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FORMATION OF OPERATIONAL-TACTICAL THINKING IN CADETS THROUGH TEACHING THE DISCIPLINE BORDER TROOPS TACTICS

Likhanov Vladimir Olegovich
Senior Lecturer, Military Security and
Defense University of the Republic of Uzbekistan

Abstract

This article analyzes the theoretical and methodological foundations and practical mechanisms for developing operational-tactical thinking in cadets during the teaching of the Border Troops Tactics discipline. Within the framework of the modern military education paradigm, the cognitive, procedural, and motivational components of operational-tactical thinking are identified. The article provides scientific justification for the integration of interactive teaching technologies (brainstorming, clustering, the "boomerang" method), project-based learning (PBL), problem-based learning, case study, simulation exercises, and digital technologies into border tactics classes through concrete tactical situations (hybrid threats in the border area, attempts of illegal crossing, drone attacks, information-psychological operations). A step-by-step model for the formation of operational-tactical thinking is proposed, and its assessment criteria are developed. The study substantiates that the systematic use of modern pedagogical technologies in border tactics training ensures the transition from reproductive knowledge acquisition to the formation of flexible, adaptive, and critically oriented operational-tactical thinking, which is a key factor in the professional readiness of future border service officers.

Keywords: border troops tactics, operational-tactical thinking, military education, pedagogical technology, interactive methods, project-based learning, problem-based learning, case study, simulation training, cognitive flexibility, critical thinking, border security.

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Introduction

The modern military-political situation, the increasing complexity of threats to border security, and the widespread use of hybrid warfare methods and modern technologies such as unmanned aerial vehicles (UAVs) demand high professional training from future military specialists. The successful management of border troop units primarily depends on the commander's level of operational-tactical thinking and the ability to make correct decisions under conditions of uncertainty. The discipline Border Troops Tactics is a foundational subject that shapes cadets' logical and rapid thinking, enabling them not only to acquire normative and military-theoretical knowledge but also to choose the right strategy and tactics in a dynamically changing combat and service-combat environment [1].

The conditions of modern border service require an officer not only to know the provisions of the Regulations but also to possess the ability to make independent decisions in a rapidly changing, ambiguous, and often contradictory information environment. Each case of border violation is a tactical problem that cannot be predicted in advance and must be assessed and resolved under time pressure. It is emphasized that in the training points of the Border Troops, classes are conducted "mainly in the form of practical exercises," where each soldier directly masters "the tactics of guarding the state border" in practice. This approach creates a solid foundation for the formation of operational-tactical thinking, but specific pedagogical technologies are required for its targeted development [2].

Operational-tactical thinking is the officer's ability to quickly assess a combat situation, identify and prioritize threats, optimally distribute available forces and means, and foresee the consequences of a decision made. This ability is not innate—it is formed step-by-step in a specially organized educational process.

Operational-tactical thinking is a special cognitive-mental activity of a future military specialist aimed at comprehensively assessing a tactical situation in a dynamic, uncertain, and high psychological stress environment, predictively forecasting risks and enemy actions, and developing the most optimal and

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justified commander's decision under limited time and insufficient information, and bringing it into the form of an order.

Proceeding from the specific characteristics of ensuring border security, the formation and development of this type of thinking in cadets is carried out through the following systematized components:

Analytical and synthetic analysis cognitive component:

Working under information deficit – rapidly summarizing, sorting, and bringing into a logical chain incomplete, distorted, and sometimes contradictory information obtained during a border violation or hybrid threats.

Understanding the enemy's / border violator's plan – identifying the tactics of the opponent's actions, psychological state, and probable directions through deductive and inductive methods by analyzing visible and hidden factors of the tactical situation.

Synthesis and drawing conclusions – merging information coming from various sources (observation posts, technical surveillance means, UAV transmissions, and intelligence data) into a single tactical picture (Picture of the Battlefield).

Prognostic and strategic foresight ability:

Multi-scenario modeling – cognitive modeling of several alternative (most dangerous, most probable, and optimal) variants of the development of the tactical situation.

"Thinking 2-3 steps ahead" principle – foreseeing the 2-3 step consequences of every commander's decision being made (allocating a reserve detachment, changing the combat order, moving firing points) and the probable response actions of the enemy.

Predicting critical points: Foreseeing the impact of terrain, weather conditions, and the time factor on the dynamics of combat operations.

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Adaptability, operationality, and intellectual reactivity:
Immediate adaptation to non-standard conditions – rapidly changing the tactical scheme without falling into psychological depression when a pre-drawn action plan fails in practice or unexpected factors arise (for example, a border detachment falling into an unexpected ambush, loss of communication).
Decision-making under time deficit – the ability to come to a firm and precise tactical decision without hesitation in extreme situations measured in seconds.
Overcoming mental rigidity (stereotyping) – abandoning traditional and template patterns and applying creative and unexpected tactical methods suitable for a specific situation.

Management and command-communication culture (Operational-communicative component):
Formulating and conveying tactical orders – conveying the adopted operational-tactical decision to subordinates in the form of short, understandable, militarily terminological, and unambiguous commands and orders.
Psychological superiority under stress – the ability to maintain psychological stability in oneself and the unit's personnel in severe combat conditions, and to demonstrate command will.
Traditional lecture and passive note-taking methods cannot ensure sufficient effectiveness in developing cadets' rapid adaptation to a changing combat and service-combat environment, practical tactical thinking, and command will [3]. Therefore, the teaching of the Border Troops Tactics discipline requires the comprehensive application of modern pedagogical, simulation, and digital technologies in the educational process:

Tactical Case-Study and situational tasks. The Case-Study method presents situations close to real combat experience to cadets. Cases based on decision-making, crisis management, and ethical dilemmas shape the cadet's skill of

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independent thinking under stress. Assessment criteria for each case: the validity of the decision, consideration of alternative options, and prior assessment of consequences.

Scenario development and reality coverage: Special tactical cases are created based on the analysis of real border incidents, illegal crossing actions, and hybrid threats. Cadets are given a situation description and tasked with planning the actions of a border detachment (post, patrol, rapid response group), assessing the operational situation, and developing a tactical decision within 1-3 minutes.

Defending and justifying results: The cadet displays their decision on a map or graphic model, justifies the operational-tactical necessity, and verbally formulates the commander's order to be given to subordinates from a tactical point of view [4].

Military-tactical games (Wargaming) and simulation role-playing. To create a dynamic game environment, the training group is divided into three main functional groups:

Border Unit (Blue Force): Performs the tasks of guarding the border line, analyzing information, deploying detachments, and bringing reserve forces into combat order.

Conditional border violators / Sabotage-reconnaissance group (Red Force): Develops and implements an asymmetric tactical plan for asymmetric actions, camouflage, deceptive maneuvers, and violation of the border regime.

Referees, controllers, and analysts' group (White Force): Monitors compliance of actions with rules and tactical intent, introduces unexpected incoming information (injects) into the situation, and objectively evaluates the results at the end of the game.

Pedagogical effect: This method develops in the cadet the skill not only of planning the actions of their own unit but also of understanding the enemy's logic, thinking in the enemy's place, and finding asymmetric tactical solutions.

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Geoinformation systems (GIS) and digital terrain models (3D Terrain).

Digital mapping and topographic analysis: Using digital maps based on 3D-relief and GIS technologies instead of traditional paper maps [5].

Analysis of visibility and movement zones: Using the system to accurately and visually calculate the observation zones of surveillance posts (Viewshed Analysis), blind spots, hidden movement corridors of border detachments, and firing positions.

Integration with UAV (Drone) data: Assessing the tactical situation by overlaying real-time visual and thermal transmissions obtained from unmanned aerial vehicles onto a digital map.

VR/AR Simulation and Immersive Technologies

Practicing in a virtual tactical environment: Using VR (Virtual Reality) and AR (Augmented Reality) helmets and combat simulators, cadets operate in a virtual copy of border areas in mountainous, forest, or urban conditions.

Managing combat order and firing: Cadets test moving as part of a border detachment in a virtual space, deploying combat order, establishing mutual communication, and distributing firing points in real-time.

Psychological training: Increasing cadets' stress resistance by virtualizing extreme noise, limited visibility, and unexpected shooting conditions.

Interactive video matrix and "Branching Scenario" method.

Dynamic video cases: Tactical situations are shown in video format up to a certain point. At a critical tactical moment, the video is paused, and the cadet is offered 3-4 action options.

Chain of decisions and analysis of consequences: Depending on each decision chosen by the cadet, video scenarios develop differently (for example: correct decision – capturing the border violator; wrong decision – falling into an ambush

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or loss of communication). This method clearly demonstrates the cause-and-effect relationship between a decision and its consequences.

Analysis of classes using the AAR (After Action Review) method and reflexive-cognitive development. The "After Action Review" (AAR) conducted at the end of a tactical exercise or simulation model is a decisive stage in reinforcing cadets' operational-tactical thinking, self-assessment of their cognitive activity (metacognition), and reflexive analysis skills. Unlike the traditional method of "one-sided assessment by the teacher," the AAR format is based on an objective, open, and constructive discussion by all participants. The 4 main supporting question structures of the AAR methodology and tactical analysis are organized according to the following rational-logical chain (Table 1):

1. What was supposed to happen? Tactical task: The initial logic of the assigned combat/service-combat mission, planned tactical actions, deployment of detachments, and expected operational result are reviewed.
2. What actually happened and why? Factual analysis: The chronology of events that occurred in real-time is reconstructed. Discrepancies between the plan and practice, unexpected actions of the enemy, and the influence of terrain and the time factor are identified.
3. What worked, what didn't, and why? Critical evaluation: The effectiveness of orders and tactical maneuvers given by the commander (cadet) is assessed. Cognitive errors made (underestimating risk, incomplete analysis of information, wasting time) are openly analyzed.
4. How can we improve next time? Constructive conclusion: Optimal action algorithm-models that should be applied in similar asymmetric or extreme tactical situations in the future are formed.

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Table 1. Step-by-step algorithm for conducting the AAR method in border tactics classes

Stage Name	Methodological content and task	Instrumental tools used	Expected tactical result
I. Information and data collection	Collecting all real and digital indicators in the exercise	GIS tracks, VR logs, UAV objective control, Radio recordings	Formation of an objective and un-falsified factual base
II. Chronological reconstruction	Sequential reconstruction of tactical episodes that occurred in real-time	Tactical map, time chronometry, video matrix playback	Precise identification of the difference between plan and practice
III. Cause-and-effect and cognitive analysis	Critical analysis of orders and decisions given by the commander (cadet)	"4 AAR questions" discussion, conclusions of referees and the enemy	Comprehension of cognitive and tactical errors made
IV. Standardization and practical conclusion	Forming an action plan for the future based on the experience gained	Tactical algorithms, recommendations, lesson summary	Skill of not repeating errors in non-standard situations

The formation of operational-tactical thinking is not a one-time process, but a long-term pedagogical process in which the cognitive activity of the cadet gradually becomes more complex. This model includes four stages: reproductive, reproductive-constructive, productive, and creative. Each stage relies on the previous one and creates the basis for the next. The transition between stages is characterized by an increase in the level of independent thinking of the cadet, a decrease in the need for external assistance, and an increase in responsibility in decision-making [6].

This model is based on the cognitive stages of Bloom's taxonomy (knowledge, understanding, application, analysis, evaluation, creation) and Vygotsky's concept of the "zone of proximal development". At each stage, the role of the

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teacher changes: in the first stage, he acts as the main source of information, while in the fourth stage, he serves only as a consultant and facilitator [7].

First stage – reproductive. The cadet masters the basic rules of tactical actions and the functional duties of border service.

Second stage – reproductive-constructive. The cadet applies the learned knowledge in typical tactical situations.

Third stage – productive. The cadet develops alternative solutions in non-standard situations and evaluates their consequences.

Fourth stage – creative. The cadet independently develops new tactical solutions and leads in collective decision-making.

Assessing the level of formation of operational-tactical thinking is the process of determining how developed the cadet's cognitive activity is and what complexity of tactical situations they can independently resolve. Assessment should not be one-sided: it must cover not only the cadet's knowledge but also the speed of thinking, flexibility, independence in decision-making, and sense of responsibility. Therefore, six main criteria are proposed below. For each criterion, three levels—low, medium, and high—are defined, which allows the teacher to accurately track the dynamics of the cadet's development.

The formation of operational-tactical thinking in cadets during the teaching of the Border Troops Tactics discipline is one of the most priority and strategic directions of modern military-pedagogical education [8]. Modern border conflicts, asymmetric and hybrid threats, and the widespread use of unmanned aerial vehicles require future officers to abandon traditional templates and make prompt, flexible, and scientifically based decisions. Based on the research results:

Comprehensive cognitive approach: Operational-tactical thinking is not just the acquisition of theoretical knowledge, but a multi-component cognitive process consisting of the integral unity of analytical-synthetic analysis, predictive forecasting, cognitive flexibility, and command-communication culture.

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Integration of pedagogical technologies: The transition from traditional passive teaching methods to interactive (Case-Study, Wargaming, Branching Scenario) and digital-simulation (GIS, 3D Terrain, VR/AR) technologies sharply increases the potential of cadets for independent thinking under time pressure and stress.

Reflexive analysis and AAR methodology: Concluding classes using the After-Action Review method shapes metacognitive skills in cadets, providing the opportunity to understand cognitive and tactical errors made and develop algorithms to avoid repeating them in the future.

Staged development models: The step-by-step development of operational-tactical thinking from the reproductive stage to the creative stage, as well as assessment based on the proposed six criteria, ensures objective monitoring of the level of professional training and combat readiness of future border service officers.

In conclusion, the proposed scientific-methodological model and the complex of pedagogical technologies are capable of raising the quality of teaching the Border Troops Tactics discipline in military educational institutions to a qualitatively new level and preparing highly qualified commander personnel capable of reliably ensuring state border security.

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