# Structural and meaningful organization of coach's attitudes in the formation of operational thinking in young athletes

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**Abstract**

**Objective of the study** was to specify the content of the coach's attitudes to the young athlete with a focus on the development and full-fledged demonstration of operational thinking at a high pace of training activities.

**Methods and structure of the study.** In the course of scientific work, the following research methods were used: analysis of literary sources; content analysis of the trainer's attitudes; testing: psychomotor abilities, differentiation ability, cognitive functions, styles of activity, components of personality orientation. The study was conducted on the basis of the Chertanovo Sports Boarding School, Olympic Reserve Sports School No. 1, and the Moscow National Hockey Center in April 2021 with the participation of 10 coaches and 34 young athletes.

**Results and conclusions.** The factors revealed in the course of the study, reflecting the activity features of the implementation of operational thinking at a high pace of execution of a motor task in young athletes-players ("the number of precise, prompt actions in the format of the type of thinking"; "the ability to differentiate the parameters of actions with a constant concentration of sensory-perceptual attention" ; "quantitative and temporal characteristics of activity"; "the number of correct decisions in a changing environment") made it possible to specify the coach's instructions for young athletes in the direction of development and full realization of the ability to operational thinking in conditions of a high pace of training and competitive activity.

**Keywords:** *coach's attitudes, operational thinking, young athletes, hockey, football, factors.*

**Introduction.** The constantly increasing pace of competitive activity in team sports makes high demands on the various components of the young athlete's fitness. At present, sports games are characterized by a high pace of the game, technical and tactical variability and unpredictability of competitive struggle, tough confrontation. Therefore, the player's ability to analyze the competitive situation, make prompt decisions, implement them in a specific tactical plan through technical actions and combinations, both independently and together with the players of his team, largely determines the outcome of the competition [1].

This circumstance initiates a substantive consideration of the components that systematically determine the basic basis for the implementation of operational thinking in action and activity at the early stages of sports improvement. Thus, D. Memmert and S. K nig emphasize the importance of teaching "general playing skills at a high speed of its implementation" [5].

Along with this, experts pay attention to the relationship between "visual perception and visual attention and skills in sports", highlighting "blindness due to inattention when solving a real problem in sports games" and "rapid exhaustion by an athlete of adaptive capabilities (including mental ones)" [4]. At high volumes of given loads, the so-called "motor-energy stereotype of low speeds is formed, adaptation to training activity is underway, which does not correspond to competitive" [3].

Observation of the training process of young hockey players and football players revealed the problem of the lack of conjugation of the coach's attitudes with the tasks of improving technical and tactical actions and combinations in parallel with the formation

of high-speed strategies, tactics, models and styles of competitive struggle.

**Objective of the study** was to specify the content of the coach's attitudes to the young athlete with a focus on the development and full-fledged demonstration of operational thinking at a high pace of training activities.

**Methods and structure of the study.** In the course of scientific work, the following research methods were used: analysis of literary sources; content analysis of the trainer's attitudes; testing: psychomotor abilities, differentiation ability, cognitive functions, styles of activity (V.Ya. Anfimov, A.G. Ivanov-Smolensky; Allison, Hayes, 1996; I.P. Shkuratova, the Compass method; G.A. Kuzmenko [2, p. 205]); Test-training programs V. Sivitskii - noise immunity (A.V. Rodionov); components of personality orientation (A.V. Rodionov, A.V. Stambulov, Yu.L. Khanin, A. Mehrabian). The study was conducted on the basis of the Chertanovo Sports Boarding School, Olympic Reserve Sports School No. 1, and the Moscow National Hockey Center in April 2021 with the participation of 10 coaches and 34 young athletes.

**Results of the study and their discussion.** Based on pedagogical observations of the communicative interaction of coaches with young hockey players and football players aged 11-13 years in 30 training sessions, it was revealed that coaches do not focus on the special semantic organization of methodological recommendations that reflect the successive implementation of operational thinking components (14 variables, Table 1), it is noted non-coincidence of the localization of the meaningful accents of the methodological recommendations and the coach's attitudes to the actualization of the competitively significant manifestations of the young athlete's thinking in conditions of a high rate of activity implementation - 85% of the attitudes - in the zone 10, 12 and 14 of the quality requirements.

We present the co-organization of the studied variables and factors that reflect the complex characteristics of the speed and adequacy of the execution of the elements of training activity by young players.

With an increase in the sample size (more than 34 young athletes), an increase in the factor weight of three variables is likely: 1) "The number of correct de-

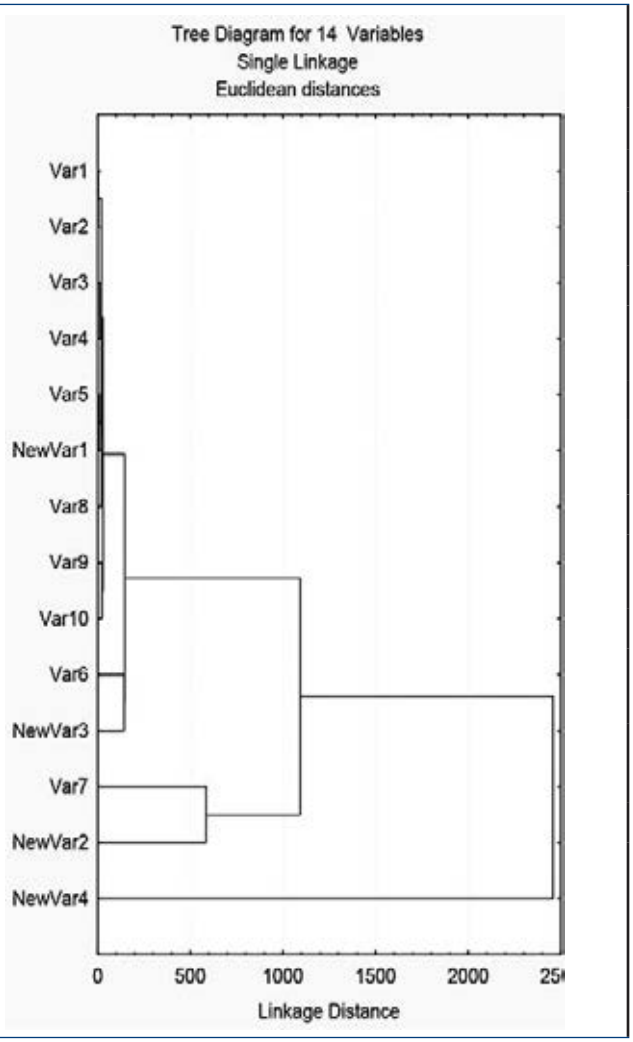
**Table 1.** *Factors of effective high-speed implementation of training activity by a young athlete, characterizing the features of the development of operational thinking*

| Research variables | Factor loadings (Varimax raw) Extraction: Main components(Noted loads >700000) | | | |
|---|---|---|---|---|
| | Factor 1 The number of precise, operational actions depending on the type of thinking | Factor 2 The ability to differentiate actions with a constant concentration of sensory-perceptual attention | Factor 3 Quantitative- and temporal characteristics of activities | Factor 4 Number of correct decisionsin a changing environment |
| 1. TM*: Analyst, synthetic, formal combinator | **0,702857** | 0,534129 | 0,010232 | 0,051505 |
| 2. TM: Rational, receptive, reflective | **0,871131** | 0,274347 | 0,036934 | -0,00927 |
| 3. SI, CAT: Game «5», the number of moves | 0,056175 | 0,164888 | **0,834628** | 0,415413 |
| 4. SI, CAT: Game «5», task completion time | -0,127091 | 0,458193 | 0,334907 | 0,676436 |
| 5. PMA**: Reaction to a moving object, the number of precise clicks | **-0,933768** | -0,099291 | -0,06234 | 0,039814 |
| 6. PMA: Tapping test, average of 6 attempts | 0,168569 | -0,455206 | -0,11414 | -0,50396 |
| 7. PMA: Reaction of Choice | **0,900630** | -0,005800 | 0,230442 | 0,004847 |
| 8. DA, SPA: Sense of time, (time acceleration trend), out of 10 attempts | -0,215683 | **-0,823778** | -0,359184 | 0,091152 |
| 9. DA, SPA: Eye gauge | 0,094219 | **0,948057** | 0,011611 | 0,107792 |
| 10. DA, SPA: Accuracy of muscle efforts, dynamometer, 50% max. | 0,215944 | **0,852034** | 0,188351 | 0,105012 |
| 11. Personality orientation: Risk-taking | **-0,841561** | -0,070569 | 0,048743 | 0,179024 |
| 12. Regulatory A.: Noise Immunity | 0,608900 | 0,600853 | -0,12665 | 0,163253 |
| 13. Field independence, concentration of attention: «Compass», the number of correct answers | 0,010761 | -0,047189 | -0,16930 | **0,897671** |
| 14. Field independence, concentration: «Compass», run time | 0,115094 | 0,130730 | **0,893610** | -0,33213 |

*Indicators:* Type of thinking (TM); Spatial imagination, combinatorial abilities of thinking (SI, CAT); psychomotor abilities (PMA); Differentiation ability, sensory-perceptual attention (DA, SPA); personality orientation; Regulatory abilities (A); Field independence in concentration.

**Table 2.** *Cluster co-organization of attributes of operational thinking of a young athlete*

| Features of conjugation of the studied variables |
|---|
| 1. TM: analyst, synthetic, formal combinator |
| 2. TM: rational, receptive, reflective |
| 3. Spatial imagination, combinatorial SM: Game «5» number of moves. |
| 4. Spatial imagination, combinatorial SM: Game «5» time |
| 5. PMA: Reaction to a moving object, the number of precise clicks |
| 11. Personality orientation: risk-taking |
| 8. DA, SPA: sense of timing, underestimation, out of 10 attempts |
| 9. DA, SPA: Eye gauge |
| 10. DA, SPA: muscle effort accuracy, dynamometer, 50% max. |
| 6. ПМС: tapping test, average of 6 |
| 13. Field independence, concentration of attention: «Compass», the number of correct answers |
| 7. PMA: reaction of choice |
| 12. Regulatory A.: noise immunity |
| 14. Field independence, concentration: «Compass», run time |




cisions in a changing environment" - the time it takes to complete a task (when assessing spatial imagination, combinatorial thinking abilities) and a tapping test that reflects psychomotor abilities;

2) "The number of accurate, prompt actions in the format of the type of thinking" - "Noise immunity". 14 variables under study are linked into a single correlation galaxy with a range of coefficients reflecting significant relationships (0.443855 - 0.880581), (Correlations (Spreadsheet9) Marked correlations are significant at $p<0.05$ N=34, and confirm the weight of those accepted for the study variables.

Cluster analysis data (Table 2) make it possible to specify the coach's attitudes and form methodological recommendations in the context of the successive co-organization of the attributes of the young athlete's operational thinking, focused on the quality of training activity.

The requirements of the coach to the athlete for noise-resistant and prompt performance of actions, taking into account the positions of partners and opponents, characterize the final stage of the associated implementation of the abilities under consideration (No. 7,12,14) - to anticipatory operational thinking and effective (-th) quick action (activity at a high pace).

Considering the methodological sequence of constructing the content of methodological recommendations, one should pay attention to the basic clusters and successively form requirements based on them:

1) Think: analytically (quickly analyze all the parameters of the game situation); synthetically (perceive the situation as a whole: make operational decisions based on fixing the trajectory and speed of movement of all partners and opponents on the field (site); do not perform the action formally, without interest - concentrate, tune in and demonstrate maximum abilities. When teaching unusual styles - give instructions in their system of requirements.

2) Think: rationally (economically and quickly); receptively (instantly, based on one's own feelings and decisions); reflexively (comparing, retracted analyzing).

3) Focus on the search and operational definition of a more economical, ergonomic action; search, com-

pare, compare, “what number of actions is better.”

4) Implement a technical and tactical technique, a combination at maximum speed, outstrip the opponent’s actions, demonstrate tempo interaction with partners.

5) Demonstrate the accuracy of projectile control, perform the final action accurately in free, defined zones.

6) Trust your sense of the moment of action, take risks, not be afraid of possible negative consequences, think in terms of possibilities.

7) Promptly, quickly, instantly, act, “do not delay” in making a decision, focus on working at the highest possible speed of the execution of the action.

8) Determine the distance to the partner, opponent, the dynamics of their movement, look for free zones, feints and strokes on the counter move to free the zones for hitting the ball, throwing the puck.

9) Invest so much effort to effectively control the trajectory of movement (links) of the body, the ball (puck), the speed of movement at the end point.

10) Demonstrate individually (over) the maximum rate of implementation of technical and tactical actions in the range of six-second work.

11) In training, playing, focus on multiple quick search for the right solutions, “do not fall out of the situation” (for example, in hockey - within one shift 45 s - 1 min 15 s; in football: from 45 s - up to 1.5 min.

12) Demonstrate a high speed of choosing a method of action, feel the right ways to solve the situation; make the right decisions promptly.

13) Demonstrate fault-tolerant, task-focused play behavior.

14) Field-independent, focused on the task to quickly perform a technical and tactical technique, a combination, carry out a shift, play a segment of competitive time.

**Conclusions.** In the course of the study, four factors were identified that reflect the activity features of the implementation of operational thinking at a high pace of execution of a motor task: “The number of precise, prompt actions in the format of the type of thinking”; “The ability to differentiate actions against the background of sensory-perceptual attention”; “Quantitative and temporal characteristics of activity”; “The number of correct decisions in a changing environment”.

The presented structural and content organization of the coach’s attitudes to the young athlete, which ensures the successive development and full implementation of operational thinking in the high-speed component of training activity, will improve the professional competence of coaching staff and, as a result, the quality of training of the sports reserve.

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