



In NCO Academies that focus on leader development, technological advancements may enhance critical thinking skills through the proficient use of adaptive learning platforms. (U.S. Army photo by 1st Lt. Katherine Sibilla, graphic by *NCO Journal*)

Digital Literacy: Maximizing AI and VR Success in NCOPD

By Retired Sgt. Maj. Dietrek G. Louis, M.Ed. and Dr. Ruth A. Busby

Aviation Center of Excellence

“Technology will not replace great teachers, but technology in the hands of great teachers can be transformational.” George Couros, teaching, learning, and leadership consultant, keynote speaker and author (2024).

Swiftly developing emerging technologies and their assimilation into military training and development programs require a more intentional focus on effective integration.

Incorporating advancements into the learning process takes more than altering curriculum; learners must possess the skills and knowledge to use new innovations.

Currently, artificial intelligence (AI) and virtual reality (VR) are two of the most widely used tools transforming training and development in civilian and military education programs.

In NCO Academies (NCOA) that focus on leader development, technological advancements may enhance critical thinking skills through the proficient use of adaptive learning platforms.

For initial military training (IMT) institutions that focus on technical skills, virtual reality mockups can provide students with real-world simulations that provide real-time performance feedback.

However, digital literacy is often overlooked during efforts to integrate new tools. Eshet (2004) defined digital literacy as the necessary competencies and skills required



Placing learners in realistic operational settings to gain needed hands-on experience is VR's most significant advantage during technical training courses. It has proven beneficial in a wide variety of industries. (U.S. Army photo by Lt. Col. Hayden Howell)

to navigate and understand a fragmented and complex information ecosystem.

As subcomponents of digital literacy, AI and VR literacy provide instructors and students with the ability to understand, navigate, and maximize the technologies' potential advantages.

This article will highlight some benefits of AI and VR, the importance of digital literacy as a necessary skill to employ this technology, and potential strategies to improve digital literacy among instructors and students in enlisted training and development programs.

Army's Stance on Emerging Technology in Enlisted Education

Currently, the Army is implementing a modernization strategy that includes incorporating AI and other technology into enlisted education. Its broader goal is to enhance training effectiveness and flexibility.

Emerging technologies are being leveraged to support adaptive learning and scenario-based training to ensure NCOs are prepared for complex environments (Volkwine & Lusher, 2024).

The Army Learning Concept for 2030 promotes AI and other technology to create personalized learning experiences, advance competency-based education, and refine instructional methodologies (U.S. Army Training and Doctrine Command, 2024).

A key focus of the Army's modernization effort is to transform the NCO Professional Development System.

While AI presents significant opportunities for improving enlisted education, there are a few challenges. The Army must address concerns related to AI bias, data security, and the need for instructor training to effectively implement these tools. Ethical considerations

are also a priority, ensuring that AI is used to support, rather than replace, human judgment in military training.

By integrating AI into enlisted education, the Army aims to foster adaptive learning, increase training efficiency, and enhance mission readiness, aligning with its long-term modernization goals.

AI and VR Benefits

AI-driven adaptive platforms create learning experiences that can be tailored to individual needs, and VR offers immersive environments that reinforce experiential learning (Chalkiadakis et al., 2024).

Thoughtfully and effectively integrating these tools into enlisted training and development may serve as an investment in human capital growth.

AI, when used wisely, can prepare students for realistic conditions by enhancing critical thinking. Generative AI software like Microsoft Copilot, when incorporated into the learning environment, can encourage analytical and innovative thinking that prepares learners for an ever-changing environment (Abramson, 2023).

Incorporating similar tools in NCO leadership courses may develop the skills needed to apply learned ideas rather than just recalling facts. AI-powered learning platforms can provide tailored instructions that ensure NCOs grasp leadership concepts used in ethical decision-making.

AI-driven curricula replicate real-world scenarios, enabling learners to develop skills needed to plan, manage, and lead in a dynamic and evolving landscape.

Like AI, VR provides learners and educators with a means to improve learning outcomes. It enhances experiential learning, reducing the gaps between theory and practical application to better achieve learning objectives (Lin et al., 2024).

Simulation training involves replicating practical conditions to develop technical skills that may be applied during real-world events (Harris et al., 2023).

Placing learners in realistic operational settings to gain needed hands-on experience is VR's most significant advantage during technical training courses.

The technology has proven beneficial in a wide variety of industries.

The aviation community is a great example. Pilot training incorporates advanced flight simulators that develop student skills while reducing risk and training cost (Sala et al., 1998).

Incorporating VR tools in technical training has also shown an improvement in student engagement and academic success (Lin et al., 2024). While AI and VR

provide several benefits, their effectiveness is dependent on instructors and students with the necessary digital literacy to successfully integrate these tools into the learning environment.

Inadequate Digital Literacy

The digital literacy gap among instructors and students may lead to challenges that can hinder integration of emerging technologies. One of the consequences that may result from the digital literacy gap is the inability to properly use advancements to enhance training.

Not using available resources can result in waste, leading to a poor return on technology investments. Not having required competencies could also lead to training delays and inefficiencies. Furthermore, instructors and students who don't navigate and understand emerging technologies may avoid using new advancements altogether.

Digital literacy is a much-needed skill for all personnel when it comes to training and developing NCOs and Soldiers. A recent study suggests that digital literacy is critical for leveraging technologies because the acquired knowledge provides navigation, interpretation, and utilization skills, which enhance technology use in the learning environment (Radianti et al., 2023).

It is safe to assume that instructors with strong digital competencies employ innovative technologies better which, in turn, improves student engagement and achievement.

In contrast, instructors who lack digital literacy are a leading factor in poor teaching practices and reduced student commitment.

Improving Digital Literacy

Developing digital skills among instructors and learners requires a strategy that encompasses targeted training, supportive organizations, and continuous education.

There are several potential methods to improve member knowledge. Most organizations have people with high digital literacy. Taking advantage of them during leader professional development (LPD) may provide organizations with a practical means to improve workforce skills.

Leadership support through professional development and mentoring sessions may help create a digital culture responsive to technological advancements.

Another potential method could include adding digital literacy to the curriculum at each level of NCO professional military education (PME). A recent study concluded that integrating digital literacy in academic programs increases user confidence and engagement when interacting with immersive technologies (Radianti et al., 2023).

Considering similar strategies may help institutions develop NCOs and Soldiers who are not just capable, but agile, in the digital world.



AI-driven curricula replicate real-world scenarios, enabling learners to develop skills needed to plan, manage, and lead in a dynamic and evolving landscape, enhancing experiential learning, reducing the gaps between theory and practical application to better achieve learning objectives (Lin et al., 2024). (U.S. Army photo by Sgt. 1st Class Kelvin Ringold)

Reflection

Digital literacy is imperative when integrating AI and VR into military education programs. It is critical that instructors and students develop the necessary skills to fully engage with emerging technologies to maximize their capabilities.

Lacking those skills can hinder training efficiency, return on investment, and member confidence. However, implementing digital literacy programs in LPD and PME curricula may improve digital competencies.

Prioritizing digital literacy may enhance learning outcomes and ensure that NCOs and Soldiers are equipped with the skills to lead in an ever-changing technological environment. ■

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Retired Sgt. Maj. Dietrek G. Louis is a lead instructional system specialist for the Aviation Center of Excellence Quality Assurance Office, Joint Base Langley Eustis, Virginia. During his 27-year career, he served as the senior enlisted advisor to the commander of the U.S. Army Medical Research Institute of Infectious Disease and is a former assistant chief of education at the SGM-A in addition to other leadership positions. He holds a bachelor's degree in business from Liberty University; a Master of Education Curriculum and Instruction from Liberty University; a Master of Instructional Design from Western Kentucky University; a Master of Education Adult Learning Theory from Pennsylvania State University; and is a current Doctor of Education Student at Liberty University.

Dr. Ruth A. Busby is an instructional system specialist for the Aviation Center of Excellence Quality Assurance Office, Fort Rucker, Alabama. Over the course of her 37-year career, she served as a professor and administrator in various civilian roles as well as an instructional system specialist for the U.S. Army and Air Force. She held leadership positions in higher education including department chair and executive director of academics and research. She holds bachelor's and master's degrees in education and administration and a Doctor of Education in Curriculum and Instruction from the University of West Florida. She has published more than 15 scholarly articles and has been awarded 17 grants on topics including brain-compatible learning, teaching strategies, and mentoring.



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