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Improving the Quality of Practical Training for Officers Using Leadership Coaching Technology

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Abstract

The purpose of this article is to empirically assess leadership coaching as a pedagogical method of improving officer practical training. The study follows a quasi-experimental with control and experimental evaluation of practical leadership. It uses an original (developed by the authors) leadership coaching cycle, which combines diagnosis, coaching goal setting, situational practical action, non-directive feedback, reflection, repeated activity with increasing difficulty and expert evaluation. The study involved 118 officers in training, divided into control and experimental groups. Results were evaluated based on five criteria: goal setting and action planning, coaching communication, teamwork organization, situational decision-making, reflection and self-correction. The data showed varied positive dynamics in both groups. The integral indicator for practical leadership in the experimental group increased from 2.78 to 4.03, while it rose from 2.75 to 3.12 in the control group. The greatest changes in the experimental group were observed in the criteria of teamwork organization, reflection, self-correction and goal setting. The effect size difference between the groups was statistically significant. This confirmed that the authors' leadership coaching cycle improved practical leadership preparedness more than standard practical sessions. The findings confirm the pedagogical effectiveness of leadership coaching in practice-oriented officer training.

Introduction

In contemporary professional education, officer training can no longer be limited to the transmission of normative knowledge, the practice of specific procedures or standard procedures control. Future officers are expected to be able to organize subordinates' training, foster teamwork, operate in conditions of uncertainty, justify decisions and maintain a responsible agent stance at the same time. Which is why there is growing interest in coaching, mentoring, group support and experiential learning technologies in international education, shifting the emphasis from the rote material memorization to the development of practical action, reflection and self-correction [1–3].

In the literature, coaching is increasingly viewed as an educational process that provides targeted support for learner, team or professional group development. Meta-analyses of recent studies confirm that coaching interventions can positively influence performance, self-regulation, goal setting and behavior. However, this depends on the methodological clarity, support duration, feedback quality and evaluation methods [4–5]. This issue is particularly important in military education, since officer leadership combines individual and team dimensions. Errors in communication, instructions or reflection can affect the effectiveness of teamwork [6–7].

Despite the significant body of work on coaching and leadership, methodological uncertainty persists in research. Coaching is defined as a management style, training method, form of support, intervention or component of leadership behavior, but it is not always presented as a pedagogical technology with measurable outcomes [8–10]. In officer training, this problem is even more complex. Coaching is often framed as a promising model for professional development. However, evaluation criteria, testing

procedure and group comparisons are not always specified. There is also a lack of statistically grounded dynamics of results in practical leadership training [5, 7].

The aim of this article is to empirically evaluate the effectiveness of leadership coaching as a pedagogical technology for improving officer practical training. To achieve this aim, the following tasks have been set: to develop a cycle for the pedagogical implementation of leadership coaching; to define criteria for assessing officers' practical leadership; to compare the dynamics of results in the control and experimental groups; to interpret the obtained results in the context of contemporary research on coaching [11].

The purpose of this article is to empirically test the effectiveness of leadership coaching as a pedagogical method for improving the practical training of officers. To achieve this goal, the following tasks have been set: to develop a cycle for the pedagogical implementation of leadership coaching; to define criteria for assessing officers' practical leadership preparedness; to compare the results in the control and experimental groups; to interpret the obtained results in the context of contemporary research on coaching, experiential learning and military leadership training [12].

The practical focus of the study stems from the fact that the quality of officer training cannot be justified solely by curriculum. It must be evaluated based on how trainees act in situations where they need to organize others, explain objectives, make decisions, receive feedback and adjust their behavior. That is why the central outcome chosen in the article is not the level of knowledge about leadership, but practical leadership preparedness as an integral indicator of behavioral manifestations in simulated professional situations, allowing to combine educational innovation with verifiable learning outcomes and subsequent methodological replication of the program as a whole in the future.

Literature review

Current research on coaching in education is unfolding along several interconnected areas. Individual coaching focuses on learners' professional growth, clarifying goals, identifying resources and informed action-taking. Group and team coaching have a different focus. They concentrate on the quality of interaction, role clarity, collective reflection and coordination of collaboration. For officer training, the team approach is more relevant, as officer leadership is always tied to organizing subordinates. The importance of group coaching for developing role clarity and self-efficacy is emphasized by Brandmo et al. [1]. The potential of team coaching for developing teamwork competencies is explored in the work of García-Galán et al. [13].

In research on coaching leadership, coaching is interpreted not merely as supportive communication. Karlsen and Berg [8] view it as a learning process that combines goal-oriented, subject-oriented and instrumental components. This approach differs from the understanding of coaching as a motivational conversation or management style. It is important to note that in pedagogical context, coaching becomes a process only with procedures and clearly defined tools. It must encompass goal setting,

practical implementation, feedback, reflection and repeated activities [14]. This makes it possible to link leadership coaching to practice-oriented officer training.

Meta-analyses of coaching effectiveness constitute a separate area of research. In these studies, the focus shifts from describing coaching to testing its outcomes. Cannon-Bowers et al. [4] summarize the effects of workplace coaching in relation to productivity, self-regulation and professional behavior. De Haan and Nilsson [5] emphasize the importance of randomized controlled trials for demonstrating the effectiveness of coaching interventions. Another line of analysis links coaching to behavioral changes, goal achievement and the development of personal resources [3].

Within the context of educational coaching, it is relevant to distinguish between instructional coaching and team coaching. Instructional coaching focuses on the meeting structure, the nature of questions, feedback strategies and professional thinking framework. This approach is presented in the works of Nugent et al. [15]. A similar focus on the epistemic framework of coaching interaction is evident in the study by Sager and Wieselmann [16]. Team coaching has a different focus. It is aimed at aligning roles, resolving conflicts and making joint decisions. That is why this approach is closer to officer training, where the outcome depends on teamwork.

In the military context, leadership coaching takes on additional significance. Hinck [6] views it as a transformational process in military education. This approach combines the development of self-awareness, a values-based comprehension of leadership and practical training in organization of. Research by Gutierrez et al. [7] shifts attention to training leaders of small military teams. A comparison of these works reveals a shared conclusion that officer leadership depends not only on individual training but also on the ability to function within a team.

The theoretical foundation of leadership coaching is complemented by andragogy and experiential learning. Knowles et al. [17] links adult learning to independence, practical orientation and reliance on prior experience. Kolb [14] defines learning as a cycle of experience, reflection, conceptualization and active experimentation. This is particularly effective for officer training. Practical actions become learning only when followed by reflection and repeated application. Dillard et al. [2] describes the contemporary expansion of experiential learning through technology and reflective tools. The importance of experiential learning for deep learning is also explored in a review by Henríquez et al. [18].

The issue of assessing coaching competencies remains a subject of debate. ICF Core Competencies provide a professional framework for coaches' ethical, communicative and collaborative behavior [19]. However, this framework cannot be automatically applied to officer training. It requires adaptation to the tasks of practical leadership. Birknerova et al. [20] proposed a methodology for identifying coaches' core competencies through criteria and behavioral indicators. This approach is suitable for developing an assessment criteria for practical leadership.

The literature also emphasizes the importance of training facilitators of coaching interactions. The quality of coaching depends on the ability to ask questions, maintain a non-directive stance and handle

mistakes. This aspect is explored in the work of Randolph et al. [21]. The study by Thornton and Beutel [22] specifically emphasizes teacher professional readiness to give support. For military education, this suggests the need for methodological training of teachers, instructors or commanding officers. Without the training, coaching might convert into mere instruction.

Ukrainian research confirms the importance of active and interactive methods in developing cadets' leadership qualities. This approach is presented in the work by Melnychenko et al. [23]. At the same time, international academic context calls for a precise explanation of the pedagogical development. Contemporary studies on empowering leadership in military settings show that autonomy requires clear boundaries and roles [24]. Therefore, the non-directive nature of coaching does not imply a rejection of structure. In officer training, it must be combined with regulated tasks, responsibility and expert evaluation.

Thus, existing research explores various aspects of coaching: individual support, teamwork, evidenced results, military leadership and adult teaching. At the same time, there is a lack of studies that integrate these areas into a single pedagogical approach for officer practical training, which constitutes the rationale for this study.

Methods and materials

Research design and participants

The study employed a quasi-experimental design that compared the results pre- and post-intervention of the control group and experimental group. This design was chosen because the learning groups were formed administratively. Randomizing them could have disrupted the organization of the educational process.

The empirical phase was conducted over the course of a single training module from September to December, 2025. A total of 118 participants enrolled in leadership courses participated. 60 people constituted the experimental group and 58 - the control group. The participants' ages ranged from 31 to 44 years. The average age was 37.5 years. The sample included 96 men and 22 women. Previous military service or training experience ranged from 11 to 23 years. The groups were comparable in terms of age, gender, experience and initial levels of leadership.

Leadership coaching intervention

The control group followed a standard practical training program. It included instruction, situational exercises, group discussions and a final performance evaluation. The experimental group received the same training. The difference was in the pedagogical organization of the training sessions.

The experimental group utilized an original leadership coaching cycle. It included initial leadership assessment, goal setting through coaching, situational actions and non-directive feedback. The cycle also included reflection, self-correction, repeated activities with increased difficulty and expert evaluation.

Each training case was structured the same. First, participants were presented with a simulated professional situation. Next, they formulated objectives, distributed roles and solved the situation. This was followed by feedback, a brief written reflection and a repeat performance. Possible complications included time constraints, incomplete information or reversal of roles.

Instruments and assessment criteria

The research instruments consisted of an expert rubric, observation sheet, self-assessment form and a group reflection protocol. Practical leadership was measured through expert behavioral assessment. The assessment focused on the participants' actions while performing simulated professional situations.

The expert rubric was structured around officers' practical action. It also reflected the structure of the coaching cycle. The criteria covered the sequential stages of task execution. These included goal setting, communication with the group, teamwork organization, decision-making and self-correction.

The rubric contained five criteria: goal setting and action planning, coaching communication, teamwork organization, situational decision-making, reflection and self-correction. Each criterion was evaluated on a five-point scale. One point indicated the inconsistency of actions. Five points indicated consistent, independent and contextually appropriate performance. The integral indicator was calculated as the arithmetic mean of the five criteria.

The assessment was conducted by three experts, who were an instructor of practical officer training, a specialist in military pedagogy and an officer-instructor. Their professional experience ranged from 7 to 15 years. Prior to the assessment, the experts had an evaluating discussion of the scale. The internal consistency of the rubric was Cronbach's alpha = 0.86.

At the first stage, a set of criteria was developed to assess not only the declarative knowledge of leadership, but officers' practical ability to organize team action, communicate, make decisions and adjust their own behavior. The content of the rubric is presented in Table 1. It was based on a combination of the professional framework of coaching competencies, experiential learning concepts and the requirements of practice-oriented officer training [14, 19, 20].

Table 1
Assessment criteria of officers' practical leadership

Criterion	Behavioral indicators	Scale
Goal setting and action planning	Clarity of learning objective; selection of procedure to complete practical task; explanation of expected outcomes to the team	1–5
Couching communication	Ability to put open-ended questions; maintaining trust; active listening; non-directive feedback	1–5
teamwork organization	Distribution of roles; inclusion of passive participants; maintaining group consensus; conflict mediation	1–5
Situational decision-making	Analysis of changing conditions; decision justification; correction during task execution; responsibility for consequences of actions	1–5
Reflection and self-correction	Ability to match an action to a standard; admitting mistakes; formulating a self-improvement plan; transferring experience into a new situation	1–5
Source: own elaboration		

The original leadership coaching cycle did not replace the content of practical training but changed the way it was pedagogically organized. In the traditional approach, participants were given a task to complete, received a grade and moved on to the next task. In the experimental model, each exercise became a complete cycle of learning: first, participants defined personal and group goals, then performed a situational task, received feedback from the coach and the group, identified mistakes, repeated the action in a more challenging situation and only then received expert evaluation. This approach ensured not a one-time performance but a gradual improvement in the quality of practical leadership action.

Data collection and analysis

The assessment was conducted twice. The first assessment took place at the beginning of the first week, prior to the implementation of the coaching cycle. The final measurement took place in the twelfth week, after the completion of all training cases.

During each assessment, participants performed the same types of practical tasks, which closely resembled typical situations in officer work. The first exercise involved conducting a short briefing for a small group before carrying out tactical training: participants had to formulate the objective, explain the plan of actions, distribute roles among others and check their understanding. The second exercise involved responding to changes in the initial conditions, specifically, reducing completion time, receiving incomplete information or changing roles of one of the group members. The third exercise involved explaining the decision made after completing the task, identifying mistakes and formulating a correction of future actions. The experts recorded the observed actions on the evaluation sheets. The mean of the three expert evaluations was used for the final analysis. Inter-expert agreement was high: intraclass correlation coefficient (ICC) = 0.82.

Statistical analysis was performed in Microsoft Excel 365 and SPSS 29. The arithmetic mean, standard deviation and effect size were used to describe the results. Within group dynamics were tested using paired *t*-test. The difference in means between groups was determined using independent samples *t*-test. The level of statistical significance was set at $\alpha = 0.05$. Effect size was interpreted using Cohen's d.

Ethical considerations

Participation in the study was voluntary. Individual results were anonymized and used only in consolidated form. Participation in the study did not affect participants' final administrative evaluation.

Ethical considerations

Results

First and foremost, the results clarified the pedagogical rationale for implementing leadership coaching in officer practical training. The original cycle was structured as a sequence of actions in which the assessment of initial leadership transitioned into goal setting through coaching, situational practical action, feedback, reflection, expert evaluation and repeated performance of the exercise with increased difficulty. This structure ensured not a one-time execution of the training task, but its gradual refinement through error analysis and repeated activity. The general structure of the cycle of pedagogical implementation of leadership coaching is presented in Fig. 1.

Source: own elaboration

Note

the cycle is repeated till consistent performance of leadership action

As shown in Fig. 1, the central feature of the cycle is the return to the repeated activity following feedback, reflection and expert evaluation. This element was what distinguished the structure of the experimental sessions from the standard task execution with a final evaluation. After defining the cycle logic, the initial indicators of practical leadership were analyzed in the control and experimental groups. A comparison of the initial indicators demonstrated that the control and experimental groups were statistically comparable. The integral indicator was 2.75 ± 0.43 in the control group and 2.78 ± 0.42 in the experimental group; the difference was not statistically significant. The lowest initial results in both groups were observed for situational decision-making, indicating the difficulty of quickly adjusting actions under changing conditions. Though still average, relatively higher scores were recorded for goal setting and planning, since this component was partially supported by standard instructional procedures.

After the program ended, positive dynamics was observed in both groups, though it differed significantly. In the control group, the integral indicator increased by 0.37, reflecting the natural effect of practical

sessions. In the experimental group, the increase was 1.25, i.e., more than three times higher. The greatest improvements in the experimental group occurred in the criteria of organizing teamwork, reflection and self-correction as well as goal setting and action planning. This demonstrates that leadership coaching had the greatest impact on those components that required not only procedural knowledge but also conscious group interaction. Detailed dynamics for each criterion are presented in Table 2.

Table 2
Dynamics of indicators of practical leadership in the control and experimental groups

Criterion	CG before	CG after	Δ CG	EG before	EG after	Δ EG
Goal setting and action planning	2.83 ± 0.52	3.17 ± 0.55	0.34	2.86 ± 0.51	4.12 ± 0.49	1.26
Couching communication	2.71 ± 0.58	3.05 ± 0.59	0.34	2.74 ± 0.56	3.98 ± 0.52	1.24
Teamwork organization	2.77 ± 0.54	3.10 ± 0.57	0.33	2.76 ± 0.53	4.05 ± 0.50	1.29
Situational decision-making	2.69 ± 0.60	3.08 ± 0.61	0.39	2.73 ± 0.57	3.94 ± 0.55	1.21
Reflection and self-correction	2.75 ± 0.55	3.20 ± 0.56	0.45	2.79 ± 0.54	4.08 ± 0.47	1.29
Integral indicator	2.75 ± 0.43	3.12 ± 0.45	0.37	2.78 ± 0.42	4.03 ± 0.40	1.25
Source: own elaboration						
Note: CG — control group; EG - experimental group; values presented as M ± SD; Δ — increase of the indicator after completion of the program.						

The data in Table 2 show that the increase was greater in the experimental group across all criteria. The greatest differences between the groups were observed in the teamwork organization, reflection and self-correction. This indicates that the coaching cycle had a bigger effect specifically on the team-based and reflective components of training.

Statistical analysis confirmed the significance of the observed dynamics. In the control group, the increase of the integral indicator was statistically significant but had a moderate effect size. In the experimental group, the changes were statistically significant and of a large effect size. The difference in effect sizes between the groups was also statistically significant, making it possible to attribute the observed dynamics specifically to the implementation of the pedagogical technology of leadership coaching, rather than solely to the general completion of practical training. The results of the statistical analysis demonstrated significant dynamics in the integral indicator for both groups. The difference in effect sizes between the groups was also statistically significant, confirming the advantages of the experimental program (Table 3).

Table 3
Statistical verification of the integral indicator dynamics

Comparison	N	Difference of means	t	p	Cohen's d
Control group	58	0.37	4.82	< .001	0.55
Experimental group	60	1.25	16.74	< .001	1.93
Difference of means between groups	118	0.88	9.61	< .001	1.78

Source: calculated by the authors based on the result of expert evaluation pre- and post-intervention

As shown in Table 3, the largest average increase and the highest effect size were recorded in the experimental group. This confirmed that the original leadership coaching cycle developed by the authors of this study produced more significant changes in the integral indicator than the standard practical training program.

Qualitative analysis of the observation cards complemented the quantitative results. At the beginning of the program, participants in the experimental group would often formulate the goals as general intentions: "organize the group", "complete the task", "explain the procedure". By the end of the program, the formulations became more precise: "assign roles based on participants' strengths," "check understanding of the task through open-ended questions," "agree on a backup plan before the exercise begins." This change reveals a transition from an administrative-instructional style to a reflective teamwork organization.

The feedback quality changed significantly. In the first sessions, it was primarily evaluation-based: participants identified a mistake or a correct action. After several coaching cycles, the feedback became analytically-based: participants began to explain what caused the mistake, what alternatives were available, how communication could be adjusted and what could be checked during a repeat attempt. This change is what explains the significant increase in the criteria of reflection and self-correction. Thus, the program resulted not only in the improvement of specific leadership actions but also in the development of the ability to learn from one's own practice.

The practical results were also evident in teamwork. In standard exercises, participants often focused on formally fulfilling the role of a group leader, whereas the experimental program required the involvement of other team members in goal setting, situational analysis and finding solutions. This reduced the number of instances of passively waiting for instructions and increased the proportion of mutual clarifications, brief team discussions and autonomous adjustments to the distribution of roles. In the context of officer training, this is essential, since effective leadership is not limited to controlling subordinates but involves creating conditions for the coordinated task execution.

Based on the coaching communication criterion, the experimental group's score increased to 1.24. In their observation sheets, experts noted that participants began to use clarifying questions more often instead of directive instructions. For example, halfway through the program, phrases such as "What two

risks should we check before we start?", "Who can confirm the task is clear?" and "What will be the backup plan?" began to appear. Such questions did not reduce administrative clarity but increased the group's engagement in analyzing the situation.

According to the situational decision-making criterion, the experimental group's score increased from 2.73 to 3.94 points. This was the lowest final score among the five criteria, but its increase was 1.21 points. The observation sheets recorded more frequent decision justification, separation of facts from assumptions and identification of conditions for correcting actions.

Self-assessment forms revealed that at the start of the program, most participants in the experimental group rated their own leadership higher than the experts did. After the program concluded, the gap between self-assessment and expert evaluation narrowed. This can be explained by the development of reflective accuracy: participants better understood which concrete actions are indicators of quality leadership and were less likely to equate a leadership position with formal dominance within the group. Thus, the coaching cycle influenced not only performance but also the ability to adequately assess one's own actions.

The results provide grounds for identifying three pedagogical effects of the technology. The first effect is structural-activity-based: participants planned and organized practical actions more effectively. The second effect is communicative-team-based: the quality of interaction, role clarification and feedback improved. The third effect is reflective-corrective-based: participants more often identified the causes of errors and formulated specific steps for re-execution. The combination of these effects explains effect size in the integral indicator in the experimental group.

Analysis of the observation cards and written reflections revealed a shift in attitudes toward mistakes among the participants of the experimental group. At the beginning of the program, mistakes were predominantly perceived as grounds for a negative evaluation or as a sign of insufficient preparation. By the end of the program, it was more often described as information for improving the algorithm of actions. This change has significant pedagogical implications, since officer practical training requires the ability to quickly identify the limitations of one's own decisions and not to conceal them from the group but to translate them into behavioral corrections. This mindset is what supports learning throughout one's professional career rather than merely fulfilling the requirements of a single session.

Discussion

The findings are consistent with research on the effectiveness of coaching, which highlights the importance of goal setting and behavioral feedback. A meta-analysis of workplace coaching links its effects to performance and the development of professional behavior [4]. A study on the effectiveness of coaching based on randomized controlled trials emphasizes the need for evidence-based validation of such interventions [5]. In this context, our study demonstrated that in officer training, coaching should not be a supportive conversation but a cycle of practical action. The improvement in teamwork indicators in the experimental group aligns with research on team coaching. A study on non-directive

team coaching in professional education demonstrates its impact on teamwork competencies [13]. A similar conclusion is evident in research on group coaching for school leadership [25]. At the same time, officer training has its own specific characteristics. Teamwork here is not only linked to academic outcomes. It also involves responsibility for organizing other people's actions. The results align with the position of Hinck [6], who interprets leadership coaching as a transformational process in military education. The conducted study clarifies this stance through the pedagogical reproducibility of the original leadership coaching cycle. It can be replicated within practical sessions. It can also be applied to typical situational exercises and evaluated according to defined criteria [26].

A comparison with studies on military leadership confirms the importance of practical scenarios and behavioral outcomes. A study on the leader training of small army units confirms the value of targeted practical courses [7]. A more recent work on the development of military management competence in future officers emphasizes the role of pedagogical conditions, criteria and indicators [27]. This confirms that officer leadership is not limited to learning guidelines. It requires practicing management actions in pedagogically simulated conditions. The biggest increase in the experimental group occurred in reflection and self-correction. This aligns with the andragogy of adult learning, as proposed by Knowles et al. [17]. Adult learners learn more effectively when they relate new actions to prior experience. Kolb's [14] experiential learning cycle also explains this result. Practical action becomes learning when it concludes with reflection and transitions into a new attempt.

The findings partially align with research on coaching leadership in civilian organizations. In those studies, coaching is linked to productivity, authentic leadership and change-oriented leadership [28]. However, officer training imposes stricter requirements on the structure of interaction. An overly non-directive approach may be insufficient in situations where speed and clarity are required. Therefore, the original cycle combined non-directive feedback with a structured task, an expert review and repeated execution. What is important is that the cycle does not conflict with the disciplined structure of military education. Works on empowering leadership emphasize that autonomy in the military environment requires boundaries and roles [24]. The results obtained elaborate on this point. Learner autonomy does not undermine discipline if it is organized through criteria, time, roles and responsibility.

The findings of this study are also consistent with the contemporary understanding of transformative coaching. In the meta-synthesis of transformative coaching, it is viewed as a practice that supports reflection, the development of professional practice and behavioral change [29]. In officer training, this effect manifested itself through a shift from the formal execution of exercises to a conscious analysis of decisions. The narrowing of the gap between self-assessment and expert evaluation was particularly noticeable. However, the results should not be interpreted as proof of the general superiority of coaching over other techniques. Its effectiveness depends on the class objective. For mastering clear instructions, directive instruction may be faster [30]. For developing responsible decision-making, team coordination and self-correction, leadership coaching is pedagogically more appropriate.

The study has several limitations. The groups were not formed randomly, so the results are quasi-experimental in nature. The program lasted one semester. This does not allow for the evaluation of the long-term retention of the results. Additionally, the assessment was conducted in simulated situations. Further research should focus on longitudinal tracking of results and testing the cycle in other professional groups.

Conclusions

This article empirically evaluates leadership coaching as a pedagogical method for improving officer practical training. The results show that systematically organized leadership coaching yields more significant positive improvements in practical leadership than the standard format of practical training sessions. The integral indicator in the experimental group increased by 1.25, while in the control group it increased by 0.37; the effect size difference was statistically significant. The most notable changes occurred in the teamwork organization, reflection, self-correction and goal setting. The scientific novelty of the study lies in the empirical validation of the original leadership coaching cycle as a pedagogical technology for officer practical training. The practical significance is linked to the possibility of using the developed coaching cycle in the training of experienced officer-leaders within the system of andragogical education. Implications for further research include evaluation of the long-term effects of leadership coaching, expanding the sample size, applying mixed methods of analysis to coaching sessions and comparing individual, group and team coaching of different forms formats of professional training.

Declarations

Ethical approval

The study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the Ethics Committee of National Defense University of Ukraine, Certificate No. 13 (ac045-68), ethical approval date: 28.08.2025. The authors declare no conflicts of interest and confirm that the study complied with institutional and national ethical guidelines.

Consent to participate

All participants provided informed consent to participate in the study.

Consent to publish

Not applicable. The manuscript does not contain any individual-level data, images, or other identifiable information.

Competing interests

The authors declare no competing interests.

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Author Contribution

Andrii Vitchenko – Conceptualization, Methodology, Drafting - original draft.Roman Bakumenko – Conceptualization, Methodology, Writing - proofreading and editing.Stanislav Pavlushenko – Data curation, Validation, and Formal analysis.Oleh Rybchuk – Project management, Resources, and Supervision.Svitlana Khrystiuk – Resources, Visualization and Supervision.All authors have read and agreed to the published version of the manuscript.

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Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

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Figures

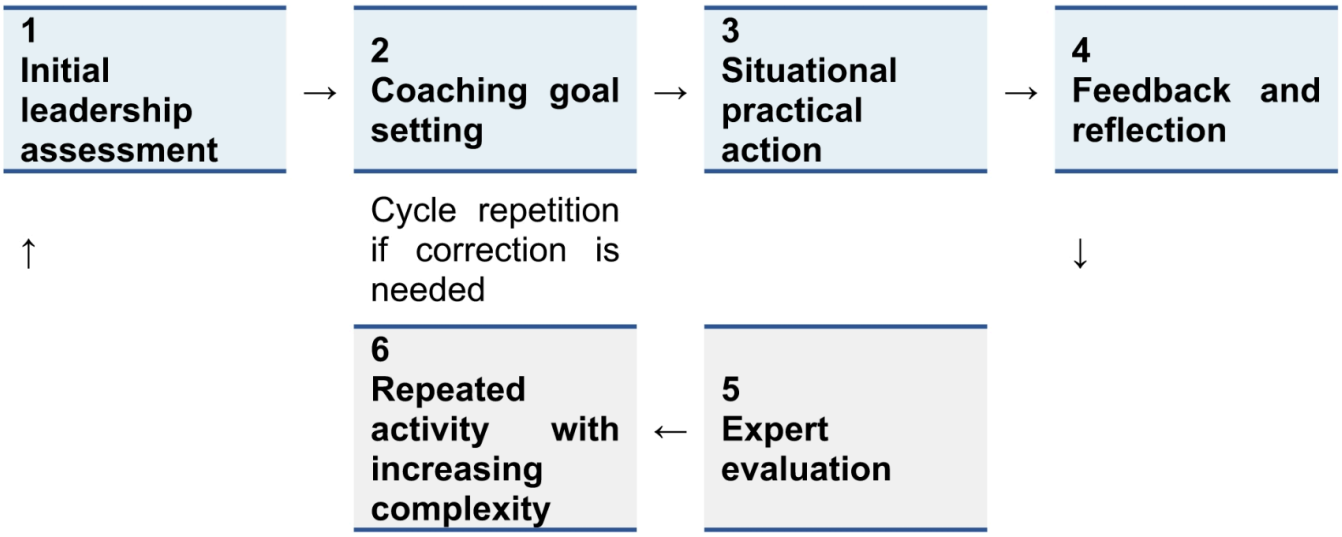


Figure 1

Cycle of pedagogical implementation of leadership coaching in officer practical training

Source: own elaboration

Note: the cycle is repeated till consistent performance of leadership action