pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

DIGITAL TECHNOLOGIES AS A TOOL FOR ENHANCING MILITARY EDUCATION EFFECTIVENESS

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Annotatsiya: Ushbu maqola raqamli texnologiyalarning harbiy ta'lim samaradorligiga ta'sirini adabiyotlar tahlili orqali o'rganadi. Simulyatsiya tizimlari, sun'iy intellekt va masofaviy ta'lim platformalarining zamonaviy harbiy tayyorgarlikdagi o'rni muhokama qilinadi. Tahlil shuni ko'rsatadiki, raqamli vositalarni integratsiyalash harbiy kadrlar tayyorlash sifatini sezilarli darajada oshiradi.

Kalit so'zlar: raqamli texnologiyalar, harbiy ta'lim, simulyatsiya, sun'iy intellekt, masofaviy ta'lim, kadrlar tayyorlash.

Аннотация: Настоящая статья исследует влияние цифровых технологий на эффективность военного образования посредством анализа научной литературы. Рассматриваются роль симуляционных систем, искусственного интеллекта и платформ дистанционного обучения в современной военной подготовке. Анализ показывает, что интеграция цифровых инструментов существенно повышает качество подготовки военных кадров.

Ключевые слова: цифровые технологии, военное образование, симуляция, искусственный интеллект, дистанционное обучение, подготовка кадров.

Abstract: This article examines the influence of digital technologies on the effectiveness of military education through a comprehensive literature review and analytical framework. The research investigates how military training facilities use simulation systems together with artificial intelligence tools and distance learning platforms. The results demonstrate that military training outcomes improve through systematic implementation of digital instruments which increase training quality and accessibility and provide measurable results.

Keywords: digital technologies, military education, simulation systems, artificial intelligence, distance learning, personnel training, pedagogical innovation.

Introduction. The digitalization of social and institutional life during the twenty-first century has brought about fundamental changes to military education. Worldwide military forces need more personnel who possess advanced technological skills because they face increasingly difficult operational challenges. Military instruction relies on digital technologies which function as essential elements for creating successful educational environments. According to Johnson and Goldstein [1], the military training process has undergone a fundamental change through the inclusion of digital learning environments which hold the same importance as mechanized warfare introduction. Military educational institutions operate as models for higher education reform which extends beyond military training because of their international reach while serving as educational institutions that exist in multiple countries which include post-Soviet states that currently modernize their defense systems [2]. The government of Uzbekistan has implemented comprehensive educational reforms across its military and civilian higher education institutions while declaring digital integration to be an essential national development goal [3].

Methodology and Literature Review. The methodological foundation of this study rests on a systematic review of scholarly literature. The foundational theoretical framework draws on constructivist learning theory which Vygotsky developed and later educational technology researchers modified. Military education research now uses constructivism to include experiential learning and simulation-based training which uses digital tools to create authentic operational environments that enable real skill development and decision-making training.

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

Fletcher [5] provides one of the most comprehensive treatments of this framework by documenting his research on computer-based military training for three decades which showed better learning outcomes than traditional classroom teaching methods. Russian military education has developed its digitalization methods through systems theory and competency-based education models. Military educators Barabanshchikov and Mutsinov [6] argue that organizations should implement digital technologies after establishing their educational objectives because they should not base development on current technological options which leads to inefficient military training processes through excessive focus on technology implementation.

In post-Soviet educational systems this viewpoint shows its strongest impact because institutional resistance together with infrastructure limitations create conditions which result in surface-level digital adoption that fails to bring about fundamental changes to teaching methods. Zholdasbekov and Nurmagambetov [7] writing in the Central Asian academic tradition state that successful digital integration into military and technical education requires simultaneous changes to faculty development programs together with assessment methods and institutional governance frameworks. Simulation-based training occupies a particularly prominent position in the scholarly literature on digital military education. Virtual and augmented reality systems have been developed and implemented across multiple military establishments to replicate high-stakes operational scenarios which include medical triage under fire and complex combined-arms tactical exercises [8].

Results and Discussion. The reviewed literature establishes a unified view which shows digital technology implementation in military training programs achieves certain objectives but also faces multiple obstacles. The most reliable research result shows that simulation and computer-based instruction deliver learning results which are equal to or better than traditional teaching methods while needing less time and resources to reach each learning goal. The efficiency dividend provides military organizations with strategic value because they must operate under restrictions that limit their training time and access to trained personnel and their funding resources. Military personnel can use digital platforms to learn at various locations and times because the platforms support both online and offline learning methods which are essential for their active duty service [8].

The literature establishes essential requirements which digital tools must meet to achieve their teaching capabilities. First, the design quality of digital learning materials must be grounded in sound instructional science; poorly designed simulations or algorithmically shallow adaptive systems can produce illusions of competence without the underlying conceptual and procedural mastery that genuine military effectiveness requires [9]. Second, institutional culture must be receptive to pedagogical innovation; hierarchical military organizations may resist the learner-centered, iterative, and error-tolerant approaches that digital learning environments typically presuppose. Third, Makhkamov [2] shows that educational reforms in Uzbekistan face challenges because urban and rural educational institutions have different levels of access to digital training resources which create systemic inequalities that make it harder for national military forces to achieve their competency goals.

Conclusion. The evidence assembled through this literature review firmly establishes that digital technologies constitute a potent and multifaceted instrument for enhancing the effectiveness of military education when deployed thoughtfully and within an enabling institutional framework. Simulation systems, artificial intelligence-driven adaptive learning, and distributed digital platforms each contribute distinct pedagogical affordances that traditional training methods cannot replicate. At the same time, the scholarly consensus cautions against technological determinism, insisting that the transformative potential of digital tools is realized only through careful instructional design, sustained investment in educator development, and the cultivation of institutional cultures that value innovation, reflection, and evidence-based practice.

pISSN:2349-5707 Volume:13,Issue 2, February -2026 eISSN:2349-5715

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