SAIC®

GREATER WORKFORCE READINESS FOR **GREATER MISSION READINESS**

How to maximize human performance with technology-powered learning and development

What is Mission Integration?

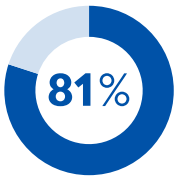
Mission integration fuses emerging technologies and best-in-class commercial solutions with existing systems to deliver transformative mission outcomes. By leveraging deep mission experience, advanced technology expertise and a collaborative ecosystem of stakeholders, mission integration ensures the security, agility and interoperability of critical capabilities to advance national priorities.

Federal agencies face widening workforce readiness gaps as mission demands intensify. According to an SAIC survey of defense and civilian leaders, workforce readiness is the second biggest internal challenge to mission success overall.[1] Civilian leaders say it is their top challenge.

The Upskilling Dilemma: Preparing for an Unknown Future

Solving this readiness gap goes beyond recruiting new talent. It requires building workforce capacity. Leaders agree: 81% of SAIC survey respondents think that strengthening workforce development is important to address challenges to innovating for mission success.

Leaders' emphasis on upskilling is understandable. Hiring across government is typically slow and cumbersome, and candidates often need specialized qualifications and security clearances. Competition with the private sector for top talent narrows the pool of experienced applicants. At the same time, agencies are expected to deliver mission outcomes with leaner teams and tighter budgets, and there is no prioritization of tasks. Low-level, repetitive tasks are in as much demand as high-skilled tasks.



of SAIC survey respondents think that strengthening workforce development is important to address challenges to innovating for mission success.[2]

[1] [2] *See About the SAIC 2025 U.S. Federal Leaders Mission Integration Survey for more information.*

How can agencies move past the systemic barriers to workforce readiness? Shift the strategy from getting more people to getting more out of people by maximizing human performance.

Human Performance and Technology-Powered Learning

Technology-powered learning and development is a powerful solution for upskilling employees. Whether it is an air traffic controller sequencing aircraft for landing or a warfighter making command and control decisions in defense of our freedom, humans are the ones making the decisions of consequence in mission-critical operations. Technology-led learning and development solutions help them to be best when it matters the most.

Implementing these solutions successfully is multi-dimensional and goes beyond the technology itself. SAIC's work helping the U.S. Army train F-35 pilots has revealed the importance of monitoring data to track whether people's performance is improving and make necessary refinements. This helps operators prioritize tasks so they can focus on the most critical ones. In addition, workforce readiness is as much about culture change and unlearning old ways of working as it is about learning new ones. This article explores the three interconnected dimensions of technology-powered learning for human performance: tools, data, and unlearning.

The Tools: The Value of Immersive Technologies

The best learning occurs in real-world environments with real-world-scenarios. Yet it is often difficult, dangerous, or even impossible to recreate actual training environments.

Immersive technologies address this challenge. These digital tools enable virtual reality (VR), augmented reality (AR), and mixed reality (MR), creating interactive, three-dimensional environments that closely mimic the real world. Immersive technologies alter users' perception to provide experiential, high-fidelity learning while improving skills retention and learning engagement. Having a human-machine interface supports machine learning at cognitive speed.

Simulators are one type of immersive technology. In federal and defense agencies, they support training across aviation, wargaming, ground combat, naval operations, emergency response, cybersecurity, maintenance and repair, and more. The benefits are clear. Using simulators is less expensive than live training. Simulators provide a safe way to train in dangerous and rare conditions. Because the environment is controlled, training can occur any time, not only in ideal conditions. In addition, techniques, tactics, and procedures are obscured from the adversary.

Operationally Relevant, Combat-Ready Training at Scale

SAIC'S F-35 FENIX is a high-fidelity simulator designed for F-35 pilots. The U.S. Air Force and allies are using this solution's cockpit-level simulations for shared training and mission rehearsals in an advanced, virtual battlespace. Eight pilots can work on networked simulators practicing complex combat missions against realistic adversary defenses. As one participant explained,

> "During three days of FENIX execution, we accomplished as many advanced F-35 8-ship repetitions as our wing normally accomplishes in six months due to live fly limitations."

Round-the-Clock Immersive Learning for Pilots

The U.S. Air Force's Pilot Training Next (PTN) program is changing the flight training paradigm and getting undergraduate pilots up in the air faster. PTN uses significantly less expensive yet effective simulators built with commercially available components to give students in undergraduate pilot training extra "flying" time.

The Air Force came up with the PTN concept and approach of bridging the classroom-to-enterprise simulator gap and looked to an experienced technology integrator for help with execution. PTN students are given desktop-size simulators for round-the-clock access to an immersive simulation environment in their living quarters. SAIC set up a virtual trainer for each pair of roommates to conduct training on their own time.

SAIC has specific expertise in integrating training technologies, including VR and AI, and got things up and running quickly. Our work also includes establishing virtual training stations inside schoolhouses for instructor-led, formal classroom training.

Simulators and other immersive technologies maximize human performance in unique ways. They precisely calibrate the challenge level of learning to match a person's ability at any given time. This is key. Learning science has shown that there is a "sweet spot" of learning difficulty.[3] If simulators are too complex, learners must focus on how to use the tool instead of actual learning. And if simulators are too simple, the brain doesn't engage with the content.[4] By tailoring simulators for scenario type, fidelity level, and difficulty level, agencies can help learners progress faster as the immersive technology adapts to the individual's cognitive capacity.

Before adopting immersive technologies, agencies should understand the cost-benefit dynamics. The highest fidelity simulators aren't always required. Selecting the right technology means weighing the objectives and desired improvements against resource availability, including budgets and human trainers. Agencies should also prioritize modularity. This makes it easy to replace individual components such as headsets, image generators or software without investing to rebuild the whole system.

The Data: Tracking Evidence of Improvement

The value of simulators and other immersive technologies isn't only in the experiences they provide; it's also in the data they collect.

Agencies can use this performance data to track people's progress and continually adapt learning and development to meet their individual needs. This tracking is essential. Without evaluating performance data, organizations can't confidently distinguish between actual proficiency and luck. Tracking performance data supports different cognitive abilities so trainers can work at every individual's ability.

Performance data should include metrics collected before, during, and after the training activities used to assess the impact of the learning program. It is possible to design data models that include both cognitive and behavioral elements necessary to perform within the simulation to achieve a particular competency. This takes digital engineering, learning engineering, and generative AI tools working together to integrate the cognitive and mental models into the digital representation of the system architecture. This approach provides immediate benefits to specific training programs and can also improve how agencies use immersive technologies for learning more broadly.

Unlearning: What People Need to Stop Doing

In a paradigm shifting society where technology is being introduced with lifecycles measured in days, unlearning must happen. However, traditional training often overlooks unlearning. It tells people what they have to start doing, but it

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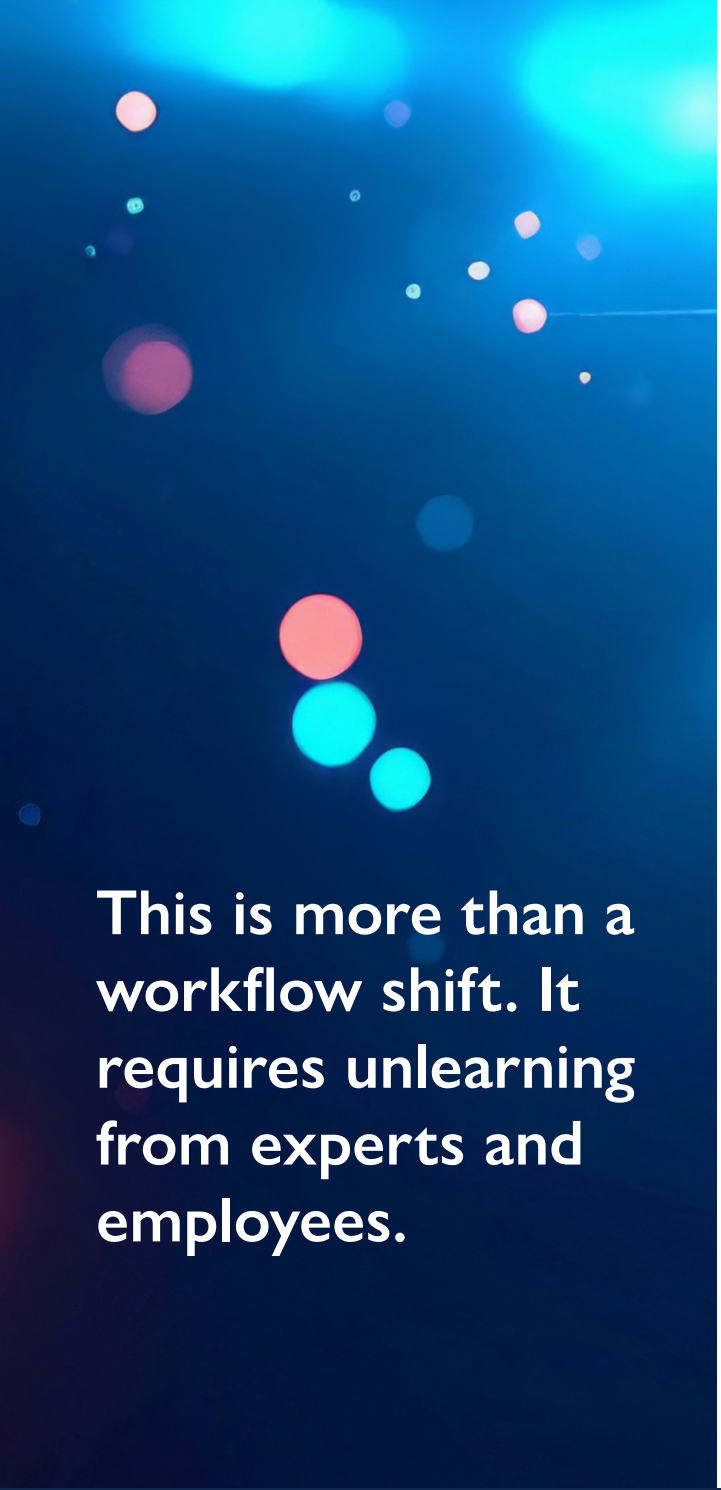
[3] *Wilson, R.C., Shenhav, A., Straccia, M. & Cohen, J.D. (2019). "The Eighty Five Percent Rule for optimal learning." Nature Communications, 10, 4646.*
[4] *Sweller, J. (1988). "Cognitive load during problem solving: Effects on learning." Cognitive Science.*



This is more than a workflow shift. It requires unlearning from experts and employees.

doesn't provide guidance on what they have to stop doing to realize the transformational benefits of new tools.

Unlearning does not automatically happen when organizations deploy new learning tools. It requires cultural rewiring that actively shapes the norms surrounding the work so that people can accept and adopt new behaviors. Unlearning and cultural rewiring change the context around the new tool, including the processes, expectations, and mindsets that no longer apply. Without this intentional focus, humans naturally default to old workflows. This isn't deliberate resistance; it is a function of how people learn.

Organizations can support unlearning by fostering the right environment for it. Employees need the psychological safety—the permission—to stop behaviors that they have been expected to perform for years. They need to be able to point out places where unlearning must happen without fear of retribution. Leaders should champion the unlearning, rewarding the new behaviors while disincentivizing old ones. The focus isn't perfection. It should be on making progress by practicing clear, actionable behaviors every day. As behavioral science expert Angela Duckworth says, "To facilitate durable behavior change, it is helpful to coach people to make if-then plans that put cues in place to trigger desirable behaviors."[5]

INTRODUCING IP GPT

The 19th Air Force's Flying Training Center of Excellence is developing "IP GPT," an AI chatbot trained on aviation manuals and official guidance to help student pilots and instructors find procedures fast to improve decision-making, performance and training consistency. SAIC is supporting this training modernization through pairing legacy software with simulator-based innovation that expands access, helps scale instructor capacity and speeds learning. To make the most of this tool, instructors must unlearn the assumption that being the expert means knowing the answer and embrace a new role in validating the answer that IP GPT provides.

Including leaders in the unlearning is key to teaching unlearning systemically, which is essential for rewiring the culture. Instead of expecting unlearning to happen by accident, organizations should build dedicated time for it into the rhythm of work and encourage employees to share their strategies with each other in a community of practice.

Unlearning is especially important for AI-based learning. This learning flattens organizations, upending "where" expertise comes from and "who" the experts are. This is a consequential shift for government given its hierarchical nature. Together, new learning models and AI are breaking down longstanding hierarchies. Now, experts don't only provide knowledge – they also validate the knowledge that AI tools generate. This is more than a workflow shift. It requires unlearning from experts and employees.

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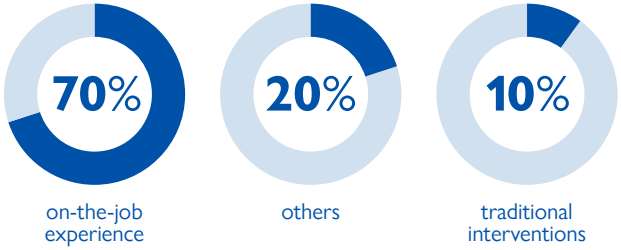
[5] *Duckworth, A.L., Milkman, K.L. & Laibson, D. (2018). "Beyond Willpower: Strategies for Reducing Failures of Self-Control." Psychological Science in the Public Interest, 19(3), 102–129.*

How to build a strong foundation for outcomes

Technology-powered learning works in the context of strategy, people and processes. Building the right foundation is critical. The stronger it is, the better the outcomes agencies can expect. Focus on these fundamentals:

Anchor strategy in mission-critical skills requirements. Meaningful human performance strategies demand clear skills requirements as the foundation. While formal learning is essential, learning happens organically as well. The long-established 70-20-10 model remains operationally relevant: 70% of learning happens on-the-job, 20% comes from others and 10% comes from traditional interventions. As the lines between these categories blur in the new world of work, what matters most is building an integrated learning ecosystem where AI provides a seamless flow of knowledge, coaching, and practice directly within the workflow itself.



Establish true change management. No matter the technology enablement, learning and development programs succeed or fail on employee buy-in and adoption. This makes strong change management non-negotiable. Change programs should reflect goals, targeted skills, why they are mission critical, and how they align with organizational requirements and individual career progression. Employees should understand what skills and competencies are required for success and how to develop them. Change without change management undermines readiness.

Design for flexible learning experiences. Modern learning approaches have evolved from isolated learning events to programs designed for learning in the flow of work. This is breaking up learning into discrete components or micro moments that happen in daily operations. Technology-enabled tools are well suited for this flexible learning and have largely driven this shift. Too much flexibility can cause unnecessary complexity. To avoid this, provide multiple pathways for learning but ground them in core requirements and standards for everyone.

Adhere to humans-in-the-loop principles. Technologies that enable human development and learning are not the end product. Human performance is. Avoid adopting emerging training technologies simply because they are hyped. Instead, ground decisions in an understanding of how your workforce actually develops skills and capabilities. In addition, account for limitations in the physical environment such as remote locations or deployed environments where connectivity problems and unpredictable conditions limit the viability of tech-enabled solutions.

Develop metrics and build in adaptability. When developing learning programs, establish baselines and success criteria for what good looks like from the start. Monitor performance data continually to identify impacts early and adjust quickly. To ensure that programs evolve with fast-moving operational realities, include both proven, standardized solutions and agile, needs-based solutions that can more immediately address new skills requirements.

Staying ahead of the readiness curve

Workforce readiness is essential. But with the pace of change accelerating, the question is: What exactly do we need our people to be ready for? While the answers aren't always clear, technology-powered learning and development can improve agencies' readiness. The goal is progress over perfection through rapid prototyping, iteration, and fail-fast strategies. Learning systems developed like this are human centered and built to evolve—exactly what's needed in today's mission environments.

How SAIC Can Help

SAIC integrates emerging technology securely and in real time into mission-critical operations that modernize and enable national imperatives. At SAIC, we have mission integration down to a science. We help defense, intelligence and civilian organizations across the federal government to:

Accelerate deployment of modern, mission-proven tech to frontline operators

- AI Orchestration
- Secure Multi-Cloud
- Digital Engineering
- Agile Delivery

Increase productivity and boost operational capabilities

- App Modernization
- DevSecOps
- Zero Trust
- Modeling and Simulation

Drive mission value and operational advantage from data

- Data-Centric Architectures
- Cross-Domain Data Sharing
- AI at the Edge
- Actionable Intelligence

About the SAIC 2025 U.S. Federal Leaders Mission Integration Survey

SAIC surveyed 153 respondents from the U.S. Armed Forces and federal government agencies to understand the perspectives of federal defense, intelligence and civilian leaders on the implementation, challenges and potential of mission integration. Respondents are senior leaders who lead, manage and make decisions regarding people, programs, infrastructure and mission activities, and are responsible for mission outcomes. The online survey was conducted by Market Strategy Group between May 9, 2025 and May 22, 2025.

27-0155

About the Authors

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