING		3 Δ		JC
OLLABORATION	1	2	3	4
spotlight my team members that do great work		-		1
Vhen I have a new idea. I try to involve people who are able to help improve and adopt it			H	-
recognize when stakeholders are not aligned and that it impacts my work products and I reach out to facilitate				-
seek to understand opposing views to my work efforts, and facilitate discussion to reach desired outcomes.				-
ETWORKING				
deliberately seek to connect with other people to learn and seek advice.				
seek to connect people I know that may enjoy meeting each other.				
am active on Professional social media sites and participate frequently in professional organizations in my				
LLYSHIP				
recognize that the more diverse my team is, the more innovate we are.				
seek out learning opportunities beyond just mandatory courses to learn about diversity, equity, inclusion and				
seek to amplify diverse and innovative ideeas from people who don't always have a voice of their own.	_			_
OMMUNICATION	_			_
use storytelling to influence others.	_	_		_
I have a new idea, I am comfortable and have had success reaching out to involve people who are able to	_			_
Then ask open ended questions to expand on a conversion.		2 ^	TIN	16
DEFINATING	4	ر	2	4
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RATING SCALE			
SCORE			
RATING	DESCRIPTION		
1	Strongly Disagree		
2	Disagree		
3	Neither Agree nor Disagree		
4	Agree		
5	Strongly Agree		

Curated Learning Pathways

The curated learning pathways are tailored to align learning assets to the innovation competencies and skills, cultivating the engagement of learners with the content and ensuring fit with the practical and actionable learning based on individual self-assessment results. DAU identifies a list of learning experiences and generates a learning asset bank from which the online learning management system (Cornerstone on Demand [CSOD]) algorithm will curate specific, personalized learning pathways for each member of the workforce based on the self-



Acquisition Research Program department of Defense Management Naval Postgraduate School assessment results. Providing learning resources enables benefits for the individual learners and organizations at large (Figure 2).



Figure 2. DAU Innovate to Win: Curated Learning Pathways Benefits for the Learner and Organization

Alignment to Adult Learning Theories

While there are more than 30 research-based learning theories and models, Innovate to Win aligns itself with four foundational schools of thought: cognitivism, behaviorism, constructivism, and connectivism (Drew, 2024). The Innovation Competency Skills Model Curated Learning Pathways hinge on cognitivism by aligning with the updated Bloom's taxonomy (Wilson, 2016). In 2001, Anderson and Krathwohl revised Bloom's taxonomy to focus on how the learners remember, understand, apply, analyze, evaluate, and create meaning. Additionally, behaviorism is reflected in the structured and measurable approach to learning, where specific behaviors are reinforced through guided practice and feedback. The curated pathways and Innovate to Win Playbook focus on how learners understand and apply the innovation competency skills (Bloom's Levels 2, 3, and 4) which center on understanding, applying, and analyzing innovative skills and behaviors. For example:

- **Bloom's Level 2** Understanding: Compare and contrast fixed and growth mindset behaviors, relate with other colleagues, rephrase assertions into great questions.
- **Bloom's Level 3** Applying: Experiment with new ways of doing things, observe and interview users to build new innovative solutions, model lifelong learning by reading one page of a book per day.
- **Bloom's Level 4** Analyzing: Take part in experiments, test for user experience, build strategic network relationships.

The Curated Pathways incorporate elements of Constructivism as some of the learning assets are scaffolded. The learning experiences build on each other, and learning happens when the learner interacts with tools, language, and organizational structures. Most importantly, the pathways leverage elements of Connectivism whereby learning results from a variety of input. Connectivism has been hailed as the learning theory of the digital age because it acknowledges the power of technology as an enabler in learning whereby learners can quickly select content from their Curated Learning Pathway, dig deeper by searching for an instructional



video, connect with others through a community of learning, chat live, and together find solutions to support the warfighter (Duke et al., 2013).

Learning Asset Modalities

The learning modalities used within the Innovation Pathways are visual (watch), auditory (listen), and kinesthetic (read). By including an array of instruction methods, all preferred learning styles are enabled to support preferred learning style. Offering multimodal learning options also creates an exciting learning environment and leads to increased learner engagement and retention.

Learning Asset Quality

All recommended learning assets are first benchmarked against DAU's quality rubric and value metrics, demonstrated by superior feedback on Net Promoter Scores, learning hours, and learner qualitative and quantitative survey results. Quality Assurance for each proposed asset required more than perusing content and visuals. It also included validating elements of navigation, interactivities, 508 compliance, alignment of knowledge checks to the asset objectives, and ease of user access. DAU ensured alignment, engagement, and fit using rubric as a guide to result in the standardized selection of productive, engaging, and effective assets in support of an innovative mindset.

Content Rubric

All assets were evaluated using the content rubric criterion in Table 2. Microlearning assets, videos, articles, job tools, and infographics required a minimum of 12 points to be considered for inclusion in the learning asset bank.

	RUBRIC CRITERION/RATING	0 POINTS	1 POINT	3 POINTS
1	Practice: Includes opportunities to practice	Zero opportunities	One opportunity	More than one opportunity
2	Relevance: Demonstrates relevancy to the Workforce	Never	Once	More than once
3	Engagement: Offers the learner engagement opportunities (click a button, solve a puzzle, write down thoughts, answer a question, etc.)	Offers zero engagement opportunity	Offers up to two engagement opportunities	Offers three or more engagement opportunities
4	Cross-Referencing: Connects to other learning / Facilitates self- directed learning	Never	Passively by mentioning other learning	Actively by offering hyperlinks, book recommendations, etc.
5	Assessment	None	Assessment present, but offers no feedback to user	Assessment present and offers feedback to user
6	Access: Ease of Access	Not easy to access	Somewhat easy to access	Easy to access
7	Currency: Age of Content	>2 years old	Between one and two years old	Less than a year old
8	Time to Complete	>6 hours	Between three and six hours	Less than three hours

Table 2. Learning Content Rubric



Innovate to Win Playbook

The Innovate to Win Playbook serves as a practical tool for leaders and supervisors to create a culture that motivates and fosters innovation within their teams (<u>https://www.dau.edu/innovatetowin/perform</u>). It includes a step-by-step guide with seven plays that team leaders and supervisors can use to motivate and cultivate innovation within their teams. Each play focuses on a different aspect of fostering innovation and is designed to be actionable, accessible, and user centered. The seven plays are:

- 1. Define a Compelling Vision and Goals
- 2. Provide Top Cover
- 3. Collaborate and Communicate
- 4. Embrace Risk
- 5. Foster Curiosity
- 6. Cultivate a Learning Culture
- 7. Recognize and Reward Innovators

The playbook is part of a larger effort to increase the culture of innovation across the DoD at large. By utilizing the content included within each play, leaders gain measurable, valuable insights and practical knowledge that can be applied to real-world challenges. It encourages teaming to enhance problem-solving skills, explore new technologies, and collaborate with other professionals. To this end, each play includes four key elements:

- What the play is about
- Why it is useful
- How to use the play
- How to measure the play's success

The playbook can be used independent of, or in conjunction with, the Innovate to Win Self-Assessment. The aggregated results of each team member's self-assessment are provided on a custom dashboard report, which helps leaders select and apply the plays that are most relevant to the needs identified by team results in the dashboard. Alternatively, leaders can use their knowledge of the team, or any other barometer of choice to define utilization of the playbook. Regardless, the iterative process of assessing, applying plays, and recalibrating the innovation readiness baseline helps grow innovation and support an innovative culture.

Results

The findings suggest that a supportive organizational environment is crucial for fostering innovation. The self-assessment tool provides valuable insights into individual and organizational innovation readiness, informing the development of resources to encourage psychologically safe work environments. Data from 3,719 individual competency self-assessments were collected. Within this population, 72% (2,676 total) of the respondents were identified as Defense Acquisition Workforce (DAW) members. The remaining responders were DoD military/civilian employees (1,011), federal government employees (141), and industry (9). Component representation of responders is identified in Table 3.



Component	Total Number of Responders	Count of DAW Members	% DAW
4 th Estate	19707	14415	73%
Air Force	11389	8318	73%
Army	13247	8891	67%
Navy	11997	8965	75%

Table 3. Component Representation of Responders

After removing all other federal users and industry responders, the average score for each competency area was calculated. Respondents are not required to answer every question and can leave questions unanswered. A non-response was not considered a zero, but a null. Each competency had more than one question; the score for each question (ranging from 1 to 5) was averaged to give an overall competency score. On a scale of 1 to 5, all component categories reported a score of "Agree" to the competencies across each of the three domains in Table 4.

Component	Collaborating	Cultivating	Thinking
4 th Estate	4.0	4.1	4.2
Air Force	4.0	4.1	4.1
Army	3.9	4.0	4.1
Navy	3.9	4.0	4.1

Table 4. Component Domain Scores

The average score of all 3,719 respondents was calculated across all domains and competencies in Table 5.



_Domain and Competency	Average Score
Collaborating	3.96
Allyship	4.04
Collaboration	4.30
Communication	3.97
Networking	3.55
Cultivating	4.04
Driving Change	3.98
Experimenting	3.86
Holistic Approach	4.04
Integrating	3.85
Lifelong Learning	4.32
Observing	4.19
Thinking	4.11
Creativity	3.88
Critical Thinking	4.21
Futures Thinking	4.06
Growth Mindset	4.34
Risk Taking	4.08
Grand Total	4.05

Table 5. Average Score by Domain and Competency of 3,719 Respondents

While the quantitative scores on average showed that in general employees agree that they have innovation competencies, the qualitative questions provided a deeper insight into local barriers and incentives at their organization. Two qualitative questions were asked in the competency self-assessment, and a response was not required.

For the question "What barriers have you encountered when trying to be innovative (new process, new idea) in your organization?" responses are consolidated into four emergent themes:

1. Resistance to Change

• Many respondents highlighted a status quo mentality and a fear of failure as significant barriers. This included a reluctance to support new ideas and a preference for entrenched old-school methods.

• There is also a notable leadership reluctance to change, with some leaders being complacent or procrastinating.



2. Resource Constraints

• A common theme is the lack of funding, equipment, and other resources. Respondents referenced limited manpower and time, as well as overly burdensome processes that focus more on compliance than mission accomplishment.

• Information technology infrastructure issues and difficulty in finding historical information and understanding current systems were also noted.

3. Organizational Culture

• Hierarchical barriers and a lack of procedural knowledge among leadership were frequently stated.

• Groupthink, process paralysis, and biases related to gender and rank also hinder innovation.

• There is a lack of learning culture and a fear of the unknown, which makes employees unwilling to take risks.

4. Communication and Support

• Poor communication and collaboration, along with a lack of buy-in from leadership and team members, were significant barriers.

• Delays in review and approval processes and non-responsiveness from principals were also highlighted.

For the question "What incentives or other resources does your organization devote to innovation?" responses are consolidated into five emergent themes:

1. Recognition and Awards

• Respondents shared various forms of recognition, including cash awards, time-off awards, and certificates.

• Public and private acknowledgment of achievements and on-the-spot awards for innovative efforts were noted.

2. Training and Development

• Opportunities for training and professional development were highlighted, including Digital Development Fridays and Lean Six Sigma belts for process improvement projects.

3. Supportive Programs

• Some organizations have innovation programs that allow employees to work on new ideas, internal investment projects, and innovation cells.

• Results Accelerators and working groups were also mentioned.

4. Leadership and Organizational Support

• Encouragement from senior leaders and platforms for sharing ideas and feedback were noted as important resources.

• Flexibility and a focus on end results rather than strict processes were also highlighted.

5. Limited or No Incentives

• Some respondents reported no incentives or resources devoted to innovation, indicating a lack of clear incentives and support from the organization.



Results Summary

The competency assessment was unchanged from FY2023 to FY2024. In FY2025 the allyship section was removed from the competency assessment in accordance with the Presidential Executive Order on diversity, equity, and inclusion (Executive Order No. 14151, 2025). The instrument has remained consistent other than this change. Overall, the three highest scoring competencies were Growth Mindset (4.34), Lifelong Learning (4.32), and Collaboration (4.30). The statements from these competencies focused on improving as an individual through training and learning through collaboration with team members. The three lowest scoring competencies were Networking (3.55), Integrating (3.85), and Experimenting (3.86). While these scores are still within neutral to agree, the statements focused on seeking new ways of doing things, connecting unrelated people and topics, and actively seeking connections and connecting others. The highest and lowest scoring competencies were across each domain, which shows overlapping domains on specific competencies.

Conclusions

The DAU "Innovate to Win" program represents a comprehensive approach to embedding innovation into the foundation of DoD organizations. By standardizing the assessment of innovation readiness and providing curated learning pathways, the program aims to upskill the DoD workforce at scale. Based on the success of the DoD Innovate to Win program, it was extended to the federal workforce in 2024 and is also accessible via the Federal Acquisition Institute (FAI, 2024). FAI used the same competency model but adjusted the suggested training courses to align to the broader federal workforce. This allows future research to compare self-assessed competencies from DoD and federal employees. Future research should focus on identifying the most effective training methodologies for enhancing innovation competencies, exploring the correlation between innovation readiness and job performance, and analyzing the long-term impact of the program.

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