

**METHODOLOGICAL ASPECTS ON THE DEVELOPMENT OF  
COORDINATIVE CAPACITIES AT CHILDREN OF 8-10 YEARS  
THROUGH SPECIFIC METHODS OF TRAINING IN FOOTBALL  
GAME**

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**Keywords:** strategy, psychomotric components, football.

**Abstract:** The correct combination of the "3Ms" in targeted teaching strategies and focused on operational objectives of education / development of psychomotric components in soccer, is confirmed by obtaining significant progress in addressing effectively instructional proposed objectives in the formative stage. Using operational psychomotric structures mainly in training, it was confirmed regarding the experimental group by the results in both interim and final testing, especially regarding the general psychomotric tests and specific psychomotric samples.

**Current basis reflected in literature**

Junior and children coaches are expecting a restructuring of design in terms of their theoretical and methodological work, due to changes in social order and the educational goal in terms of football during after 1989. We can not find if we want to be realistic, that all children and junior sector of the country looks pretty much a major change to prevent and even halt the mediocre phenomenon of this system.

After studying literature, we consider discrete and insufficiently validated the scientific works which refer specifically to the role and implications of the psychomotric components in learning (fast acquisition) the basic technique in soccer, at the beginning. Thus, there are no teaching strategies and training programs for the newcomers that educate amid psychomotric components, to involve them in acquiring basic technique of the game.

Increased efficiency in learning the basic technique is subject to the development of motor qualities, technical, tactical, mental, and degree of training and education of psychomotric components (body scheme, laterality, overall coordination and dynamic segmentation, perceptual-motor coordination, static and dynamic balance, ambidexterity, spatial and temporal orientation, speed of movement, ideomotricity), all of which need to be tailored to the age and the particularities of the individuals.

### **Goal objectives and tasks of research**

The purpose of this work pursues the strategy aimed to psychomotricity components' education / development for specific learning techniques of soccer game for children of 8-10 years, experimental validation of global and operational projects to improve the quality of the educational process in the first training in the formative stage. It makes modern methodological guidelines aimed at providing a psychological basis - the technical training that will build the technical, physical, tactical, psychological performance later.

#### ***Research tasks:***

- Studying literature to establish the current state of knowledge on national and international basis.
- Establishing the role of psychomotricity components regarding the peculiarities of football training.
- Establishing the scientific research methodology and work plan.
- Establishing the survey regarding the approach and contribution of psychomotricity components in children' football training.
- Making the experiment prior to driving and determining the motric and psychomotric level of children aged 8-10 years, involved in football training.
- Establishing the group of subjects on which research will be done.
- Developing some teaching - learning programs of basic techniques through education / development of psychomotricity components.
- Establishing a model training program for developing psychomotricity components focusing on: coordination, balance, orientation field, precision, control, ambidexterity, etc., in learning basic techniques of playing football, features tailored to age and level of motor acquisition.
- Experimental verification on the effectiveness of operational projects and technical learning and psychomotric skills' development, integrated in the methodology of sports training in soccer at 8 -10 years.

### **Conclusions on motric and psychomotric level of children aged 8-10 years, involved in football training**

The results of the three categories of tests and samples reflect an average well below the optimal values specific to this age. In the first category of evidence, which had as the main purpose to determine the basic motric indexes, in seven of the eight samples were obtained values

of the media under the lower limit points on the scale H equivalents in International Physical Ability Test.

Standard deviation values for these samples determined results of the coefficient of variability calculated with values between 0-10% for four samples and between 10-20% for the other four samples. As following, reliability values obtained are also given by the high degree of homogeneity of the group, high degree of homogeneity for four samples, respectively average homogeneity for the other four samples. In the category of general and psychometric tests also obtained values of coefficients of variability in all samples confirms the high homogeneity and a sample average. Values obtained and reported in parts of each test sample confirmed unsatisfactory results for "Matorin Test", and for other tests and evidence, scale values ranging between 45-55% of maximum potential corresponding to this age.

Psychometric specific evidence was developed having regard to the structures of the psychometric components from the specific drivers for each of the techniques and basic elements of soccer. Statistical indicators taken into account confirmed for this category of samples feature group homogeneity.

### **Research methods**

In order to achieve goals and objectives were used the following methods of research: *bibliographic study method, method of observation, investigation method, test samples and control method, experimental methods, mathematical statistic method and graphical method.*

### **Trials and control tests used in research:**

#### **a) General motric samples (GS)**

- GS 1: Running speed 50 m.
- GS 2: Standing long jump.
- GS 3: Running resistance 600m.
- GS 4: Rounder ball throw away.
- GS 5: Hanging with his arms folded at flat bar.
- GS 6: Shuttle.
- GS 7: Sit-ups from lying in standing in 30 s.
- PG8: Coxo-femoral mobility in the anterior plan.

#### **b) General psychometric tests (GPT)**

- GPT 1: Matorin Test - overall coordination and balance.
- GPT 2: Roadmap "Boomerang" (general coordination test).
- GPT 3: Downhill squared - overall coordination.
- GPT 4: Podal side test (jumping and beating on one foot).

- GPT 5: Sample Head Piaget spatial orientation.
  - GPT 6: Segmental coordination Test (Bruininks – Oseretsky Test).
  - GPT 7: Test for assessing balance (Bruininks – Oseretsky Test)
- c) Specific psychomotric samples (SPS)
- SPS 1: Running with the ball 10 meters (linear-sprint)
  - SPS 2: Running with the ball 20 meters (return on 10 m sprint)
  - SPS 3: Running with the ball on the 30 m (bypass triangle milestone - sprint)
  - SPS 4: Hitting the ball away, the momentum of 2-3 steps, on horizontal path (deft kick - two attempts, record the best result in meters)
  - SPS 5: Driving the ball among eight stakes placed at 2 m distance between them (two tests during the best record in seconds)
  - SPS 6: Hitting the ball at the gate on foot instead (from a distance of 15 m – the ball should fall after the goal line - 6 attempts)
  - SPS 7: Dribbling (dodge) 1-1 - (best of 6 attempts)
  - SPS 8: From vole, hitting the ball with his foot in the fixed target, sitting on the gym bench, ball provided from one side (three attempts)
  - SPS 9: From vole, hitting the ball with his foot in a moving target, sitting on the gym bench, ball provided from one side (three attempts)
  - SPS 10: Keeping the ball in the air, standing, by striking it repeatedly for 30 seconds by dexterous foot
  - SPS 11: Keeping the ball in the air, standing, by striking her repeatedly for 30 seconds by awkward foot
  - SPS 12: Keeping the ball in the air, on the gym bench for 30 seconds using both legs alternatively.

### **Research subjects**

In prior research participated 12 clubs from Suceava County and the target group is represented by a total of 180 children aged between 8 and 10 years. The target group of the prior research has undergone a number of three categories of trials and general driving tests, general and specific psychomotric tests.

Experimental research subjects are represented by a sample of 36 children (18 boys belonging to the control group and 18 boys representing the experimental group). Components of the experimental group had been formed in the age group of children born between 2000-2001 from Sporting Suceava Sports Club and control group is represented by the same age group in Suceava L.P.S. C.S.S.

### **Stages of the experiment itself:**

- **Phase I (10 to 20 January 2009)** established the first phase sample target group, represented by an experimental group with a total of 18 subjects, from CS Sporting Suceava, and a control group consisting also of 18 children from Suceava C.S.S. L.P.S.
- **Phase II (20 to 22 January 2009).** In this phase took place the initial testing (T1) on three types of samples and tests: general motors, general and specific psychomotrics. Following days of 20 to 22 January 2009 a number of 36 children were tested on samples and general motor samples, general psychomotric and specific samples.
- **Phase III (22 January to 18 July 2009)** - at this stage have been developed comprehensive and operational projects that have been applied in practice with the experimental group. The two research groups are working separately, control group worked by classical method and experimental group worked training (operational projects) developed by us. Endpoints include overall project and is done through teaching strategies, aimed at educating and developing psychomotric components through a total of 120 operational projects, which were tested for 40 weeks during a workout of 70 minutes. Also in this stage is achieved annual staggering (training macro cycle) and design units of instruction (training middle cycles) on psychomotric components. Experimental group works throughout this period a total of 60 workouts.
- **Phase IV (18 to 22 July 2009)** - in this stage, intermediate testing is performed (T2), after a period of six months from initial testing at all three types of tests in terms of general driving, general and specific psychomotrics for the two groups in the experiment. The results from both groups were processed and examined inter-group and intra-group. After analyzing the intermediate results the overall project developed in phase III was optimized and the operational experimental group's projects were restructured.
- **Phase V (July 23, 2009 to February 23, 2010)** - the experimental group works a total of 60 workouts, 70 minutes each workout. At this stage, on February 23, 2010 final testing occurs (T3) in all three categories in terms of general driving tests, general and specific psychomotrics, both in the control group and the experimental. The results were processed, analyzed and interpreted and inter- and intragroup between intermediary (T2) and final testing (T3).
- **Phase VI (23 February-2 March 2010)** - at this stage, data drawn from experiments in initial (T1) and final testing (T3) is analyzed and interpreted inter- and intra-group. Experimental findings were also formulated.

### **Global Education/Development content's formulation and experimentation**

Overall project (annual or macro-cycle in sports performance) involves attending basic operations:

- identify general and specific objectives and behavior deduced from the final-year performance
- establishing and structuring learning content through units' demarcation
- establishing real time for training and organizational relationship to the level achieved in front of group and individual

In the proposed research, the global project's content was structured on the following learning units:

- own body scheme awareness education
- development/education of space-time orientation capacity
- development/education of static and dynamic balance ability
- development/education of bilateralism and ambidexterity
- development / education of the general coordination and intersegmented
- development / education of specific dynamic coordination and capacity of movements' combination (coupling)
- education of differentiated ability of muscle tension (muscle tone)
- education of voluntary and involuntary ability of attention and concentration.

The fundamental aim of the overall project is to develop / educate psychomotoric components, which entails the following endpoints (frame):

- to understand the body's own schedule;
- to know the plans of action and parts of the body;
- to synchronize the movement of body segments and the entire space;
- to acquire notions of trajectory, distance, size, position and shape;
- to acquire the skills of spatial orientation, and assessing temporary paths, directions and velocities of moving objects in relation to your body
- to achieve the maintenance of voluntary control of static and dynamic equilibrium positions;
- to be able to perform actions and motor structures in both plans of laterality using body parts of both right and left side;
- to perceive and react as quickly and effectively to visual and auditory stimuli;
- to perceive and react as quickly and effectively to stimuli that enable their movement perception (kinesthetic sense);
- be able to adjust the level of muscle tension's perception (muscle tone);

- to execute structures of driving actions combined with general coordination elements;
- to be able to combine different moves, specific in football's coordination;

The content of teaching strategy reflected in operational projects developed for experimental research.

Under the assumptions of research we have developed a number of 120 operational projects (training programs), including psychomotoric operational structures correlated with structures to acquire technics.

Operational projects containing means which have as main goal educating / developing psychomotoric components and learning elements and specific techniques of the game. Therefore we have designed workouts lasting 60-70 minutes, with operational objectives focus on education / development of psychomotoric components in which were resolved also operational objectives of the main elements and learning specific techniques of soccer, lasting 15-20 minutes.

### **Conclusions drawn from experimental work**

Analyzing data from the experiment, the proposed research, and by reference to the assumptions made, it can be said that they were mostly confirmed.

The first hypothesis, about the importance of training in the formative stages in boundary soccer and its orientation and centering on education / development of psychomotoric components to increase their availability, is confirmed by results obtained in the experiment proposed research and technical and tactical valences specific to the football game gained by the experimental group subjects is a solid base to build a high capacity in the future. Thus demonstrated the need to use the age of 8-10 years of specific media components of psychomotoric development as the foundation of learning the basic techniques of the game.

As a result, the second hypothesis was confirmed by the fact that after an analytical study of elements and techniques in terms of motric structure and an investigation applied to the coaches at this age, was identified the performance share of psychomotoric components in executing basic technical elements of the football game, and were found suitable psychomotoric indicators (body scheme, spatial and temporal orientation, static and dynamic balance, general, intersegmented and specific coordination, laterality and ambidexterity, responsiveness to auditory and visual stimuli, visual and auditory memory, muscle tone, alertness and concentration), which conditioned and facilitated education / development of psychomotoric components and effective learning

technique. As a result of the analytical study of the football game it can be confirmed the psychomotoric components' integration in different proportions in the execution of specific elements and techniques of the game.

The third hypothesis, regarding the correct combination of the "3Ms" in targeted teaching strategies and focused on operational objectives of education / development of psychomotoric components in soccer, is confirmed by obtaining significant progress in addressing effectively instructional proposed objectives in the formative stage. Using operational psychomotoric structures mainly in training for a year with a total of 120 operational projects, it was confirmed regarding the experimental group by the results in both interim and final testing, especially regarding the general psychomotoric tests and specific psychomotoric samples.

"Student" test values calculated for the two groups, experimental and control group, between initial testing (T1) and the final testing (T3) confirm that there are significant differences between the averages of the two tests,  $p < 0.01$  in all three types of tests and driving tests in terms of general, general psychomotoric and specific psychomotoric tests. Thus, at all eight samples of general driving tests the "Student" test values are calculated higher than 1.96 (value of Fischer's Board). In general psychomotoric tests and samples from six of the seven tests are values from the "Student" test calculated higher than 1.96 (value of Fischer's Board), while the specific psychomotoric samples from 10 of the 12 are values of the "Student" Test with a significance degree of  $p < 0.01$ .

### **Proposals and recommendations**

Further on, I will present some proposals and recommendations as benchmarks for coordination and technical factor at this age, regarding the technical preparedness planning strategy:

- the main variables to be considered in the training are coordinating various applications having as main objective the transformation of technical elements in automatism and correct any mistakes
- another variable is working under time pressure to determine the technical control system speed
- a variety of perceptual demands, another variable to be considered to encourage the assimilation of technical information in the context of settling movements in a game of unstable environment



- the behavior of individual technical stabilization of activities affected by the movement of other players
- the transformation of technical elements structures in automatism in driving the active and semi-active opponent

The presence of a dynamic teacher must constantly consider the relationship between training components at this age, meaning that the technical one becomes increasingly important to solve tactical problems. The main technical and tactical parts of 8-10 years of age could be:

- driving the ball to change shape, direction and pace
- driving action of the ball combined with other actions under the technical and perceptual speed applications
- driving the ball movement and adaptation in the context of combined action by moving teammates and opponents
- driving the ball and looking for free space or for the weaker part of the opposing team
- to pass from moving to fixed target
- to pass from moving to mobile target
- combining the action of passing with other forms of movement under available time and space pressure
- combining passing with other players
- the achievement of "one-two" with enveloping
- passing in different areas, with a player support and changing direction of attack
- shooting the ball to change shape, direction and pace
- shooting the ball in the context of semi-active and active action of an opponent under time pressure
- shooting at the gate with the gate keeper behind / out of the gate
- shooting at the gate with side/frontal opponent
- taking the ball with high, medium and low trajectory; targeted stops
- the dynamic action of taking the ball followed by other forms of technical actions (dribbling, driving, kicking, passing)

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**Titlu:** Aspecte metodice privind dezvoltarea capacităților coordinative la copiii de 8-10 ani prin intermediul mijloacelor specifice antrenamentului în jocul de fotbal.

**Cuvinte cheie:** capacități coordinative, fotbal, antrenament

**Rezumat:** Aptitudinile coordinative cuprind întreaga gama de posibilități de manifestare a coordonării, dar și a supleții în procesul de execuție a mișcărilor fizice. Ele sunt condiționate de capacitatea de a dirija, de a prelua și elabora abilități motrice și au la bază eficiența sistemului nervos și muscular. Se manifestă în toate mișcărilor și la toate nivelurile practicii sportive. Manifestarea aptitudinilor coordinative este condiționată de capacitatea sistemului perceptiv de a prelucra, analiza, a lua decizii și a transmite impulsurile nervoase către efectorii actelor motrice și de capacitatea de a realiza cu multă economicitate și armonie mișcărilor. Ele sunt condiționate de capacitatea de a dirija, de a prelucra informațiile provenite de la analizatorii implicați în mișcare și în elaborarea răspunsurilor motrice.

**Titre:** Stratégies visant l'éducation des composants de la psychomotricité au cours de la première étape formative en football.

**Mots clés :** stratégie, psychomotricité, football

**Résumé :** Une bonne combinaison des " 3M " dans le cadre d'une stratégie didactique axée sur des objectifs opérationnels de l'éducation et le développement de composants psychomotriques dans le jeu de football est confirmée par l'obtention de progrès significatifs dans la résolution efficace des objectifs instructionnels proposés à l'étape de la formation/ l'initiation du jeu de football. L'utilisation des structures opérationnelles principalement psychomotriques dans la formation a été confirmée, dans le groupe expérimental, par les résultats obtenus aux deux tests: mi-parcours et finale, en particulier dans les tests psychomotriques générales et les échantillons spécifiques.