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THE ROLE OF SIMULATION-BASED TRAINING IN IMPROVING THE OPERATIONAL READINESS OF MILITARY PERSONNEL

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Abstract. This article examines the role of simulation-based training in improving the operational readiness of military personnel within the framework of modern military education. Particular attention is paid to the integration of simulation technologies, scenario-based learning, virtual training environments, and practical exercises into the professional development of military personnel. The study is based on a theoretical analysis of military pedagogy, educational methodology, and contemporary research on simulation-based learning. It explores how simulated learning environments can contribute to the development of professional competence, decision-making abilities, communication, teamwork, adaptability, and psychological preparedness.

Keywords: simulation-based training, military education, operational readiness, professional competence, virtual learning environment, scenario-based learning, military personnel, educational technology.

INTRODUCTION. The development of modern military education requires continuous improvement in the methods and approaches used to prepare military personnel for professional responsibilities. Contemporary military environments place considerable demands on the knowledge, practical abilities, psychological preparedness, communication skills, and adaptability of military specialists. In this context, traditional approaches based exclusively on theoretical instruction are not always sufficient to ensure the comprehensive professional development of military personnel. There is an increasing need for educational approaches that combine theoretical knowledge with practical experience and provide opportunities for learning in conditions that resemble real professional situations.

METHODS. The study employed a qualitative theoretical and analytical research approach. It was based on the examination of academic literature related to military pedagogy, professional training, educational technologies, and simulation-based learning. Particular attention was given to Uzbek-language publications addressing military education and the pedagogical preparation of military personnel, alongside international research examining the effectiveness of simulation-based educational approaches.

RESULTS. The theoretical analysis demonstrates that simulation-based training can contribute to the improvement of operational readiness through several interconnected educational dimensions.

Development of practical professional competence. One of the principal advantages of simulation-based training is its ability to establish a connection between theoretical instruction and practical professional activities. In traditional educational environments, military personnel may acquire substantial theoretical knowledge without having sufficient opportunities to apply it in complex educational situations. Simulation-based learning addresses this limitation by creating structured environments in which learners can demonstrate their knowledge through practical tasks.

Such educational activities may include simulated communication exercises, coordination assignments, emergency response scenarios, leadership situations, and professional problem-solving activities. These exercises enable learners to understand the practical implications of theoretical concepts and develop greater confidence in applying their knowledge.

Improvement of decision-making and critical thinking. Operational readiness is closely associated with the ability to analyze information, recognize problems, evaluate possible solutions, and

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make justified decisions. Military personnel frequently encounter professional situations in which decisions must be made under conditions of uncertainty, limited information, and time constraints.

Simulation-based educational environments can reproduce selected decision-making challenges without exposing learners to the consequences of actual operational situations. Within such environments, instructors can introduce changing circumstances, incomplete information, communication difficulties, and competing professional priorities.

The educational value of these scenarios lies not simply in obtaining a correct answer but in developing the ability to explain and justify a decision. Learners can be encouraged to analyse the information available, identify relevant factors, compare alternatives, and reflect on the possible consequences of their choices.

Strengthening communication and teamwork. Professional readiness is not determined solely by individual competence. Effective communication and cooperation are also essential components of military professional activity. Military personnel must be able to exchange information clearly, understand assigned responsibilities, cooperate with colleagues, and maintain effective communication within professional teams.

Simulation-based activities create opportunities to practise these competencies in structured group situations. Participants may be assigned different educational roles and required to cooperate in solving a common problem. Such activities help develop communication skills, mutual understanding, responsibility, and coordination.

Development of psychological preparedness and adaptability. Another important result of the theoretical analysis concerns the relationship between simulation-based learning and psychological preparedness. Professional situations may involve uncertainty, unexpected changes, increased responsibility, and emotional pressure. Therefore, military education should provide opportunities to develop adaptability, self-control, concentration, and the ability to maintain effective professional behaviour in challenging circumstances.

Simulation-based exercises can introduce controlled educational challenges that encourage learners to manage uncertainty and adjust their decisions when circumstances change. Through repeated participation, learners become more familiar with the process of analysing unfamiliar situations and responding in a structured manner.

Assessment and feedback as essential components of simulation-based training. The effectiveness of simulation-based training depends significantly on the quality of assessment and feedback. Participation in a simulation does not automatically guarantee professional development. Learning outcomes must be identified, evaluated, and discussed.

A comprehensive assessment system should consider several dimensions:

- **Knowledge application:** the ability to use theoretical knowledge in practical educational situations.
- **Decision-making:** the ability to analyse information and justify decisions.
- **Communication:** the ability to exchange information clearly and appropriately.
- **Teamwork:** the ability to cooperate and fulfil assigned responsibilities.
- **Adaptability:** the ability to respond appropriately to changing educational conditions.
- **Reflection:** the ability to identify strengths, weaknesses, and areas requiring further development.

Assessment may combine instructor observation, structured performance checklists, individual reflection, peer feedback, and scenario-based evaluation.

Feedback should be specific, constructive, and connected to clearly defined learning objectives. Rather than simply identifying mistakes, instructors should explain why a particular performance was effective or ineffective and indicate how learners can improve their future performance.

The analysis suggests that a structured feedback system transforms simulation from an isolated educational activity into a continuous professional development process.

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DISCUSSION. The results of the theoretical analysis indicate that simulation-based training has considerable potential for improving the quality of military education. Nevertheless, its effectiveness depends on how appropriately it is integrated into existing educational programmes.

An important issue concerns the relationship between simulation-based training and traditional methods of military instruction. Simulation should not replace theoretical lessons, field-based education, practical exercises, or instructor-led activities. Instead, it should complement these approaches by providing additional opportunities for controlled practice and performance assessment.

In this respect, the principles of military pedagogy developed by Uzbek scholars remain relevant. Raximov (2021) and Uzoqov (2021) emphasize the psychological and pedagogical foundations of military personnel education. These approaches suggest that the organization of military training should take into account not only the content of instruction but also the individual characteristics, professional responsibilities, and educational needs of military personnel.

A further issue is the availability of appropriate educational resources. Advanced simulation systems and virtual reality technologies may require considerable financial investment, specialized equipment, technical maintenance, and instructor training. Therefore, military educational institutions should consider different levels of simulation-based learning rather than focusing exclusively on expensive technological solutions. For example, structured role-play, computer-assisted educational models, interactive decision-making exercises, and scenario-based group activities may provide valuable learning opportunities even when sophisticated simulation equipment is unavailable.

The competence of instructors represents another decisive factor. Successful simulation-based education requires instructors who can formulate clear learning objectives, design relevant scenarios, observe learner performance, provide constructive feedback, and organize reflective discussions. Therefore, professional development programmes for military instructors should include methodological preparation for using simulation-based educational approaches.

Furthermore, assessment systems should be designed to measure educational progress rather than simply record participation. The use of transparent performance criteria can help institutions identify the extent to which simulation-based activities contribute to the development of professional competence.

For military educational institutions in Uzbekistan, the integration of simulation-based training should be based on national educational priorities, institutional resources, and the professional requirements of military personnel. The experience-based teaching model discussed by Satib-Aldiev (2018) and the methodological approaches presented by Sotvoldiyev (2010) can provide useful foundations for adapting simulation-based learning to the national military education context.

These recommendations emphasize that technological innovation should serve clearly defined educational objectives. The successful implementation of simulation-based training depends not only on the availability of digital tools but also on pedagogical planning, instructor competence, learner engagement, and systematic evaluation.

CONCLUSION. Simulation-based training represents a valuable educational approach for improving the professional competence and operational readiness of military personnel. The theoretical analysis conducted in this article demonstrates that its educational potential is associated with the development of practical skills, decision-making abilities, critical thinking, communication, teamwork, adaptability, and psychological preparedness. The principal advantage of simulation-based learning is its capacity to connect theoretical instruction with practical experience through structured educational scenarios. It allows military personnel to practise professional competencies, receive feedback, reflect on their performance, and improve their abilities within a controlled learning environment.

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