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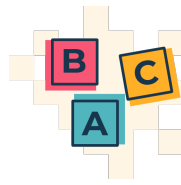
Transformation of martial arts into a system of kinesthetic cognitive control and personal identity formation

Stanislav Perlovskyi,

Specialist, Coach, Self-employed, Coach at Somdre Club,
Kharkiv, Ukraine, <https://orcid.org/0009-0008-4526-9616>

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Abstract: *The relevance of the study is determined by the need to reconsider martial arts not only as a means of physical training, but as a tool for developing kinesthetic cognitive control and personal identity formation under conditions of increasing demands for adaptability, self-regulation, and behavioral stability. The aim of the article is to substantiate the theoretical and methodological foundations of transforming martial arts into an integrated system that ensures the combination of motor, sensorimotor, and cognitive processes in the formation of controlled behavior and identity characteristics. The research methods are based on theoretical analysis and generalization of scientific sources, a systems approach, as well as elements of functional and comparative analysis to identify the relationships between motor activity and cognitive processes. As a result of the study, the essence of kinesthetic cognitive control as an integrated ability for conscious movement regulation in dynamic interaction conditions has been revealed. The mechanisms of integrating motor activity with perception, prediction, and decision-making processes in the formation of behavioral strategies have been investigated.*



*Approaches to the use of martial practices as a means of personal identity formation through the internalization of norms, values, and behavioral patterns have been generalized. The main scientific and practical problems have been identified, including the lack of an integrated model combining motor and cognitive components, difficulties in their objective measurement, and the limitations of traditional training approaches. **Conclusions.** It has been proven that increasing effectiveness is possible through the implementation of variable training approaches focused on the simultaneous formation of movement and decision-making, as well as the integration of self-regulation mechanisms into the training structure. The conclusions indicate the expediency of transitioning to a systemic understanding of martial arts as a tool for developing behavioral adaptability and personal resilience. Prospects for further research are associated with the development of quantitative assessment methods for kinesthetic cognitive control, the creation of standardized models for its formation, and the study of the transfer of these effects to non-sport contexts.*

Keywords: *sensorimotor integration, behavioral strategies, self-regulation, proprioception, adaptability.*

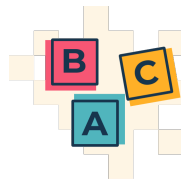
Трансформація бойового мистецтва у систему кінестетичного когнітивного контролю та особистісної ідентифікації

Перловський Станіслав Анатолійович,

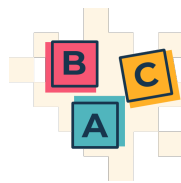
спеціаліст, тренер, самозайнятий, тренер клубу «Сомбрэ»,

м. Харків, Україна, <https://orcid.org/0009-0008-4526-9616>

Анотація: *Актуальність дослідження зумовлена необхідністю переосмислення бойових мистецтв у контексті їх використання не лише як засобу фізичної підготовки, а як інструменту формування кінестетичного*



когнітивного контролю та особистісної ідентифікації в умовах зростання вимог до адаптивності, саморегуляції та стійкості поведінки. **Метою статті** є наукове обґрунтування теоретико-методологічних засад трансформації бойових мистецтв у цілісну систему, що забезпечує інтеграцію рухових, сенсомоторних і когнітивних процесів у формуванні контрольованої поведінки та ідентифікаційних характеристик особистості. **Методи** дослідження ґрунтуються на використанні теоретичного аналізу і узагальнення наукових джерел, системного підходу, а також елементів функціонального та порівняльного аналізу з метою виявлення взаємозв'язків між руховою активністю та когнітивними процесами. **У результаті** дослідження розкрито сутність кінестетичного когнітивного контролю як інтегрованої здатності до усвідомленого керування рухами в умовах змінної взаємодії. Досліджено механізми поєднання рухової діяльності та процесів сприйняття, прогнозування і прийняття рішень у формуванні поведінкових стратегій спортсмена. Узагальнено підходи до використання бойових практик як середовища формування особистісної ідентифікації через інтеріоризацію норм, цінностей і моделей поведінки. Виявлено основні наукові та практичні проблеми, пов'язані з відсутністю цілісної моделі інтеграції моторних і когнітивних компонентів, складністю їх об'єктивного вимірювання та обмеженістю традиційних підходів підготовки. **Висновки.** Доведено, що підвищення ефективності можливе за умови впровадження варіативних тренувальних підходів, орієнтованих на одночасне формування руху і когнітивного рішення, а також інтеграції механізмів саморегуляції у структуру підготовки. Висновки свідчать про доцільність переходу до системного розгляду бойових мистецтв як інструменту розвитку поведінкової адаптивності та особистісної стійкості. Перспективи подальших досліджень пов'язані з розробленням методів кількісної оцінки кінестетичного когнітивного контролю, створенням стандартизованих

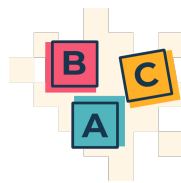


моделей його формування та вивчення можливостей перенесення отриманих результатів у позаспортові сфери діяльності.

***Ключові слова:** сенсомоторна інтеграція, поведінкові стратегії, саморегуляція, пропріоцепція, адаптивність.*

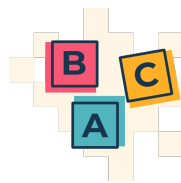
Problem statement. In the context of contemporary transformations in physical culture and the growing relevance of interdisciplinary approaches, there is an increasing need to reconceptualize martial arts not merely as a system of physical training, but as a comprehensive instrument for the development of kinesthetic cognitive control and personal identity formation. Despite the substantial body of research in sports science, movement psychology, and cognitive science, the issue of integrating motor, sensorimotor, and cognitive components into a holistic model of martial practices as a means of self-regulation and self-determination remains insufficiently elaborated. Existing approaches are predominantly fragmented, which complicates the development of scientifically grounded training methodologies aimed not only at enhancing physical qualities, but also at fostering conscious motor control, adaptive behavioral strategies, and stable identity patterns. This necessitates the development of theoretical and methodological foundations for transforming martial arts into a system that integrates embodied experience with cognitive processes, which is of significant importance for improving athlete training, advancing educational programs in physical culture, and applying such practices in psychological rehabilitation and the development of personal resilience under conditions of increased stress.

Analysis of recent research and publications. A review of contemporary studies indicates the emergence of a comprehensive scientific approach to interpreting martial arts as a system of kinesthetic cognitive control and personal identity formation, within which psychophysiological, cognitive, pedagogical, and applied aspects are integrated. M. Vlasov substantiates a methodology for



constructing individualized trajectories of physical therapy based on the analysis of motor activity, thereby providing a foundation for the individualization of kinesthetic control [1]. S. Teliukov and co-authors examine issues of internationalization in the educational space and the integration of scientific and pedagogical potential, which indirectly influence the transformation of training for specialists in physical culture and martial practices [2]. O. Mahilda proposes an original methodology of functional exercises as a tool for developing a healthy movement culture, emphasizing the importance of bodily awareness [3]. V. Ovcharuk and co-authors highlight the educational and formative potential of mass sports activities, substantiating their role in shaping personal identity [4]. K. Hulei and co-authors demonstrate the effectiveness of boxing-based methods in improving psychophysiological indicators, thereby confirming the integration of motor and cognitive processes [5]. O. Petrachkov analyzes the cognitive profile of officers, emphasizing the importance of cognitive characteristics for professional activity and self-regulation [6].

Further development of the issue is reflected in international studies that reveal the cognitive nature of martial arts. R. Bailey investigates the role of weapons in martial arts as a means of extending cognitive boundaries and forming embodied cognition [7]. J. Gordon demonstrates that martial arts contribute to the development of self-regulated learning, which is a key component of cognitive control [8]. Z. Agoff and co-authors examine the phenomenon of distributed cognition and flow states in mixed martial arts, emphasizing the integration of sensorimotor and cognitive processes [9]. J. Ferreira analyzes decision-making mechanisms in martial arts, focusing on their complex cognitive structure [10]. D. Simsek and A. B. Yildiz experimentally confirm the impact of dual-task conditions on motor and cognitive performance, highlighting their interdependence [11]. A. Orlandi and co-authors establish that the level of expertise determines the effectiveness of kinesthetic motor imagery as a component of internal movement control [12].



A distinct group of studies addresses psycho-emotional and neurocognitive mechanisms. D. Di Corrado and co-authors demonstrate the role of mental imagery and self-efficacy in stress regulation among athletes, thereby revealing the psychological mechanisms of self-control [13]. S. Ludyga and co-authors substantiate the positive effects of martial arts on cognitive control in children, indicating their significant neurocognitive potential [14]. V. Pujari summarizes research findings on the influence of martial arts on attention and executive functions, emphasizing their relevance within cognitive-behavioral approaches [15].

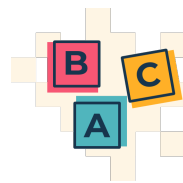
Unresolved aspects of the general problem. Despite the availability of studies in the fields of martial arts and cognitive science, there is still no holistic understanding of kinesthetic cognitive control as an integrated phenomenon that combines movement, perception, and decision-making within a dynamic interaction. Existing approaches remain fragmented due to the complexity of investigating cognitive processes under real combat conditions and the prevailing orientation of training practices toward the reproduction of technical actions without consideration of their cognitive content.

The insufficient elaboration of these aspects limits the possibility of considering martial arts as an effective tool for shaping controlled behavior and personal resilience. In this regard, the present study is aimed at clarifying the theoretical foundations of integrating motor and cognitive processes and substantiating approaches that enhance the effectiveness of their practical application.

Purpose of the article (Research objectives). The purpose of the article is to substantiate the theoretical and methodological foundations for transforming martial arts into a system of kinesthetic cognitive control and personal identity formation.

Objectives of the Study:

1. To reveal the essence of kinesthetic cognitive control and the specific features of integrating motor and cognitive processes.



2. To generalize approaches to personal identity formation and identify the challenges of transforming martial arts into a system of self-regulation.

3. To substantiate recommendations for improving the effectiveness of developing kinesthetic control and identity formation.

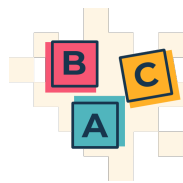
Main material. Kinesthetic cognitive control in the context of martial arts is interpreted as an integrated capacity of the subject to consciously regulate their own movements based on the interaction of sensorimotor sensations, cognitive processes, and embodied experience of interaction with the environment. Its essence lies not only in the accurate reproduction of technical actions, but in the ability to adaptively regulate motor behavior in accordance with dynamically changing combat conditions, which involves the activation of attention, anticipation of the opponent's actions, real-time decision-making, and continuous adjustment of motor programs. Structurally, it is formed at the intersection of proprioceptive mechanisms, neurodynamic processes, and cognitive-behavioral strategies, ensuring the integrity of motor activity functioning (Table 1).

Table 1

Structural components of kinesthetic cognitive control in martial arts

<i>Component</i>	Content	Practical significance
<i>Proprioceptive</i>	Sensation of body position, muscle tension, and balance	Ensures accuracy and coordination of movements
<i>Sensorimotor</i>	Integration of sensory information and motor response	Increases reaction speed to opponent's actions
<i>Cognitive</i>	Processes of attention, thinking, and anticipation	Facilitates decision-making in dynamic conditions
<i>Regulatory</i>	Self-control and correction of motor actions	Ensures stability in the execution of techniques
<i>Adaptive</i>	Ability to modify motor strategies	Enables effective performance in non-standard situations

Source: compiled by the author based on [8, p. 31; 10, p. 472; 12, p. 240; 13; 14].

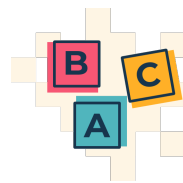


The functioning of these components in contemporary martial arts practice is manifested through the coordinated interaction of sensory, motor, and cognitive mechanisms that ensure the accuracy, timeliness, and appropriateness of motor actions. Proprioceptive sensitivity enables the athlete to maintain control over body position even in the absence of visual support, which is crucial when performing throwing techniques or engaging in clinch situations, where spatial orientation relies primarily on bodily sensations [8, p. 31]. For instance, in executing a sweep, the effectiveness of the action depends on the ability to detect the moment of the opponent's loss of balance and synchronize one's movement without delay.

Sensorimotor integration is realized through the rapid transformation of sensory input into a purposeful motor response. In combat, this is reflected in the ability to respond not to the movement itself but to its initial phase, thereby gaining a temporal advantage [13]. For example, when practicing defense against a straight punch, the athlete learns to identify minimal changes in the opponent's shoulder position and initiate an evasion or block before the attack is fully executed. Such skills are developed through variable training scenarios in which movement parameters constantly change and cannot be rigidly standardized.

The cognitive component ensures the selection of appropriate actions in a given situation based on the analysis of prior experience and current conditions. In practice, this is expressed in the choice of combat tactics depending on the opponent's style: against an aggressive opponent, counterattacking strategies are more effective, whereas against a cautious one, provocation of active engagement is more appropriate [10, p. 472]. Motor regulation occurs continuously, including micro-adjustments of trajectory, force, and tempo, which is particularly evident in strike combinations, where each subsequent element is refined according to the outcome of the previous one.

The practical significance of such an organization lies in the athlete's ability to act effectively under conditions of uncertainty, where predefined algorithms do



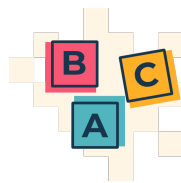
not guarantee success. In the training process, this is addressed through the inclusion of exercises with variable interaction scenarios, time constraints for decision-making, and the combination of technical actions with cognitive load. As a result, not merely a set of techniques is formed, but the ability to apply them appropriately, which ultimately determines the level of mastery in modern martial arts.

The integration of motor activity and cognitive processes in the formation of an athlete's behavioral strategies is defined as a process of aligning motor actions with mechanisms of perception, information processing, and decision-making under changing competitive conditions. In contrast to the isolated consideration of technique or cognition, the key aspect in this context is their functional unity, in which movement acts not only as motor execution process, but also as a means of situational cognition. Behavioral strategy is formed through the continuous correlation of action intention, evaluation of the opponent's behavior, and the outcomes of previous motor decisions, ensuring dynamic adaptation to the course of the bout (Table 2).

Table 2

Features of the integration of motor activity and cognitive processes in the formation of athletes' behavioral strategies

<i>Feature</i>	<i>Content</i>	<i>Practical Significance</i>
<i>Perceptual orientation</i>	Focus on key signals in the opponent's movement	Reduces information-processing time
<i>Anticipatory action</i>	Prediction of situational development based on prior experience	Ensures proactive decision-making
<i>Variability of decisions</i>	Availability of several alternative motor responses	Enhances behavioral flexibility
<i>Situational appropriateness</i>	Selection of action according to specific interaction conditions	Optimizes the effectiveness of technical techniques

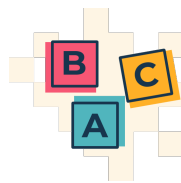


<i>Dynamic correction</i>	Modification of action during its execution	Reduces the likelihood of errors
<i>Strategic coherence</i>	Subordination of individual actions to overall tactics	Ensures the integrity of the athlete's behavior

Source: compiled by the author based on [9, p. 55; 10, p. 475; 11, p. 90; 12, p. 243; 15, p. S22].

The integration of motor activity and cognitive processes in real competitive interaction manifests as a holistic process in which perception, decision-making, and action are formed almost simultaneously rather than sequentially. The athlete's attention is not distributed evenly across all elements of the situation; instead, it is selectively focused on the most informative cues that allow rapid interpretation of the opponent's intentions. For instance, in close-range situations, even a minimal change in the opponent's body position may be sufficient to initiate a defensive or counterattacking response, with the decision being made before the opponent's movement is fully completed. This indicates that movement serves not only as a response but also as a means of situational perception and interpretation.

At the same time, the formation of a behavioral strategy is not limited to the selection of an individual technique, but occurs through the continuous refinement of actions in response to changing conditions. Thus, during a bout, an athlete may initiate an action as an attack, yet in the course of its execution transform it into a preparatory maneuver or a counter-technique depending on the opponent's reaction [9, p. 55]. Such plasticity is achieved through the integration of motor experience with cognitive evaluation of the situation, whereby each movement simultaneously performs the function of action and a source of information. In training, this is implemented through the creation of conditions in which fixed algorithms cannot be applied, for example, in variable sparring scenarios with changing constraints, where decisions must be made under time pressure.



It is also essential that action correction occurs continuously, without a clearly defined transition between the stages of «analysis – decision – execution». In strike combinations or transitions between techniques, each subsequent movement is refined according to the outcome of the previous one, which helps to prevent the accumulation of errors. In this context, behavioral strategy functions as a dynamic structure formed during interaction rather than being predetermined [15, p. S22]. This explains why an athlete's effectiveness depends not only on the level of technical proficiency, but also on the ability to integrate motor actions with real-time situational assessment, ensuring the appropriateness and timeliness of each decision within a specific context.

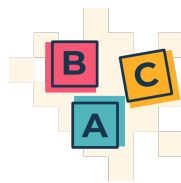
Martial practices are considered as an environment in which personal identity is formed through the integration of embodied experience, interaction norms, and internalized values that are consolidated through systematic activity (Table 3).

Table 3

Approaches to the use of martial practices as a means of personal identity formation

<i>Approach</i>	Content	Practical Significance
<i>Disciplinary</i>	Formation of internal norms through regularity and rules	Develops self-control and responsibility
<i>Value-oriented</i>	Assimilation of ethical principles of interaction	Facilitates the formation of moral attitudes
<i>Role-based</i>	Identification with behavioral models (student, fighter, coach)	Ensures social definition and role clarity
<i>Reflective</i>	Comprehension of one's own experience and actions	Deepens awareness of personal identity
<i>Communicative</i>	Interaction with partners and opponents	Develops social skills and adaptability
<i>Transformational</i>	Change in self-perception through overcoming difficulties	Promotes personal development

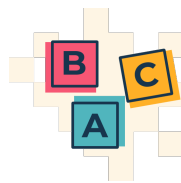
Source: compiled by the author based on [4, c. 836; 6, c. 81; 8, p. 34; 13; 15, p. S23].



In a real training environment, the identity-forming effect of martial practices emerges not through the declarative articulation of norms, but through their reproduction in repeated actions that are verified by outcomes. Thus, the stability of an athlete's behavior under load is reflected in the ability to maintain technical quality and emotional control in situations where physical fatigue or competitive pressure typically leads to disorganization of movement. For example, in a series of sparring sessions with gradually increasing intensity, it can be observed that some athletes begin to lose accuracy and shift toward chaotic actions, whereas others maintain structured movement and decision appropriateness [6, p. 81]. This difference reflects the level of developed internal regulation, which constitutes a component of personal identity.

Importantly, ethical and value orientations are manifested through specific parameters of interaction, including the selection of force application, control of distance, and response to a partner's mistakes. In practice, this means that an athlete who is aware of the limits of acceptable behavior not only adheres to formal rules but is also capable of independently regulating the intensity of actions according to the situation. For instance, when working with a less experienced partner, such an athlete deliberately adjusts tempo and force while maintaining technical correctness, which indicates the integration of ethical norms into behavioral strategies.

The process of identity formation also occurs through the gradual assimilation of role models; however, their significance is determined not by formal status but by the ability to reproduce effective modes of action. In training groups, this is manifested in the tendency of athletes to orient themselves toward those participants whose behavior demonstrates resilience to errors, the capacity for self-correction, and rational distribution of effort [13]. The reproduction of such models in one's own practice leads to changes in self-assessment, which becomes grounded not in external approval but in internally validated experience.

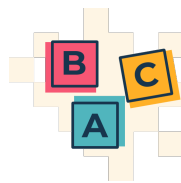


A significant role is also played by the mechanism of reflection, which in martial practices has an applied character and is directly linked to the outcome of actions. The analysis of a performed technique or tactical decision occurs not abstractly, but through comparison between expected and actual effects. For example, an unsuccessful attempt to execute a technique is analyzed in terms of specific parameters—loss of balance, loss of distance, or delayed entry phase—after which these aspects are corrected in subsequent repetitions. Such cyclicity develops the capacity for conscious improvement and reinforces the sense of control over one's own development [13].

The transformation of martial arts into a system of cognitive control and self-regulation is complicated primarily by the absence of a holistic model that would integrate motor actions with processes of perception, decision-making, and emotional regulation. In practice, this manifests as a gap between technical proficiency and the ability to act appropriately under changing conditions: an athlete may master a technique yet lose effectiveness when confronted with non-standard opponent behavior. Existing studies often focus either on movement physiology or on isolated cognitive characteristics, which does not allow for a comprehensive description of their joint functioning in a bout [9, p. 55; 10, p. 475].

The problem of measurement also remains complex, as indicators of cognitive control are difficult to capture in dynamic interaction. Standard tests of attention or reaction do not reflect situations in which decisions are made under pressure, with risk and incomplete information. This becomes evident in training when an athlete demonstrates high performance in controlled exercises but makes errors during sparring, where simultaneous evaluation of distance, opponent intention, and personal state is required.

Practical implementation is further constrained by established training approaches that prioritize the rehearsal of techniques in stable conditions. The transition to variable scenarios that require thinking in motion is often perceived as



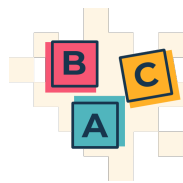
an unnecessary complication without immediate short-term benefits. As a result, skills are formed that are effectively reproduced in standard exercises but fail to transfer to competitive situations.

An additional challenge lies in the variability of athletes' capacity for self-regulation. Some adapt quickly to changes and maintain control even after errors, while others lose tempo and resort to impulsive decisions. In group training settings, these differences are difficult to accommodate, which reduces the effectiveness of uniform training programs. Ultimately, the key limitation is not the absence of individual methods, but their insufficient coherence and weak connection with the real dynamics of a bout, where cognitive control manifests as the ability to act accurately under conditions of uncertainty.

Enhancing the effectiveness of martial arts in the development of kinesthetic control and personal identity is associated with a shift from the reproduction of techniques in stable conditions to the organization of activity in which movement and decision-making are formed simultaneously. It is advisable to systematically employ variable interaction modes, where actions are not predetermined but defined by the partner's behavior, for example, in sparring with variable distance or limited reaction time. This compels the athlete not only to execute techniques but to continuously refine them in accordance with situational demands.

Strengthening kinesthetic control is achieved through the complication of sensory conditions, reducing reliance on visual cues while increasing the role of internal sensations. In practice, this is implemented through exercises involving partial visual restriction, rhythm alteration, or execution following vestibular load, which enhances movement accuracy in unpredictable situations.

The formation of personal identity should be associated with the structure of group interaction, where the athlete performs multiple roles—not only executing actions but also creating conditions for the partner's performance. Such an



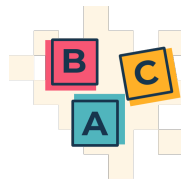
organization changes the nature of participation in training and reinforces models of responsible behavior that extend beyond the boundaries of sports activity.

A short post-action analysis is also effective, where the outcome of execution is immediately correlated with the causes of success or error and verified in subsequent repetitions. This enables the consolidation of corrections without a gap between action and its reflection. At the same time, the individualization of load allows for the consideration of different levels of self-regulation, preventing both overload and loss of motivation for development.

The coordinated application of these approaches ensures not only an increase in technical performance, but also the formation of the capacity for conscious control of one's actions and stable behavioral orientations that determine effectiveness under conditions of uncertainty.

Conclusions. It has been established that martial arts function as an integrated system in which kinesthetic control, cognitive processes, and self-regulation ensure the appropriateness of actions under dynamically changing conditions, while effectiveness is determined by the ability to integrate perception, decision-making, and movement in real time. At the same time, it has been demonstrated that martial arts serve as an environment for personal identity formation, where models of self-control and behavioral stability are consolidated through practical experience.

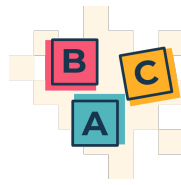
The main challenges include the absence of a comprehensive theoretical model for integrating motor and cognitive components, the difficulty of their objective measurement within dynamic interaction, and the limited effectiveness of traditional technique-oriented approaches that fail to ensure the transfer of skills to competitive conditions. It is recommended to orient training toward variable modes of activity in which action is formed simultaneously with decision-making, complemented by sensory complexity of conditions, short cycles of reflective correction, and individualized load adjustment.



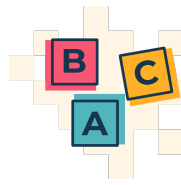
Prospects for further research are associated with the development of methods for the quantitative assessment of cognitive control, the creation of standardized models for its formation, and the verification of the effectiveness of such approaches across different types of martial arts and in non-sport contexts.

References

1. Vlasov M. Methodology for developing individual physical therapy trajectories based on the analysis of sport-specific activity. *Педагогічна Академія: наукові записки*. 2026. № 26. DOI: <https://doi.org/10.5281/zenodo.18456220>.
2. Телюков С., Куценко В., Горбачов К., Кравченко С. Інтернаціоналізація вищих військових навчальних закладів та інтеграція наукових і науково-педагогічних працівників до світового наукового простору: проблеми та перспективи. *Збірник наукових праць Державного науково-дослідного інституту випробувань і сертифікації озброєння та військової техніки*. 2025. Вип. 2, № 24. С. 156–165. DOI: <https://doi.org/10.37701/dndivsovt.24.2025.17>.
3. Mahilda O. The author's methodology of functional exercises as a tool for developing a healthy motor culture. *Педагогічна Академія: наукові записки*. 2025. № 25. DOI: <https://doi.org/10.5281/zenodo.18020875>.
4. Овчарук В., Максимчук Б., Станєва С., Максимчук І., Овчарук В. Спортивно-масова робота університетів: освітньо-виховний потенціал світових та українських ЗВО. *Перспективи та інновації науки*. 2025. Вип. 1, № 47. С. 833–844. DOI: [https://doi.org/10.52058/2786-4952-2025-1\(47\)-833-844](https://doi.org/10.52058/2786-4952-2025-1(47)-833-844).
5. Гулей К. С., Хіменес Х. Р., Наконечний Р. Б. Ефективність використання засобів боксу для підвищення рівня психофізіологічних показників курсантів механізованих підрозділів. *Академічні візії*. 2025. № 50. DOI: <https://doi.org/10.5281/zenodo.19334215>.



6. Петрачков О. Когнітивний профіль офіцерів оперативного рівня та його значення для професійної діяльності. *Фізична культура і спорт: наукові перспективи*. 2026. № 1. С. 78–88. DOI: <https://doi.org/10.31891/pcs.2026.1.9>.
7. Bailey R. The sword and the cane: martial arts weapons and the boundaries of cognition. *Martial Arts Studies*. 2025. № 18. DOI: <https://doi.org/10.18573/mas.257>.
8. Gordon J. Empowered learners: how martial arts foster self-regulated learning. *Mantle: The Annual Review of Interdisciplinary Research*. 2023. Vol. 1, № 1. P. 29–39. DOI: <https://doi.org/10.14288/mantle.v1i1.198385>.
9. Agoff Z., Gwerder B., Keyser V. Experimentation, distributed cognition, and flow: a scientific lens on mixed martial arts. In: *The Philosophy of Mixed Martial Arts*. Routledge, 2021. P. 53–65. URL: <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003122395-6/experimentation-distributed-cognition-flow-zachary-agoff-benjamin-gwerder-vadim-keyser> (дата звернення: 12.04.2026).
10. Ferreira J. S. Decision making and martial arts. *International Journal of Operational Research*. 2023. Vol. 48, № 4. P. 467–493. DOI: <https://doi.org/10.1504/IJOR.2023.135497>.
11. Simsek D., Yildiz A. B. The acute effects of dual task on the motor and cognitive performances in taekwondo players. *Kinesiologia Slovenica*. 2022. Vol. 28, № 3. P. 86–101. DOI: <https://doi.org/10.52165/kinsi.28.3.86-101>.
12. Orlandi A., Arno E., Proverbio A. M. The effect of expertise on kinesthetic motor imagery of complex actions. *Brain Topography*. 2020. Vol. 33, № 2. P. 238–254. DOI: <https://doi.org/10.1007/s10548-020-00760-x>.
13. Di Corrado D., Tortella P., Coco M., Guarnera M., Tusak M., Parisi M. C. Mental imagery and stress: the mediating role of self-efficacy in competitive martial arts athletes. *Frontiers in Psychology*. 2025. Vol. 16. Article 1517718. DOI: <https://doi.org/10.3389/fpsyg.2025.1517718>.



14. Ludyga S., Hanke M., Leuenberger R., Bruggisser F., Pühse U. W. E., Gerber M., Weber P. Martial arts and cognitive control in children with attention-deficit hyperactivity disorder and children born very preterm: a combined analysis of two randomized controlled trials. *Medicine and Science in Sports and Exercise*. 2022. Vol. 55, № 5. Article 777. DOI: <https://doi.org/10.1249/MSS.00000000000003110>.

15. Pujari V. Martial arts as a tool for enhancing attention and executive function: implications for cognitive behavioral therapy – a literature review. *Journal of Pharmacy and Bioallied Sciences*. 2024. Vol. 16 (Suppl 1). P. S20–S25. DOI: https://doi.org/10.4103/jpbs.jpbs_612_23.