ACCELERATING THE LEARNING WITHIN THE UKRAINIAN ARMED FORCES (2014–2024): ADAPTING IN WAR

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Summary

The article provides a military-historical analysis of the evolution of organisational learning within the Ukrainian Armed Forces throughout the Russo-Ukrainian War (2014–present). It investigates the key changes in lessons learning and strategies applied to accelerate its cycle across three phases: Adjustment (2014–2018), Modernization (2019–2022), and Transformation (2022–present). The research utilized a combination of general scientific approaches and the historical-systematic method. To measure the efficiency and pace of the lessons learned process its mean duration was used focusing on analysing, deciding, and sharing phases while excluding highly variable implementation timelines.

The findings indicate a significant improvement in the learning capability within the Ukrainian Armed Forces, demonstrated by a consistent reduction in the average duration of the learning cycle from nearly three months to approximately one month. Despite these advances, challenges persist, including the absence of a centralized Lessons Learned Portal, inconsistencies in analysis, and limited awareness of organisational learning among military personnel. Future research should aim to optimize further the lessons learned process to enhance the adaptability of the Ukrainian Armed Forces to counter ongoing Russian aggression.

Key words: organisational learning, adaptability, learning cycle, lessons learned process, information sharing, NATO, Russo-Ukrainian War.

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1. Introduction

Military organisational learning and the adaptability of armed forces are inherently interconnected, as the ability to respond effectively to evolving threats and operational environments based on the collective capability to learn from experiences and integrate new knowledge into practice. Notably during the wars adaptability «is, and has always been, an essential attribute of successful armed forces» *(Barno, D., Bensahel, N. 2020: 3)* and it is chiefly a result of effective military learning.

Organisational learning extends beyond understanding what went wrong and why, it necessitates establishing robust mechanisms to guarantee that essential, right lessons are energetically transformed into remedial actions aimed at reducing the risks of repeating mistakes and increasing the chances of achieving success and victory in the future *(Dyson, T. 2019; Leavitt 2011; NATO 2018; NATO 2022).* It is especially valuable in the complex and rapidly changing conditions of wartime, when operations experiences need to be expertly collected, analysed, implemented, and disseminated and not just rapidly, but as quickly as possible, faster than the adversaries *(NATO 2018: 4).* Thus, during the war organisational learning must be accelerated to keep pace with rapidly evolving challenges while still maintaining its high effectiveness.

One of the key central elements of successful learning is a properly organized lessons learned (LL) process «to learn efficiently from experience and to provide validated justifications for amending the existing way of doing things, to improve performance» *(NATO 2022: 14)*. Different organisational learning theories and practices utilize diverse models and methodologies of applying the LL procedures. The simplest model of the 'ever-repeating' learning cycle (Fig. 1) includes three phases *(Baird, L., Henderson, J., Watts, S. 1998; Davidson, J. 2010: 22–23):*

1) Scan – capture and submit observation from action.

2) Interpret – manage the collected information, analyse it (identify main cause and recommended measures), and make decision.

3) Act – execute remedial actions and actively disseminate lesson learned.

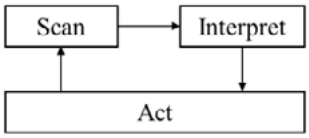

Fig. 1. Simple military learning cycle
(Baird, L., Henderson, J., Watts, S. 1998; Davidson, J. 2010)

Similar to the above model, lessons learned process can be represented by the following three basic stages *(NATO 2022: 10):*

1) Identification – collect knowledge from experiences.

2) Action – take actions to change existing ways of doing things based on the analysis of obtained knowledge.

3) Institutionalization – share the change with the organisation.

As stated in some scientific studies *(Argyris, C., Schön, D. 1996; Basten, D., Haamann, T. 2018; Hoffman, F. 2021)* the learning can be focused on «strategies and assumptions» and/or «values and norms», and accordingly include (Fig. 2):

1) Single-loop learning – make changes in strategies of actions adjusting to organisational norms and primarily to solve short-term problems.

2) Double-loop learning – adapt the established norms and develop entirely new approaches and standards mainly employing cross-functional teams (CFT) with appropriate subject-matter experts.

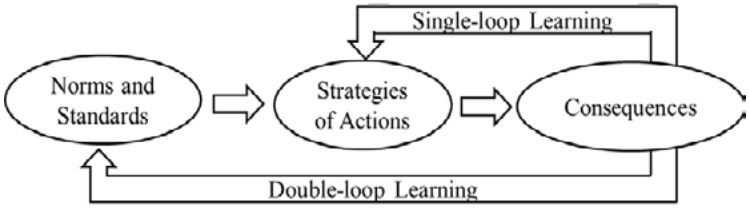

Fig. 2. Single-loop and Double-loop learning
(Argyris, C., Schön, D. 1996: 22)

Depending on the models of organisational learning it can be divided into three distinct types each with corresponding LL processes *(Lynch, J. 2019):*

1) Method Optimization focuses on refining existing practices without challenging their broader validity, relies on a bottom-up process, and includes reviews and feedback mechanisms.

2) Method Selection evaluates whether the chosen approach is the most effective for achieving the objectives and involves iterative procedures with comparing techniques and measuring outcomes against defined goals to identify the best methods.

3) Goal Selection assesses the feasibility of objectives within the operational environment and demands subjective judgment, creativity, and leadership to reevaluate overarching goals in response to dynamic conditions.

The learning process can also be viewed as consisting of four successive dynamic components *(Cohen, W., Levinthal, D. 1990; Dyson 2019):*

1) Knowledge Acquisition – gathering and examining data from past experiences to extract potential lessons and best practices.

2) Knowledge Management – organizing, storing, and maintaining the collected information to make it accessible and usable for decision-making and future learning.

3) Knowledge Dissemination – sharing the acquired knowledge across relevant parts of the military organisation.

4) Knowledge Transformation – adapting the shared knowledge through remedial actions to improve organisational performance and align with evolving needs.

The first three elements form the 'potential absorptive capacity' and the last generates 'realized absorptive capacity' *(Cohen, W., Levinthal, D. 1990; Dyson 2019).*

The LL processes can incorporate different forms of informal, semi-formal, and formal learning practices that have been constantly evolving especially over the past 110 years. During the First World War, the German and British militaries began to use semi-formal LL procedures *(Dyson, T. 2019).* Since the mid-1980s learning has been presented by the widespread application of formal LL processes.

They mainly differ from semi-formal practices in that they are characterized by using structured methodologies, strict documented procedures, and formal reporting structures. Today NATO institutionalizes the LL procedure (Fig. 3) which is «a part of a formal approach to organisational learning that deliberately processes observed issues arising from an activity until either a lesson learned is reached, or the lesson is rejected/noted for various reasons» *(NATO 2022: 17).*

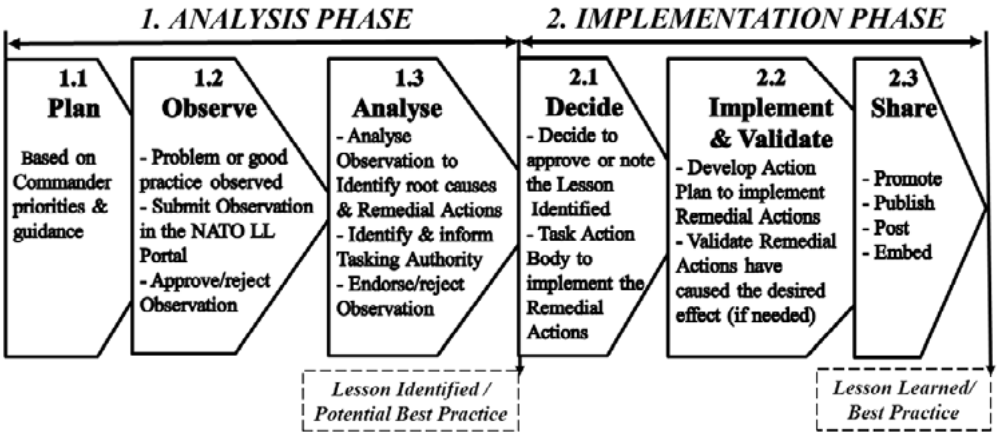

Fig. 3. The NATO Lessons Learned Process (NATO 2022: 18)

It comprises two phases *(NATO 2022: 18):* 'Analysis' (the main result – lesson identified or potential best practice) and 'Implementation' (the final product: lesson learned or best practice). Also, it consists of six consecutive steps: 1.1. Plan, 1.2. Observe, 1.3. Analyse, 2.1. Decide, 2.2. Implement and Validate, 2.3. Share. In fact, the LL process is not linear, as depicted in Fig. 2 *(NATO 2022: 22).* For example, auxiliary sub-cycles for this process should be recognized in case of insufficient information in the submitted observations or poor-quality LL analysis, etc.

Taking into account the key purpose of learning, its inputs (operations, exercises, training, experiments, and day-to-day staff work), and main outputs (lessons learned or best practices), we can consider the LL process as a part of the complete adapting cycle (Fig. 4). This full loop also includes refining the DOTMLFP-I elements (Doctrine, Organisation, Training, Learning, Materials, Leadership, Personnel, Facilities, and Interoperability) and executing corresponding reforms in the armed forces.

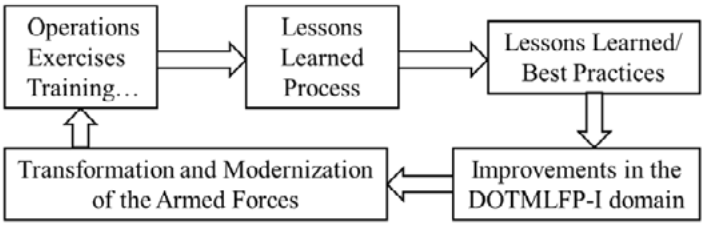

Fig. 4. Model of complete adapting cycle

The above models offer a generalized framework for interpreting various approaches to the learning cycle, the right organisation of which plays a crucial role in ensuring the fast and effective adaptation of military forces. The decade-long war launched by Russia against Ukraine in 2014, continuing to this day, has profoundly underscored the importance of accelerating the LL process within the Ukrainian Armed Forces (UAF) to enhance their capability in countering Russian aggression. In this context, three principal research questions emerge:

1) What forms and models of the LL processes were implemented in the UAF in wartime?

2) How was the acceleration of the LL processes within the UAF practically achieved during this period?

3) What else needs to be done to increase the pace of the learning cycle and reach the standards of the world's leading countries?

This topic remains insufficiently explored within the scientific community, necessitating a comprehensive and detailed study. Accordingly, **the article aims** to examine the key transformations in military learning within the Ukrainian Armed Forces during the Russo-Ukrainian War (2014–present), analyse the strategies employed to accelerate the lessons learned process and enhance the adaptability of Ukrainian troops to deter Russian aggression.

The research was grounded in principles such as historicism, systematicity, contextualization, abstraction, and objectivity. A variety of general scientific approaches were applied including analysis, synthesis, induction, and deduction, alongside specialized methods such as the historical-systematic approach. The last proved particularly useful in structured studying the LL processes within the UAF during wartime, highlighting how they were implemented and adapted in the UAF.

To evaluate the pace of the LL process and the degree of its acceleration, the average duration of the learning cycle (ADLC) was utilized. This metric represented the meantime measured from the bottom-up submission of observations to the delivery of lessons identified and potential best practices to the relevant stakeholders. The ADLC captured the time required to complete the following LL procedures (Fig. 3):

1.3. Analyse: analysing observations to identify root causes and necessary remedial actions, identifying the tasking authority, and endorsing or rejecting observations.

2.1. Decide: making decisions to approve or note the lesson learned/best practice and tasking an action body to implement remedial actions.

2.3. Share: promoting, publishing, posting, and embedding the LL information.

At the same time, the following assumptions were made:

1) Phase 2.2 (Implement and Validate) was excluded from consideration due to its highly variable duration, which depends on the specific nature of remedial actions and the availability of necessary resources.

2) Sharing of the proper LL information is an ongoing activity that can occur at every phase of the LL process, not solely as the concluding step *(NATO 2022: 22)*. In the UAF, analysed and generalized information about operations (combat) experiences, including lessons identified and potential best practices, was consistently disseminated in the LL bulletins.

3) The dataset used to calculate the ADLC was based on records accumulated at the National Army Academy from 2015 to the present, along with documents from 2016 to 2020 provided by the LL cell of the Ukrainian Army Command *(MSR 2020)*. The obtained data featured a symmetric distribution and minimal outliers, ensuring appropriate representativeness across the entire UAF, as the Army is their largest component. Additionally, the distribution of reporting times was relatively consistent, except for urgent reports from military units, which had the highest priority in analysis, implementation, and dissemination.

2. Accelerating the learning within the Ukrainian Armed Forces (2014–2024)

In 1991 the UAF inherited not only a large number of troops and weaponry from the Soviet Armed Forces but also the Soviet organisational approaches to learn and implement the obtained experiences. Throughout the 'peacetime' period (1991–2014) preceding the onset of the Russo-Ukrainian War, the UAF experienced stagnation and a noticeable decline in military learning. Russia's annexation of Crimea, its armed aggression in eastern Ukraine in 2014, and the large-scale invasion of Ukraine in February 2022 served as powerful catalysts for reforming and accelerating the UAF learning processes. These developments can be categorized into three distinct periods:

1. Adjustment (2014–2018): Focused on initial reforms in military learning to adapt to the immediate challenges posed by the conflict.

2. Modernization (2019–2022): Emphasized implementing formal LL process and incorporating modern learning methodologies.

3. Transformation (2022–present): Marked by comprehensive restructuring to address the demands of large-scale warfare.

2.1. Adjustment of Learning Cycle (2014–2018)

The first key reforms in organisational learning were initiated in August 2014. Temporary LL Standard Operating Procedures (SOP 2014) were implemented to enhance the semi-formal LL process within the Anti-Terrorist Operation (ATO: April 13, 2014 – April 30, 2018) and the

first LL cell, comprising 2-3 LL staff officers (LLSO), was established in the ATO Headquarters (HQ). In June 2015, the LL cells were formed in the HQs of ATO sectors *(MSR 2020)*. The LL points of contact (LLPOC) have almost not been appointed in military units (MU) until 2019.

Starting from October 2014, each military unit (MU) participating in the Anti-Terrorist Operation (ATO) was required *(MSR 2020):*

1) To maintain a register of combat experience, where any servicemember could freely record their observations. The obtained data had to be subsequently analysed and reported to the commander every week.

2) To submit periodic (daily and monthly) reports through the command chain regarding observations (Obs) captured during the ATO, following the formalized List of Urgent Reports (LUR) approved by the UAF General Staff (GS).

In January 2015 the UAF scientific and research institutions (SRI) and military educational institutions (MEI) were tasked with producing monthly LL bulletins analysing critical operation experiences (MSR 2020). These bulletins were then sent to the Centre for Operational Standards and Methods of Training Troops (COSMTT) for further processing. Additionally, due to the low level of observation assurance and poor quality of LL analysis, mobile cross-functional teams (MCFT) were introduced in November 2014. Reports generated by these teams were also submitted through the command chain and forwarded to the COSMTT (MSR 2020). Besides, the Interactive Electronic LL Database (IELLD) was launched on 31 October 2017 within the secure network. Military-scientific department (MSD) at the UAF GF was assigned to upload LL data to the IELLD. It is worth noting that the MSD and COSMTT primarily functioned as informational hubs and lacked the authority to coordinate the LL process within the UAF. Based on the analysis of all collected LL information, the UAF GF made decisions regarding its dissemination (primarily lessons learned and best practices) and the implementation of acquired knowledge. A schematic representation of the learning cycle established in the UAF by early 2018 is depicted in Fig. 5.

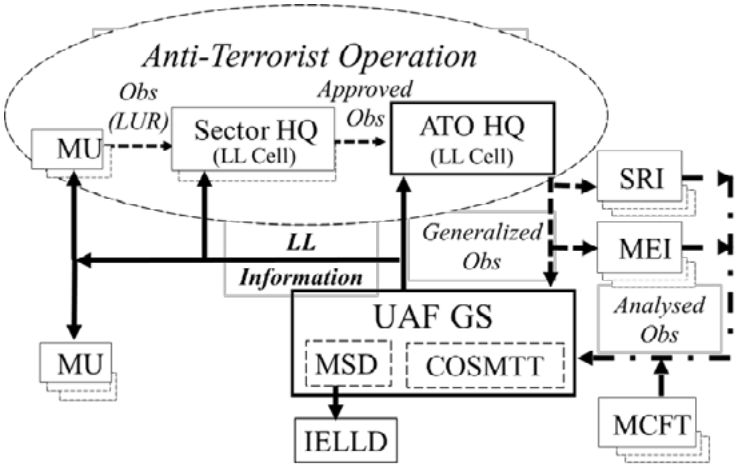

Fig. 5. Schematic representation of the UAF learning cycle (April 2018)

As a result of the reforms, the 'potential absorptive capacity' was enhanced primarily by improving the ability to acquire knowledge during the 'Analysis' stage while the 'realized absorptive capacity' remained low *(Dyson, T. & Pashchuk, Y. 2022: 152)*. Another indicator

of the low effectiveness of organisational learning within the UAF from 2014 to 2019 was the relatively high ADLC value of 86.7 days, nearly three months *(MSR 2020)*. The following key causes for the 'slow' LL process can be highlighted:

1) The use of complicated learning structures involving long chains of information transfer.

2) The dissemination of information about experiences was primarily carried out through printed and electronic periodicals as well as urgent LL bulletins.

3) Complex and poorly defined formats of reporting documents for submitting observations, as well as inefficient data collection and reporting structures.

4) Unsatisfactory classification and archiving of the LL information. The outdated IELLD lacked functionalities for submitting observations and their automated processing and tracking. It failed to provide the right users with reliable and quick access to needed LL information.

5) Low LL awareness of all UAF personnel and inadequate leadership engagement in the learning process.

2.2. Modernization of Learning Cycle (2019–2022)

Five years of enduring Russian aggression (2014–2018) has revealed an urgent need for cardinal improving the UAF LL capability. The corresponding LL Roadmap was developed in November 2018 and included four dominant aspects *(Plan 2018: 1–4):*

1) Forming a three-tier LL structure, which comprised LLSOs and LLPOCs at all organisational levels, along with an LL section in the J-7 (UAF GS) serving as the primary coordinator of the learning process (by December 30, 2019).

2) Implementing NATO formal LL process (by December 30, 2019).

3) Establishing national LL courses (by December 30, 2019).

4) Creating LL Portal (by June 30, 2021).

The expansion of the LL structure was completed promptly. However, the second and third objectives faced significant delays, and the launch of the LL Portal remains incomplete to this day. The adoption of the LL guidelines *(Doctrine 2020, SOP 2020)* in July 2020 marked the final transition from a semi-formal to a fully formalized approach to organisational learning, not only within the Joint Forces Operation (JFO: April 30, 2018 – February 24, 2022) but across all UAF branches. In 2021, two national LL courses were conducted with the graduation of 19 LLSOs and 20 LLPOCs.

As a result of the reforms implemented between 2019 and 2022, the learning process was significantly improved (Fig. 6), and the UAF's LL capability was substantially enhanced. This progress is particularly evident in the reduction of the ADLC to 63.4 days, about two months.

The primary factors contributing to these advancements include:

1) The Electronic Document Management System, introduced in mid-2018, became fully operational, significantly improving the efficiency of managing and sharing LL documents across the UAF *(Pashchuk Y., Pashkovskyi V. 2023).*

2) The launch of the formal LL process across the entire UAF (not only in the JFO) in mid-2020, incorporating a simple and clear ODCR (Observation, Discussion, Conclusion, and Recommendation) format *(Doctrine 2020: 29).*

3) The establishment of a centralized LL structure with a LL section in the UAF GS becoming the primary coordinating centre of organisational learning.

4) An increase in the number and tasks of MCFTs, staffed with personnel greatly experienced in gathering observations and conducting high-quality analysis.

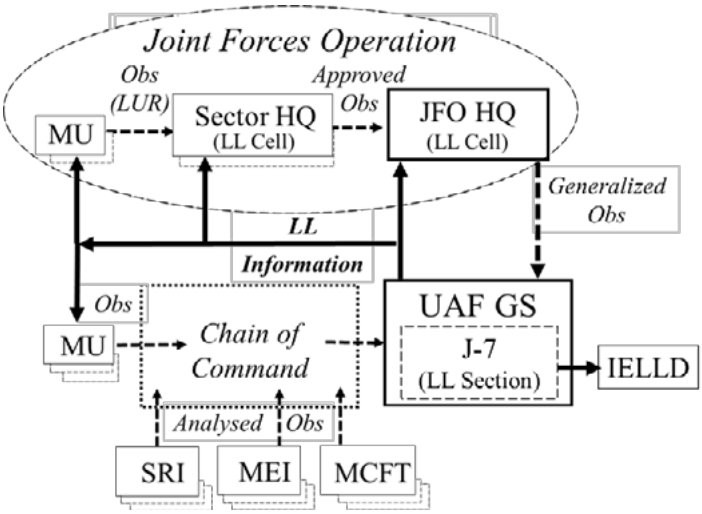

Fig. 6. Schematic representation of the UAF learning cycle (January 2022)

However, there remained a low level of LL awareness among UAF personnel. Specifically, according to a survey conducted in 2020 and 2021, only 18.9% of respondents, primarily officers, and UAF employees directly involved in the LL process demonstrated a right understanding the organisational learning *(Dyson T., Pashchuk Y. 2022)*. The growth in the speed of the learning cycle was also hindered by the absence of an LL Portal and the extremely low efficiency of the IELLD. In this context, it is important to note that the LL Portal Infrastructure Development Program *(Doctrine 2020: 19-21)* was flawed. For example, the planned creation of separate LL databases across various UAF commands, as well as in SRIs and MEIs with differing information exchange complicated the further integration of these resources and their management. Additionally, the issue of simplifying LL reporting documentation and aligning it with NATO requirements remained unresolved *(NRU 2020: 10)*.

2.3. Transformation of Learning Cycle (2022–present)

In February 2022, at the onset of the full-scale Russo-Ukrainian War, the UAF learning capability was challenged by a significant increase in the number of submitted observations and LL information due to expanded operations. By April 2022, three operational-strategic groupings (OSGs), comprising nine operational-tactical groups (OTGs) and additional Territorial Defence Forces, were actively countering Russian aggression, compared to just two OTGs involved in the JFO in January 2022 *(Pashchuk Y., Pashkovskyi V. 2023)*. However, a lack of LL experts and the de-prioritization of the LL process due to initial wartime uncertainties posed considerable challenges.

To address these issues, the UAF GS strengthened the LL structure at the strategic level by establishing an ad hoc LL Centre in March 2022 alongside the existing LL Section in the J-7 Department. By spring 2023, further transformations in organisational learning were implemented *(Pashchuk Y., Pashkovskyi V. 2023: 28-31)*, which included:

1) Expansion of the LL structure. A unified representation of LL bodies was established at all levels, mandating the appointment of both LLSOs and LLPOCs across all UAF organisations.

3) Reform of MCFTs operation. Their number and scope of tasks were increased, enhancing the overall efficiency and pace of the learning cycle, particularly during the 'Analysis' stage.

4) Streamlining the LL process. Key inefficiencies in the learning cycle were identified, and strict timeframes were established for the processing of 'bottom-up' LL data and dissemination of 'top-down' LL information. In addition, military units were allowed to submit critical observations directly to J-7.

These reforms significantly reduced the ADLC, which dropped to 35.8 days by 2023, reflecting a marked improvement in the effectiveness of the learning cycle within the UAF (Fig. 7).

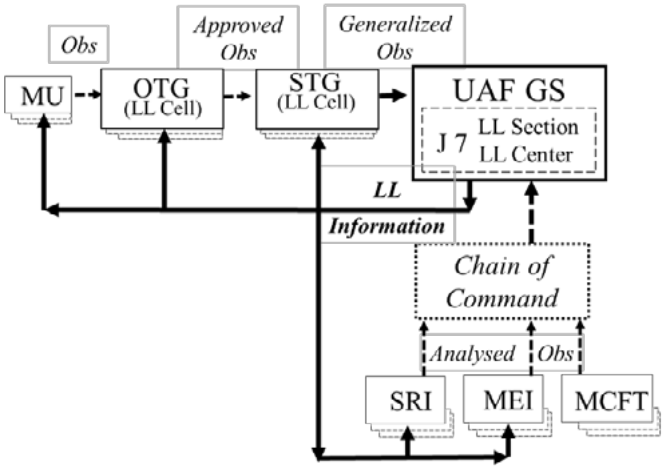

Fig. 7. Schematic representation of the UAF learning cycle (December 2024)

Despite significant progress in accelerating the LL process, outcomes still fall short of the standards achieved by leading militaries worldwide and in NATO joint multinational operations. The key issues include:

1) Lack of the LL Portal. The centralized LL Portal has not yet been established. The Portal is essential for the instant dissemination of captured observations, monitoring progress through the learning cycle, and imperative sharing key lessons and best practices. It would also enable authorized users to access LL information reliably and efficiently, significantly enhancing the overall learning capability.

2) Insufficient classification and archiving of LL Information. A significant portion of disseminated LL information remains unclassified and inadequately archived *(Dyson T., Pashchuk Y. 2022)*. Especially, critical lessons from the ongoing Russo-Ukrainian War must be categorized appropriately, as their uncontrolled sharing in open networks risks compromising operations and exposing strengths and vulnerabilities to the enemy.

3) Poor LL analysis. The quality of observations analysis remains inconsistent, delaying the effective learning cycle and often necessitating further investigation. This issue arises partly from unfilled vacancies in LL bodies and insufficient LL training for appointed personnel. Additionally, LLSOs and LLPOCs frequently face distractions from their primary LL responsibilities, further undermining the efficiency of the learning process.

4) Low awareness of organisational learning. Even though from mid-2021 to date, more than 400 officers have been trained in the LL courses (stationary, mobile, and online), a critical challenge is the lack of widespread mutual understanding of the LL process within the UAF. Military education institutions have not yet introduced LL programs for cadets. Regular LL courses, offered in various formats, should target not only LL personnel but also the military leadership.

Addressing these issues is vital for intensifying the LL process, improving learning capability within the UAF, and achieving alignment with NATO standards.

3. Conclusions

Accelerated military learning ensures that forces can evolve their strategies, tactics, and decision-making processes, and modernize armaments, doctrine, and organisational structures at a pace that matches or exceeds the speed of the adversary's adaptations. The study highlights the pivotal transformation of learning within the UAF over the Russo-Ukrainian War. It indicates a marked acceleration of the LL process, evolving through three distinct phases: Adjustment (2014–2018), Modernization (2019–2022), and Transformation (2022–present). The improvements have significantly enhanced the UAF's adaptability and operational efficiency in countering Russian aggression.

The average duration of the learning cycle decreased from nearly three months to approximately one month, reflecting substantial progress in organisational learning. Key achievements include the transition to the formal NATO LL process, the establishment of a centralized LL structure, the introduction of national LL training courses, and the upgrading of observation data collection, analysis, and sharing mechanisms. These efforts have improved the learning capability to rapidly identify, process, and disseminate lessons and best practices across the UAF.

Despite these advancements, several challenges persist. The absence of a centralized LL Portal, inadequate classification and archiving of LL information, poor quality of lessons analysis, and low awareness of organisational learning within the UAF personnel hinder the realization of the best LL practices. Addressing these gaps is crucial for enhancing the speed, reliability, and impact of military learning within the UAF. The research stresses the importance of continuous modernization of lessons learned frameworks to strengthen Ukraine's defence capability.

References

1. Argyris, C., Schön, D. 1996. Organisational Learning II: Theory, Method and Practice. Boston, MA: Addison-Wesley. 305 p.

2. Baird, L., Henderson, J., Watts, S. 1998. Learning from action: An analysis of the Center for Army Lessons Learned (CALL). 06 December 1998. https://doi.org/10.1002/(SICI)1099-050X (199724)36:4<385::AID-HRM3>.

3. Barno, D, Bensahel, N. 2020. Adaptation Under Fire: How Militaries Change in Wartime. New York: Oxford University Press, 2020. 430 p.

4. Basten, D., Haamann, T. 2018. Approaches for Organisational Learning: A Literature Review. SAGE Open, 8. Article ID: 2158244018794224. https://doi.org/10.1177/2158244018794224.

5. Cohen, W., Levinthal, D. 1990. Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35(1), pp. 128–152.

6. Davidson, J. 2010. Lifting the Fog of Peace: How Americans Learned to Fight Modern War. University of Michigan Press. 2010. https://doi.org/10.3998/mpub.236784.
7. Doctrine 2020. Doktryna z vyvchennia ta vprovadzhennia dosvidu u Zbroinykh Sylakh Ukrainy [Lessons Learned Doctrine in the Armed Forces of Ukraine]. VKP 7-00(01).01. Zatverdzhena nachalnykom Heneralnoho shtabu Zbroinykh Syl Ukrainy 30.06.2020 r. Vykh. № 1928/NVHSh vid 03.07.2020 r. 30 s. [In Ukrainian].
8. Dyson, T. (2019). Organisational Learning and the Modern Army: A New Model for Lessons-Learned Processes. Abingdon: Routledge. 272 p.
9. Dyson, T., Pashchuk, Y. (2022). Organisational learning during the Donbas War: the development of Ukrainian Armed Forces lessons-learned processes. Defence Studies. Volume 22, 2022 – Issue 2: 141-167. https://doi.org/10.1080/14702436. 2022.2037427.
10. Hoffman, F. 2021. Mars Adapting: Military Change During War. Annapolis, MD: Naval University Press, 2021. Naval Institute Press. March 15, 2021. 368 p.
11. Lynch, J. 2019. The Three Types of Organisational Learning. The Strategy Bridge. July 30, 2019. URL: https://thestrategybridge.org/the-bridge/2019/7/30/the-three-types-of-organisational-learning.
12. Leavitt, C. 2011. A Comparative Analysis of Three Unique Theories of Organisational Learning. Institute of Education Sciences Publications. September 14, 2011. URL: https://files.eric.ed.gov/fulltext/ED523990.pdf.
13. MSR 2020. Naukovo-doslidna robota, shyfr "DOSVID-ZSV", 2020 [Military Scientific Research, final report, code "DOSVID-ZSV", 2020]. Zvit zakliuchnyi. Derzhavna reiestratsiia № 0120u102708. Lviv: NASV, 2020. 126 s. [in Ukrainian].
14. NATO 2018. Two Strategic Command's (Bi-SC) Directive 080-006. Lessons Learned. 23 February 2018. NATO Unclassified. 25 p.
15. NATO 2022. The NATO Lessons Learned Handbook. NATO Joint Analysis and Lessons Learned Centre. Fourth Edition, June 2022. 59 p.
16. NRU 2020. NATO Representation to Ukraine. Letter NRU 2020/082, Kyiv, Ukraine, 21 August 2020. 10 p.
17. Pashchuk Y., Pashkovskyi V. 2023. Stanovlennia Systemy vyvchennia i vprovadzhennia dosvidu Zbroinykh Syl Ukrainy ta yii transformatsiia v umovakh povnomasshtabnoi rosiisko-ukrainskoi viiny (24.02.2022–2023) [Formation of the Lessons Learned System in the Armed Forces of Ukraine and its transformation during the large-scale Russo-Ukrainian War (24.02.2022–2023)]. Voienno-istorychnyi visnyk. Vypusk 3(49), Kyiv, NUOU, 2023, s. 26–35. [In Ukrainian].
18. Plan 2018. Plan stvorennia u Zbroinykh Sylakh Ukrainy perspektyvnoi systemy uzahalnennia ta vprovadzhennia dosvidu [Roadmap to create a prospective Lessons Learned System in the Armed Forces of Ukraine]. Zatverdzhenyi nachalnykom Heneralnoho shtabu Zbroinykh Syl Ukrainy 27.11.2018. 7 s. [In Ukrainian].
19. SOP 2014. Tymchasova instruktsiia kerivnykam orhaniv viiskovoho upravlinnia ta komandyram viiskovykh chastyn po vyvchenniu, uzahalnenniu ta vprovadzhenniu dosvidu zastosuvannia viisk (syl) v Antyterorystychnii operatsii [Temporary Standard Operating Procedures to heads of military command and control bodies and commanders of military units on studying, summarizing, and implementing the experiences of troops (forces) in the Anti-Terrorist Operation]. Heneralnyi shtab Zbroinykh Syl Ukrainy. 9 serpnia 2014 r. 5 s. [In Ukrainian].
20. SOP 2020. Tymchasova instruktsiia vyvchennia ta vprovadzhennia dosvidu u Zbroinykh Sylakh Ukrainy [Temporary Lessons Learned Standard Operating Procedures in the Armed Forces of Ukraine]. VKDP 7-00(01).01. 15 lypnia 2020 r. 72 s. [In Ukrainian].