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Challenges of professionalisation of military formations of states in conditions of global conflicts: experience and best practices

Виклики професіоналізації військових формувань держав в умовах глобальних конфліктів: досвід та найкращі практики

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Abstract

The increasing complexity and scale of modern global conflicts necessitate the professionalization of military forces to ensure national security and international stability. This study analyzes the challenges and best practices in the professionalization of military formations, drawing upon the experiences of the USA, Israel, and Germany. Employing comparative analysis, system analysis, and SWOT analysis, the research identifies key challenges such as adapting to new technologies, personnel training and motivation, and integration of diverse military structures. The study also highlights best practices, including the adoption of cutting-edge technologies, effective training and motivation programs, and the establishment of integrated and flexible management structures. By providing a

Анотація

Зростаюча складність і масштаби сучасних глобальних конфліктів зумовлюють необхідність професіоналізації збройних сил для забезпечення національної безпеки та міжнародної стабільності. У цьому дослідженні аналізуються проблеми та кращий досвід професіоналізації військових формувань, спираючись на досвід США, Ізраїлю та Німеччини. Використовуючи порівняльний аналіз, системний аналіз і SWOT-аналіз, дослідження визначає ключові проблеми, такі як адаптація до нових технологій, навчання та мотивація особового складу та інтеграція різноманітних військових структур. Дослідження також висвітлює найкращі практики, включаючи впровадження передових технологій, ефективні програми

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comprehensive understanding of the professionalization process in the context of global conflicts, this research contributes valuable insights for countries developing their own military professionalization strategies.

Keywords: globalization, military conflicts, state military formations, training system of professional military personnel, state security.

навчання та мотивації, а також створення інтегрованих та гнучких структур управління. Забезпечуючи повне розуміння процесу професіоналізації в контексті глобальних конфліктів, це дослідження дає цінну інформацію для країн, які розробляють власні стратегії військової професіоналізації.

Ключові слова: глобалізація, військові конфлікти, державні військові формування, система підготовки професійних військових кадрів, державна безпека.

Introduction

In today's world, which is constantly under the influence of global conflicts, professionalisation of military forces is becoming an urgent need to ensure national security and international stability. With the growing complexity and scale of military operations, there is a need to build professional armed forces capable of responding effectively to today's challenges. The experience and best practices from around the world can become important guidelines in this process.

The purpose of this study is to analyse the challenges faced by states in the process of professionalising military formations in the context of global conflicts, as well as to study best practices and best practices in this area.

In view of the ongoing Russian-Ukrainian war in Europe, the issue of professionalisation of modern military formations is once again coming to the fore. Accordingly, the experience of creating professional military structures is a valuable material for scientific analysis. The growing importance of this issue calls for an in-depth study of historical and contemporary examples of army professionalisation, including reforms that have taken place in the armed forces of different countries.

The experience of countries that have successfully implemented the transition from a conscript to a professional army can provide important lessons for Ukraine, which will face the need to increase the efficiency and combat capability of its armed forces. Studying aspects such as military training, modernisation of weapons, introduction of new technologies and creation of an effective management system is key to formulating a strategy for the development of Ukrainian military forces.

In addition, an analysis of the economic and social consequences of army professionalisation will allow to assess its impact on the overall security of the state, economic stability and social integration. International cooperation and exchange of experience is also an important aspect, which will facilitate the integration of the Ukrainian armed forces into international defence structures and increase the level of their interaction with the armies of other countries.

Thus, the study of the experience of creating professional military structures not only raises the issue of increasing the effectiveness of the Ukrainian armed forces in wartime, but also contributes to the formation of a strategy for the long-term development of national defence, which is a prerequisite for ensuring stability and security in the region.

Objectives of the study:

- To study the main challenges faced by states in the process of professionalising military formations;
- To analyse current approaches to training and education of military personnel in some countries of the world;
- To identify best practices in the professionalisation of military formations that contribute to their effectiveness in global conflicts.

This study will provide a comprehensive understanding of the process of professionalisation of military formations and develop recommendations for improving their effectiveness in the face of current global challenges.

In today's world, which is constantly under the influence of global conflicts, the professionalization of the armed forces becomes critically important for ensuring national security and international stability. With the increasing complexity and scale of military operations, especially in the conditions of the Russian-Ukrainian war, the need to create professional armed forces capable of effectively responding to modern challenges is becoming especially urgent.

The war in Ukraine revealed a number of key aspects that relate not only to the tactics and strategy of conducting hostilities, but also to the need to modernize army structures. The professionalization of the Ukrainian Armed Forces can become a key factor in increasing their effectiveness and fighting capacity, especially in the conditions of a long-term struggle against an aggressor.

The experience of other countries that have successfully transitioned from a conscript army to a professional one is important for Ukraine. Attention to such aspects as military training, modernization of weapons, integration of new technologies and the creation of an effective management system can help shape the development strategy of the Ukrainian army.

It is also important to study the economic and social consequences of the professionalization of the army. This will allow to assess its impact on the general security of the state, economic stability and social integration. Of particular note are theoretical implications, such as the impact of professionalization on military doctrine and defense strategies, as well as practical implications, including the military's increased effectiveness in protracted conflicts and its ability to adapt to new forms of hybrid warfare.

In addition, international cooperation and exchange of experience will contribute to the integration of the Armed Forces of Ukraine into international defense structures, increasing the level of cooperation with the armies of other countries, which is an important condition for ensuring stability in the region.

Therefore, the study of challenges and best practices of professionalization of military formations is necessary not only to increase the effectiveness of the Armed Forces of Ukraine during war, but also to develop a long-term national defense strategy that will ensure security and stability in conditions of global conflicts.

Literature Review

Bat'kovskij, A.M., Kravchuk P.V. (2020) emphasise the importance of integration into global supply chains to improve the efficiency of the defence industry. They emphasise that globalisation provides access to new markets and technologies, which is an important factor in the professionalisation of military forces. This approach is also shared by Dunne, J. P., Sköns, E. (2021a), who note that the introduction of new technologies significantly increases the efficiency of military operations and the level of training of military personnel.

Harutyunyan, G. E., Davtyan, A. G. (2019) demonstrate that cooperation with international organisations such as NATO and the EU significantly increases the efficiency of national defence industries. They note that international organisations provide financial support, facilitate technological exchange, and set standards that help professionalise the military. This is confirmed by Reis, J. C. (2021), who examine international cooperation in the field of military training, emphasising that cooperation between countries allows for the exchange of experience and best practices.

Fursina N. (2021) emphasises the importance of internal reforms to increase the effectiveness of military formations. He notes that the introduction of new technologies and raising training standards are key factors in this process. This opinion is also shared by Powell-Turner, J., Murgatroyd C. (2021) and Truba, R., Kozin, S., Vykhrystiuk, A., Kuzmenko, D., Bulkat, M. (2023)., who analyse the effectiveness of the centralised command and control model in the US Army, noting that this model allows for a high level of coordination and control.

López J., Garcia R. (2020) examine the adaptation of military training to modern warfare. They emphasise the importance of modernising curricula to meet new threats and challenges. In this context, Akimkina, D., Khrustalev, E., Baranova, N., Loginova, D. (2021) and Namestiuk (2023) explore the integration of artificial intelligence into the military training system, emphasising that the use of artificial intelligence can increase the effectiveness of curricula and military training.

Pasternak I. et al., (2023) analyses the issues of cooperation between the military and private companies in the field of military training. They note that such cooperation allows attracting additional resources and technologies, which is an important factor in the professionalisation of military formations. Newlove-Eriksson L., Eriksson J. (2023) emphasise the importance of continuous training and professional development of military personnel, noting that the implementation of continuous training programmes allows maintaining a high level of professionalism of military formations.

Zlyvko, S., Puzyrnyi, V., Nishchymna, S., Tkachenko, O., and Samofalov, O. (2023) emphasize the importance of fighting corruption as a key factor in the development of military formations. They emphasize that effective anti-corruption measures contribute to increasing the combat capability of the army, ensure proper management of resources and contribute to strengthening the trust in military institutions both on the part of citizens and international partners.

The literature review shows that although many aspects of the professionalisation of military forces have been thoroughly researched, there are some areas that remain insufficiently explored. These include the use of new technologies in military training, such as virtual reality and artificial intelligence; the impact of cultural and social factors on the effectiveness of military training; and the specifics of professionalisation of military forces in developing countries.

Taking into account the above aspects, further research is aimed at filling the existing gaps and providing new insights into the professionalisation of military formations, which is extremely important in the context of global conflicts.

Methodology

The main stages of the study are shown schematically in Fig. 1.

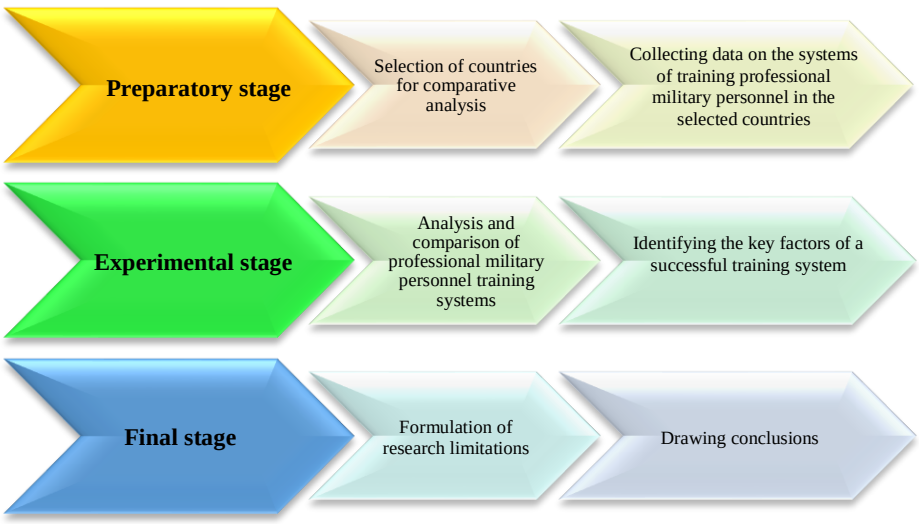

Figure 1. Visualised research design.

The chosen procedure ensures a systematic and comprehensive approach to studying the role of the system of professional military personnel training in ensuring national security, allowing to take into account international experience and formulate reasonable recommendations.

Three countries with different approaches to professional military personnel training were selected for the study. The sample includes: USA, Israel and Germany. The US training system includes numerous military academies, specialised training centres and intensive advanced training programmes for military personnel of all ranks. Israel's military forces have a high level of professionalism due to constant training, participation in real combat operations, and an emphasis on technological innovation. Germany's military training system is based on the integration of academic education and practical skills, as well as on close cooperation with other NATO member states.

The selection of these countries allowed us to explore different models of military training and assess their effectiveness in different contexts. The analysis of these examples has helped to identify universal strategies and adaptive approaches that may be useful for other countries in their efforts to professionalise their military forces.

Each country was analysed for 2020-2024 in terms of the application of the main instruments of professionalisation of military formations. The documents used included official government strategies. Policy documents, such as defence budgets, defence industry development programmes, and documents of international organisations such as NATO, the EU and the UN were also considered.

The following research methods were used in writing this paper:

- A method of comparative analysis to study the practices of countries in the field of training professional military personnel. The method of comparative analysis allowed for a detailed study of different approaches to the professionalisation of military formations and their results. The identified effective practices can be adapted and used to improve the system of professional military personnel training in other countries, taking into account their specific conditions and needs;
- A system analysis method to determine the interaction between the elements of the system of training professional military personnel (military academies and educational institutions, training programmes and centres, innovative training methods) and their impact on the overall effectiveness of professionalisation of military formations;
- SWOT analysis to identify the strengths, weaknesses, opportunities and threats related to the professional military education system and its impact on the defence sector.

The chosen approach to the research allows to comprehensively and systematically consider the role of the system of professional training of military personnel in ensuring national security. This makes it possible to take into account the experience of different countries and formulate well-founded recommendations for improving the Ukrainian system.

Three countries were chosen for the study - the USA, Israel and Germany - which demonstrate different approaches to the training of military personnel. The US is known for its training system, which includes military academies, specialized centers, and intensive training programs for all levels of the military. In Israel, the emphasis is on constant training, participation in real combat operations and the introduction of technological innovations. Germany, in turn, combines academic education with practical skills and closely cooperates with NATO countries.

The choice of these countries is explained by their unique training models, which allows us to evaluate different approaches to the professionalization of armies in different political and economic contexts. For each country, the analysis was conducted for the period 2020-2024, using sources such as official government strategies, defense budgets, military industry development programs, as well as documents from international organizations, including NATO, the EU and the UN.

Data for the study were collected from a variety of open sources, including official government reports, analytical studies, publications by defense institutions and international organizations. Interviews with military experts and analysts also played an important role, which made it possible to obtain additional deep insights.

Several research methods were used for the analysis:

- The method of comparative analysis made it possible to investigate the approaches of each country to the professionalization of military formations and to identify key effective practices that can be adapted to other contexts;
- System analysis helped assess the interaction of various elements of training, such as academies, training programs and innovative training methods, and their impact on the overall combat capability of armies;
- SWOT analysis was used to determine strengths (availability of military academies, training centers and specialized programs; use of the latest technologies in training programs) and weaknesses (effectiveness of using resources to support training programs and modernization of the training base), opportunities (participation in international training programs and joint military operations) and risks

(the ability of the military training system to quickly respond to new threats and challenges) associated with the professional training systems of the military in these countries.

The described approach to the analysis helped to identify universal strategies and flexible approaches that can be useful for other countries, in particular for Ukraine, which seeks to improve the system of professionalization of its armed forces in the conditions of modern threats.

Results and Discussion

The US system of training professional military personnel is multi-level and comprehensive, covering academic education, specialised training, innovative methods and international cooperation (Fig. 2).

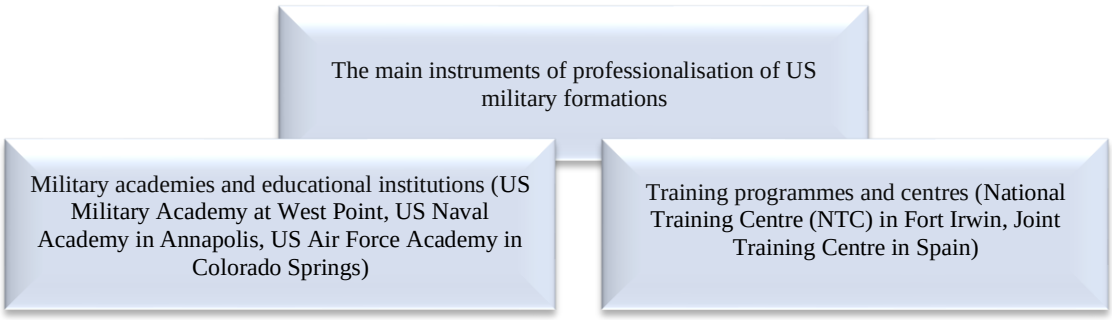

Figure 2. The US system of training professional military personnel.
Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

The United States has several leading military academies, such as the United States Military Academy at West Point, the United States Naval Academy in Annapolis, and the United States Air Force Academy in Colorado Springs. The United States Military Academy at West Point accepts approximately 1200 cadets annually from a total of over 10000 applications, which indicates a high level of competition and selection of the best candidates. These institutions provide high quality education focused on developing leadership skills, strategic thinking and technical competence.

The United States has several specialised training centres, such as the National Training Centre (NTC) at Fort Irwin and the Joint Training Centre in Spain. The NTC conducts more than 10 brigade combat team rotations annually, each with about 5,000 soldiers, ensuring a high level of training. These centres provide realistic training focused on preparing for combat operations in close-to-real conditions.

The US does not have compulsory military service, but offers numerous reserve programmes, such as the US Army Reserve (comprising over 200,000 soldiers, providing a significant reserve capacity) and the National Guard (mobilised over 100,000 soldiers to support local and international operations over the past 5 years). These programmes allow citizens to serve part-time while maintaining civilian professions.

In the United States, there is an Officer Candidate School (OCS) programme that trains officers for all branches of the armed forces. Professional military education courses focus on developing leadership skills. Servicemen and women undergo special training that teaches them to make quick and effective decisions in stressful situations.

US military personnel have access to advanced training and higher education programmes through various universities and training programmes, such as the Reserve Officers' Training Corps (ROTC). The ROTC trains about 6,000 officers annually, providing a high level of academic and military training.

Israel has one of the most professional and technologically advanced armies in the world. The main tools for professionalising Israel's military forces include a system of compulsory military service, specialised training programmes, innovative training methods, international cooperation and a high level of funding (Figure 3).

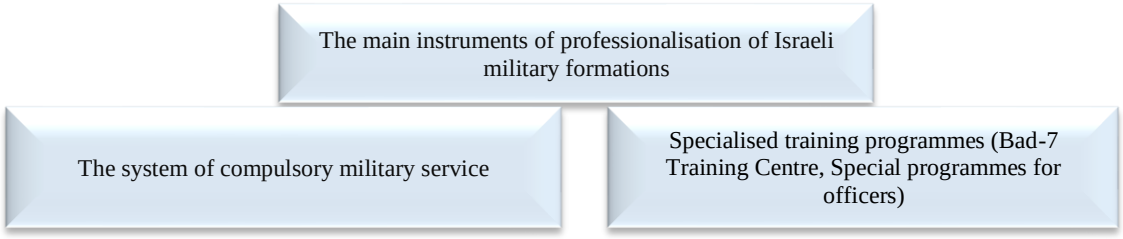

Figure 3. The system of training professional military personnel in Israel.
Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

Israel has a system of compulsory military service, which is the basis for the professionalisation of the army: for men, service lasts three years, and for women, two years. Every year, about 60,000 men and women are drafted for military service, which is almost 90% of young people of the relevant age. After completing their compulsory service, servicemen are obliged to serve in the reserve until they reach the age of 40, which ensures high mobilisation readiness.

The Israeli Defence Forces (IDF) has several specialised programmes to train highly qualified military personnel. Officer training programmes include training at military academies and specialised schools, such as the Bar Lev Officer School.

One of the key elements of Israeli military education is the Talpiot programme, which combines academic education with military training, giving cadets the opportunity to obtain a bachelor's degree in technical specialities and practical military skills.

Around 20 joint exercises are held annually with the armies of other countries, which helps to strengthen international relations. Servicemen and women have access to a variety of support programmes, including education and vocational rehabilitation after completing their service. More than 5,000 veterans receive psychological assistance annually through the Ministry of Defence's programmes.

Germany has a well-developed system for training professional military personnel, which includes intensive training, high selection standards, international cooperation and significant investments in technology (Figure 4). Military academies and educational institutions provide thorough training for future officers. Each year, the Federal University of the German Armed Forces (Universität der Bundeswehr) in Hamburg and Munich graduates about 1,000 officers who receive both military and academic education. Officer training lasts from 12 to 18 months, depending on the specialisation and level.

Figure 4. The system of training professional military personnel in Germany
Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

The German Armed Forces (Bundeswehr) has several specialised training programmes for military personnel. In particular, the Institute of Military Medicine and Healthcare trains medical specialists to provide medical care to military personnel in various conditions (about 500 medical specialists annually). The School of Command and Control (Führungsakademie der Bundeswehr) provides training for command staff and senior officers.

Germany actively uses modern technologies and innovative approaches in training its military. The use of simulators helped to reduce the cost of real training by 30% in 2023, while maintaining a high level of training. The ministries of defense of the above countries receive substantial budgets annually to finance the development, production and modernisation of military systems. This is one of the most important sources of funding for the system of training professional military personnel (Table 1).

Table 1.
Approved budget of the Ministry of Defence, USD billion, 2020-2024

Year	USA		Israel		Germany	
	Budget (billion USD)	Share of GDP (%)	Budget (billion USD)	Share of GDP (%)	Budget (billion USD)	Share of GDP (%)
2020	738,0	21,37	23,4	5,6	57,1	1,36
2021	740,5	22,99	24,2	5,5	63,8	1,57
2022	768,0	25,46	26,0	5,4	64,4	1,58
2023	773,0	26,86	27,5	5,6	50,0	1,55
2024	813,0	28,53	29,0	5,7	70,5	1,59

Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

The budget of the US Department of Defense continued to grow during the analysed period, reflecting its growing share of GDP. As of 2024, the budget is estimated at $813 billion, which is 28.53% of GDP. The budget increase reflects the need to modernise military equipment and maintain the global presence of the US military.

Israel has traditionally allocated a significant share of its GDP to defense due to the difficult geopolitical situation in the region. In 2024, the budget of the Ministry of Defense is $25.9 billion, which is 5.2% of the country's GDP. This allows maintaining high readiness of the armed forces and investing in the latest technologies.

Germany is gradually increasing its defense budget, reaching $70.5 billion in 2024. However, the share of GDP remains relatively stable at 1.5%, which is still below NATO targets. The budget growth is aimed at modernising the armed forces and improving cooperation within NATO.

The analysis of budget expenditures on professional training of military personnel allows us to assess the level of support and development of this strategic sector of the defence sector in different countries. It is especially important to consider the share of innovative projects in total expenditures, as this reflects the focus on technological progress and increasing the defence capability of states. Table 2 provides data on the level of public spending on professionalisation of military formations in the United States, Israel and Germany in 2020-2023, as well as the share of innovative projects in these investments.

Table 2.
Level of public expenditures to finance the system of professional military personnel training in 2020-2023

Year	USA		Israel		Germany	
	Budget expenditures (billion USD)	Share of innovative projects in total expenditures (%)	Budget expenditures (billion USD)	Share of innovative projects in total expenditures (%)	Budget expenditures (billion USD)	Share of innovative projects in total expenditures (%)
2020	68,3	21,37	20,0	8,1	22,5	9,5
2021	70,9	22,99	22,1	8,7	25,4	10,3
2022	75,2	25,46	24,3	9,0	27,0	13,5
2023	78,1	26,86	26,5	9,6	29,0	15,3
2024	85,3	28,53	27,2	10,3	32,5	15,5

Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

The approved budget for financing the system of professional military training is growing significantly every year, which indicates the priority of military spending in US policy. The budget increased from $68.3

billion in 2020 to $85.3 billion in 2024. The share of the budget allocated to innovative projects is also increasing, underscoring the desire to modernise and technologically improve the army. For example, in 2020, the share of innovative projects was 21.37%, while in 2024 it increased to 28.53%.

Budget expenditures on the professionalisation of Israel's military formations are steadily increasing, in particular due to the growth of expenditures on innovative projects. In 2020, the budget was $20 billion, of which 20% was allocated for innovative projects. By 2024, these figures increased to $27 billion and 27.2%, respectively. This reflects the importance of maintaining a high level of training and technical equipment for military personnel in a country with a high level of external threats.

Budgetary expenditures to finance the system of training professional military personnel in Germany are gradually increasing, but the share of innovative projects is much lower than in other countries. In 2020, the budget was $22.5 billion with a 9.5% share of innovative projects, and in 2024 it will be $32.5 billion with a 15.5% share. This may indicate a lower priority for technological innovation in the military sector compared to other countries.

Funding for professional military education in these countries reflects different approaches to national security and military preparedness. The United States and Israel focus on innovation and technology, while Germany takes a more stable but less innovative approach. The US spends the most on defence both in absolute terms and as a share of GDP, followed by Israel and then Germany.

These data point to differences in military policies and priorities of different countries, with the United States and Israel paying more attention to technological innovation and Germany taking a more conservative approach to defence spending. As a result, the introduction of new military technologies, in particular in the field of cybersecurity, intelligence systems, and automated control systems in the United States continues to grow at a significant pace (Figure 5).

The United States significantly increased funding for military innovation between 2020 and 2023. In 2022, research and development (R&D) funding for defence technologies reached $34 billion, accounting for about 4% of the total defence budget. This amount is expected to increase to $40 billion in 2024. The main areas of investment were artificial intelligence (AI), autonomous systems, hypersonic technologies, and air defence-related platforms (CSETs).

Israel is also actively investing in new military technologies, although specific figures may vary. The main investments are in cyber security, missile defence systems and unmanned aerial vehicles. It is estimated that Israel spends about $2 billion a year on innovative military technologies, which includes both public and private investments. These investments ensure a high level of readiness and technological superiority at the regional level.

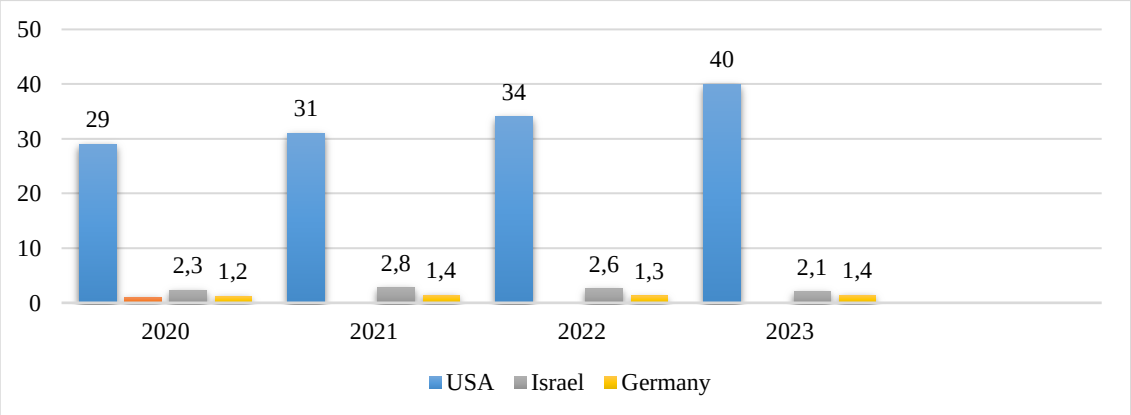

Figure 5. Financing of innovations in the military sphere, billion USD, 2020-2023.
Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023).

Germany is investing heavily in introducing new technologies into its armed forces. In 2023, the budget for military innovation was about $1.4 billion. The main areas of focus are digitalisation, modernisation of

armoured vehicles and development of cyber defence. An important element is also the integration of European defence projects and participation in joint research with other EU countries.

Thus, the professionalisation of military formations is a task of national importance aimed at ensuring the training of highly qualified military personnel. Specialised military education systems have been established in different countries, including higher military educational institutions, training centres and military schools. An important component of this system is the professional military education courses aimed at improving the qualifications of officers and NCOs (Table 3).

Table 3.
Characteristics of professional military education courses as an important component of the system of professional military personnel training.

Country	Description of the system of professional military education	Examples of courses and programmes	Features and accents
USA	The US system of professional military education includes multi-level programmes for all levels of military personnel	National Defence University	Focus on strategic planning and international relations
	Military educational institutions provide opportunities for officers and NCOs to take advanced training courses	Naval College	Development of leadership skills and strategic thinking
Israel	The Israeli system of professional military education is focused on intensive specialised training of military personnel	Courses for commanders of combat units	- Intensive hands-on training, focus on quick decision-making
	Particular attention is paid to practical exercises that simulate real combat scenarios.	Courses at specialised military schools	- Implementation of new technologies in combat training
Germany	Professional military education in Germany has a strong academic component, providing an interdisciplinary approach	Military Academy of the German Armed Forces	Study of international military law and crisis management
	Military academies provide both military and civilian knowledge.		Combining military knowledge with economics, politics and social sciences
Ukraine	The system of professional military education in Ukraine is being actively reformed, taking into account the best international practices	Advanced training courses in the Armed Forces of Ukraine, the National Guard and the State Border Guard Service	Adapting the experience of NATO and other international organisations
	It includes tactical training, study of the latest military technologies and international military law.		Focus on preparing for tasks in modern conditions

Source: compiled by the author based on (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023; Zhuravlov et al., 2020; Korauš et al., 2019; Krauss-Maffei, 2018; Nzeribe & Imam, 2018)

Each country adapts its approaches to the development of the military personnel training system in accordance with its national interests, strategic goals and available resources. It is important to balance domestic development, international cooperation and innovation to effectively respond to current security challenges. Table 4 presents a SWOT analysis to identify the strengths, weaknesses, opportunities and threats related to the professional military education system and its impact on the defence sector.

Table 4.
SWOT-analysis of the role of the system of training professional military personnel in the development of the defence industry of the USA, Israel, and Germany.

STRENGTHS	WEAKNESSES.
USA: high level of funding and innovation; strong R&D infrastructure; integration with the private sector. Israel: effective integration of technologies into the defence sector; high level of military personnel training; flexibility and speed of adaptation of new technologies. Germany: strong technological base; high level of education and training; participation in international defence projects.	**USA:** high costs of supporting innovation; dependence on technology, which can lead to vulnerabilities. **Israel:** limited resources compared to large countries; dependence on international assistance and partnerships. **Germany:** relatively low share of the budget for innovation; bureaucratic obstacles to the introduction of new technologies.
OPPORTUNITIES	**THREATS**
USA: expansion of innovation programmes; increased cooperation with allies and the private sector; development of new technologies. Israel: expansion of international partnerships; development of new defence systems; increased state funding. Germany: deepening cooperation within the EU; development of digital technologies; increased investment in the defence industry.	**USA:** threat of cyber attacks; technological lag due to rapid development of competitors; internal political changes. **Israel:** a constant threat of external conflicts; dependence on defence technology exports. **Germany:** the threat of terrorism and cybercrime; domestic political constraints on increasing the military budget.

Source: compiled by authors on the basis of (US Department of Defense, 2023; Israel Ministry of Defense, 2023; German Federal Ministry of Defense, 2023; SIPRI, 2023; IISS, 2023; Zhuravlov et al., 2020; Korauš et al., 2019; Krauss-Maffei, 2018; Nzeribe & Imam, 2018).

Based on the SWOT-analysis of the role of the system of training professional military personnel in the development of the defence industry of the USA, Israel and Germany, the following conclusions can be drawn:

1. The United States has a significant level of funding and a high level of innovation, which contributes to the development of advanced military technologies. Integration with the private sector allows for efficient use of resources to develop new systems and technologies. This creates a strong basis for maintaining national security and influencing the global defence industry. The high cost of innovation and dependence on technology can create vulnerabilities, especially in the event of cyberattacks or technological lags. This underscores the importance of continuously updating and protecting technology.

Expanding innovation programmes and increasing cooperation with allies and the private sector could further strengthen the defence industry. The development of new technologies opens up great opportunities to modernise the army and increase its effectiveness. The main threats include cyber-attacks, technological lag due to rapid development of competitors, and domestic political changes that could affect the level of funding and prioritisation of defence programmes.

2. Israel is known for its ability to quickly adapt new technologies and effectively integrate them into the military. The high level of training of military personnel and the flexibility of the system allow the country to maintain a high level of defence readiness in the face of constant threats. Limited resources compared to larger countries and dependence on international assistance may limit the scope for expansion and modernisation of the defence industry.

The expansion of international partnerships and the development of new defence systems create prospects for strengthening the country's defence capabilities. Increased government funding could allow for the development of new technologies and increase the effectiveness of military units. Persistent external threats and dependence on defence technology exports may limit the scope for long-term planning and investment in new projects.

3. Germany has a strong technological base and a high level of education and training. Participation in international defence projects and close cooperation with other EU countries allow Germany to remain an important player in the European defence industry.

A relatively low share of the budget for innovation and bureaucratic obstacles to the introduction of new technologies may limit the ability to rapidly modernise the army. Deeper cooperation within the EU, the development of digital technologies and increased investment in the defence industry are creating the conditions for increasing the efficiency and technological level of the army. The main threats include terrorism and cybercrime, as well as domestic political constraints on increasing the defence budget, which could affect the pace of modernisation and innovation.

The results of the study show that the professionalisation of military formations in different countries of the world is carried out in different ways, depending on national characteristics, financial capabilities and strategic goals. The reasons for the observed differences between the military training systems of the three countries are that:

- The United States has global military interests and actively participates in international conflicts and peacekeeping operations, which necessitates a large-scale, technologically equipped army with an emphasis on the development of leadership qualities, innovation and strategic planning ;
- Israel, being a country that is constantly under threat from neighboring states and terrorist organizations, is developing its military training system with an emphasis on real combat operations, rapid mobilization and the use of modern technologies to protect national security;
- Germany, as a member of NATO and the EU, has a training system focused on collective defense within the framework of European security and close cooperation with allies. Its military focuses on integrating military training with academic programs and interstate training.

In the context of the Russian-Ukrainian war, Ukraine is forced to adapt its military formations to new challenges and realities. This requires the introduction of modern approaches to the professionalisation of the army and effective selection and training programmes based on actual combat experience. Below are the key approaches and programmes being implemented in Ukraine (Table 5).

Table 5.
Key approaches and programmes implemented in Ukraine to improve the effectiveness of professional training of military units.

Approaches / programmes	Purpose	Features
Intensive combat training	Providing military personnel with the necessary skills for effective combat operations	● Use of real combat scenarios in training. ● Involvement of veterans and instructors with combat experience in training. ● Regular exercises and manoeuvres that simulate various combat situations.
Adaptation of Western standards and procedures	Raising the professional level of military personnel to NATO standards	● Use of methods and approaches used in the armies of NATO member states. ● Implementation of standards for planning and conducting operations, logistics and support. ● Training of military personnel under programmes developed in cooperation with international partners.
Control and command systems	Improving the effectiveness of military unit management	● Implementation of modern battle management systems. ● Use of digital technologies and communication systems to coordinate the actions of units. ● Preparing officers to manage operations in a rapidly changing combat environment.
Psychological training and rehabilitation	Ensuring the psychological resilience of servicemen and their adaptation after combat operations	● Psychological support programmes and training for military personnel. ● Rehabilitation centres for veterans, which provide medical and psychological assistance. ● Introduction of stress management and post-traumatic rehabilitation techniques.

Using the latest technology	Increasing combat capabilities of military personnel through modern technologies	● The use of unmanned aerial vehicles for reconnaissance and combat operations. ● Implementation of electronic warfare and cyber defence systems. ● Training military personnel to work with modern means of communication and control.
Military training centres and training grounds	Increasing the combat capabilities of the military through modern technologies.	● Establishment of training centres where training courses in various specialities are held. ● Use of training grounds to practice combat operations and tactical manoeuvres. ● Involvement of instructors with combat experience to conduct training.

Source: compiled by the author based on (Zhyzdyuk, 2024; Mityagin, 2023)

The introduction of modern approaches to the professionalisation of military formations in Ukraine, based on combat experience and international standards, is an important step towards improving the combat capability of the Ukrainian armed forces. This ensures effective training of servicemen to perform tasks in modern warfare and facilitates Ukraine's integration into international defence structures. The Ukrainian military is currently facing challenges that require not only high professionalism, but also the ability to adapt to the new conditions of warfare. Innovative approaches to professionalisation, such as the introduction of adaptive training programmes that take into account real combat experience, are key to improving the effectiveness of our armed forces.

It is especially important to create training centres where the military can acquire both theoretical knowledge and practical skills based on the analysis of combat operations. Such centres can simulate various combat scenarios, test new strategies and tactics, which will allow the military to be better prepared for real combat conditions. In addition, an important aspect is the introduction of modern technologies into the educational process and combat training. The use of drones, battle management systems, intelligence and communications on the battlefield significantly increases the effectiveness of military operations. Intensive training in the use of such technologies will allow the Ukrainian military not only to perform combat missions more effectively, but also to minimise losses.

Thus, analysing combat experience and implementing it in the process of professionalising the Ukrainian armed forces is an important element in improving their combat capability and effectiveness. Taking into account the real challenges and conditions faced by our military will allow us to create a more adaptive and effective armed forces ready to meet modern threats and challenges.

The results of our study confirm the findings of a number of other scholars, including Bat'kovskij, A.M., Kravchuk P.V. (2020), who also note the importance of innovative technologies for improving the effectiveness of US military formations. At the same time, our data contradict the work of Dunne, J.P., Sköns, E., who argue that innovations do not always lead to increased combat readiness and can sometimes divert resources from more critical aspects of training.

The reasons for such contradictions may lie in different approaches to analysing the effectiveness of innovations and their impact on military structures. For example, Dunne, J. P., Sköns, E. (2021a) focused more on short-term results, while our study covers the long-term period, which allows us to take into account the cumulative effect of innovative technologies.

The main objective of our study was to identify key challenges and best practices in the professionalisation of the military forces of states. The tasks, which included researching the approaches of different countries, analysing funding and introducing new technologies, were fully completed. The findings confirm our hypothesis that innovation and technology are critical to improving the effectiveness of military formations in today's environment (Dunne & Sköns, 2021b).

It is important to note that the results of our study coincide with the findings of López J., Garcia R. (2020), who emphasise the need to adapt military training to modern warfare. Our study confirms this thesis, emphasising the importance of modernising curricula to meet new threats and challenges.

However, in contrast to the study by Powell-Turner, J., Murgatroyd C. (2021), which shows the high efficiency of the centralised command and control model in the US Army, our research indicates the need

for a more flexible approach in Ukraine, including the introduction of more decentralised command and control models to increase the efficiency and adaptability of military units.

The results of our research can be used by governments and military structures to develop strategies for training and modernising their military forces. In particular, the emphasis on innovative technologies and efficient use of resources can help improve the readiness and effectiveness of other countries' armies. In addition, our findings may be useful for the development of training programmes for military personnel aimed at integrating the latest technologies and training methods. On the other hand, the results of this study can be used to develop recommendations aimed at strengthening the defence industry of Ukraine, increasing its international competitiveness and ensuring national security. In the author's opinion, the following steps in this direction are advisable (Sitdikova & Starodumova, 2019; Qureshi, 2018; Usachenko, 2019; Dunne, & Sköns, 2021b; Hicks, 2024; Krasnodemska, 2022; Hruzevskyi, 2023; Doroshenko et al., 2023; Mabeba, 2024):

- Expand cooperation with military academies and training centres of NATO and the EU, which will help improve the professional level of Ukrainian military personnel;
- Update the curriculum to reflect modern military doctrines and strategies, and include the latest command and control techniques and crisis management skills;
- Ensure sufficient funding for the implementation of innovative projects in the field of military education, including the development of new simulators, trainers and other technological solutions that increase the effectiveness of training;
- Ensure professional development of teachers of military educational institutions through internships at international training centres and participation in international conferences and seminars;
- Develop and implement stricter criteria for selecting candidates for military academies, which will ensure a high level of training and selection of the most motivated and capable candidates.

Limitations of the study

In the course of this study, we identified several limitations that could affect the results and interpretation of the obtained data. Understanding these limitations is important for the correct assessment of conclusions and recommendations that are made on the basis of the researched materials.

One of the key limitations is the limited sample of countries on which the study is based. The United States, Israel, and Germany certainly offer diverse and interesting approaches to the professionalization of military formations. However, these countries have unique political, economic and geographical conditions that are not universal for all states. The choice of only three countries does not allow to fully cover the diversity of approaches that exist in global practice, and therefore the results cannot be directly transferred to other countries without additional consideration of local conditions.

The study covers the period from 2020 to 2024, which allows us to analyze only current trends and events related to military training. However, many aspects of the professionalization of military formations have a long history of development that cannot be fully reflected within this period. Some innovations or reforms may have only recently been introduced, and their long-term impact has not yet been fully assessed.

Not all data on the military training programs and strategies of each of the countries studied were publicly available due to their confidentiality. The research was based on official sources that are available in the public domain, such as defense budgets, national strategies and documents of international organizations. However, this can create certain gaps in the understanding of internal processes and decisions made at the command level. For example, some countries do not disclose the full extent of their innovative training methods due to national security considerations.

The study uses a comparative analysis and a systems approach to evaluate different approaches to military training, as well as a SWOT analysis to identify the strengths and weaknesses of each system. However, such methods have certain limitations, in particular, the possibility of subjective evaluations during the analysis. For example, the assessment of strengths and weaknesses may differ depending on the priorities and interests of the researcher.

These limitations do not negate the importance of the study conducted, but indicate areas in which its results should be interpreted with some caution. In future studies, it would be advisable to expand the geographical

and temporal range of the analysis, as well as to use additional sources of information for a deeper understanding of the processes of professionalization of military formations in different countries.

Conclusions

Professionalising the military forces of states is a critical task in today's global conflicts. Given the rapid changes in the military sphere, including the development of new technologies, cyber threats and unstable political situations, the relevance of this issue is becoming even more pronounced. Studying the best practices and experience of professionalising the military forces of the United States, Israel and Germany allows us to understand the key elements necessary to increase the defence capability and effectiveness of military forces.

The US military training system is characterised by a high level of innovation and significant funding. The increase in the budget of the US Department of Defence has significantly improved the technological base and increased the level of military training, which is a key factor in ensuring national security. Israel demonstrates high efficiency in the use of limited resources, channelling them to maintain a high level of readiness and technical equipment of the military. The emphasis on innovative projects and the flexibility of the training system allow for an effective response to external threats.

Germany, although it has stable funding and a strong technological base, demonstrates a lower share of innovative projects in the military sphere. This may be due to a more bureaucratic approach to the introduction of new technologies and less flexibility in the military training system.

The findings of the study are important for the development of defence strategies and policies. The innovative approaches of the United States and Israel can be used by other countries to improve the effectiveness of their military formations. Germany's experience can be useful for creating a more stable and structured system of military training.

Further research should focus on a detailed analysis of the effectiveness of different models of military training in the context of new military technologies and global threats. Studying the best practices of other countries and adapting them to national conditions can significantly improve the level of training of military formations. In addition, it is important to study the impact of political and economic factors on the process of professionalisation of the military forces, which will allow for more effective planning of defence expenditures and development of long-term strategies for the development of the country's defence capability.

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