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Coordination training of young 8-10-year-old football players: orientation, content, conditions

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Abstract: The article considers the substantive aspects of the coordination training of 8-10-year-old football players. ***Materials and research methods***. Achieving the goal of the research was conditioned by the use of a set of research methods (theoretical analysis of special scientific and methodological literature, the results of dissertation research works; pedagogical testing, pedagogical experiment, methods of mathematical statistics). Pedagogical research was organized on the basis of I.N. Ulyanov State Pedagogical University, Ulyanovsk, football school and football center of the National Institute of Youth and Sports (NIYS), the capital of the Republic of Mali – Bamako. 33 young athletes at the age of 8–10 took part in the pedagogical experiment. ***Results***. The research work clarified the content and direction of general and special coordination training in football at the stage of initial training; we considered pedagogical conditions for motor-coordinating qualities development, substantiated the means and methods of their development. The results of the forming pedagogical experiment prove significant increase of coordination readiness indices of the football players from the experimental group. The increasing level of coordination readiness of young football players also provided the necessary preconditions for the successful mastering of basic technical, technical-tactical actions. ***Conclusion.*** The progress of modern football is associated with the quality of the sports reserve training. It is based on motor-coordination training. The achievement by young football players the proper parameters of coordination readiness determines more effective mastering of the learned techniques, the reliability of their implementation in various game situations, in interaction with teammates and in terms of the opponent's opposition.

Keywords: football, general and special coordination training, motor-coordinating qualities, young football players, technical - tactical actions, dexterity, quickness, accuracy, balance.

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Introduction

The diversity of motor actions in football (speeding-up, falls, jumps, sudden direction of movement change, stops) demands the complex of the leading motor co-ordinations development. They provide effectiveness of technical-tactical actions with the ball both in interaction with a partner and during individual motor actions realization. Coordination qualities development is considered by native and foreign specialists as one of the most promising directions. It helps to improve the quality of teaching young football players the basic techniques, technical-tactical actions [1-4]. The results of research works of some authors prove interdependent character of coordination and technical-tactical readiness indices among football players in the structure of a long-term training process [5, 6].

Great attention should be paid both to general and special coordination training among young football players, starting from the stage of initial, training taking into account the peculiarities of psycho-age-related development of children, specific characteristics of motor functions development. This work should be realized during all stages of a long-term sports improvement of football players, taking into account the specificity of game activity, effective approaches to the leading motor co-ordinations development revelation. They condition the possibility of further individual technical improvement of a player, taking into account the advanced character or development delay of the leading motor-coordinating qualities, role.

The aim of the research: theoretical-methodical significance substantiation of coordination training in the training process of 8-10-year-old football players.

The objectives of the research:

1. To reveal the role and the importance of motor-coordination qualities of young football players at the stage of initial training.

2. To substantiate pedagogical conditions, means and methods of the stimulated development of the leading motor-coordination qualities among 8-10-year-old football players.

Materials and methods

Achieving the goal of the research was conditioned by the use of a set of research methods (theoretical analysis of special scientific and methodological literature, the results of dissertation research works; pedagogical testing, pedagogical experiment, methods of mathematical statistics). Pedagogical research was organized on the basis of "Federal State Budgetary Educational Establishment of Higher Education Ulyanovsk State Pedagogical University named after I.N. Ulyanov"; football school and football center of the National Institute of Youth and Sports (NIYS), the capital of the Republic of Mali – Bamako (since September, 2019 till June, 2020). 33 young athletes at the age of 8–10 took part in the pedagogical experiment (Malian children of different ethnic background-Bamanan, Peulkh, Songkhoi, Sarakhole, Tamashek, Senufo and others), they trained in the groups of initial sports training (the 1st-2nd year of study). All they were divided into the groups:

Experimental and control group (CG – 16 people, EG – 17 people). The lessons in control group (CG) were organized on the basis of the working program of football sports training, created by the specialists of the Ministry of Youth and Sport and National Institute of Youth and Sport. Experimental group trained according to created by us experimental methodology. The training lessons were held three times a week, the duration of the lesson was two academic hours. In the groups of respondents we organized entrance and control diagnostics of the studied indices.

Results and discussion

Necessary parameters of general and special coordination readiness achievement is one of the conditions for the effectiveness increase of the basic technical-tactical skills mastering, both at the stage of the initial training of young football players and during further sportsmanship improvement [1-4]. In the research works of A.P. Kurash (2006) it was stated that among teen-agers and children the effectiveness of actions with the ball in sports games condition three main factors: the level of sensory systems development, first of all motor sensitivity; the degree of mastering a rational structure of movements by the players during different techniques fulfillment; the level of the leading motor coordination qualities development. They define qualitative sides of actions with the ball fulfillment [1].

B.G. Chirva (2008) underlines: "…In order to handle the ball accurately football players should have a complex of skills and qualities. It can be to some degree inherited and improved by means of the training lessons" [5]. In the research works of foreign authors the importance of flexibility and coordination development in basic training of football players is mentioned; they confirm the importance of such factors of competitive activity success, as technique, coordination, balance mastering; underline the necessity to increase the reliability of purpose-oriented actions of football players as the most important condition for technical-tactical mastery formation [7, 8].

In accordance with modern concepts of sports training coordination training is divided into general and special training. General coordination training provides an athlete's arsenal of motor abilities broadening on the basis of using difficult for coordination exercises in sports training. They claim great demands on the athlete's coordination abilities and motivate him to realize further motor functions development. However, these exercises (motor actions) don't include the elements of football technique. Special coordination training includes the mastered technical skills and abilities fulfillment in specially created, difficult for coordination conditions. They claim great demands on the leading motor-coordination qualities. Taking this into consideration motor-coordination training has a conjugated character with technical-tactical training. Purposefulness and effectiveness of motor-coordination training is provided by the exercises of the integrated character. It provides effective teaching and skills of the game improvement and the leading coordination qualities development, young football players' functional readiness increase. Their absence provides the search for the means of the directed influence on the specific kinds of coordination qualities on the basis of pedagogical conditions, effective means and methods of their development revelation and substantiation. Special coordination training of young football players is considered in the aspect of the players' skill formation to coordinate the movements (bring into accord and co-ordinate) during new motor actions creation, reproduction and reconstruct coordination of movements in terms of necessity to change the parameters of the mastered action, during switching to a new action in accordance with the demands of dynamically changing conditions [6].

The level of a young football player's coordination readiness is conditioned both by natural inclinations and pedagogical mastery of a coach: his abilities, skills, knowledge of modern methodologies, the ability to motivate students to creative interaction

during the training objectives solution. The introduction into training process of football teams for children and teen-agers additional means of the leading motor-coordination qualities development is an important condition for technical-tactical mastery increase in combination with the players' functional abilities improvement. During special scientific-methodical literature, the results of dissertations study and analysis we substantiated the following pedagogical conditions. They provide motor-coordination training effectiveness of young football players [9]:

- Training process realization of 8-10 year-old football players on the basis of an integral approach, based on generally developing, special-preparatory and special exercises use with a ball and without it; outdoor games of generally developing and specialized character, relay-races. Generally developing physical exercises, broadening motor abilities of the football player beginner, provide the base of special training. Special preparatory exercises are characterized by specific for football tension, coordination, tempo and rhythm of movement (exercises of technical-tactical character, sports and outdoor games, exercises from two kinds of sport and football itself in different variants). In the training of young football players outdoor games should take 50-60% of general time. It is recommended to use them in the end of the preparatory part of the lesson, taking the beginning of the main part of the training. Outdoor games, relay-races help to preserve positive psycho-emotional atmosphere of the training lessons, provide cognitive activity preservation and steady interest in training tasks fulfillment during the main part of the lessons. Outdoor games use in the training process of football players not only provides effective teaching and skills of playing improvement, but also provides the leading coordination qualities development; the basis of game thinking and communicative skills formation, the ability to work in a team.

- Differentiated approach to the training process technological provision realization, taking into account young athletes' morpho-functional indices development, individual characteristics of nervous system typological features in connection with the dynamics of the leading motor-coordination qualities development and the formation level of technical-tactical skills. The training process planning, and especially the training loads dosage among young athletes demands taking into account their individual development. It is connected with the tendency of the training and competitive loads volume and intensity increase starting from the stage of initial training. The researchers mention that nowadays there is the range of individual differences increase in somatic development of children and teen-agers. In the training process it is necessary to take into account constitutional regularities of the growing organism, individual characteristics of physical development and heterochronism of motor qualities formation. It conditions the effectiveness of the teaching process, the quality of technical-tactical elements fulfillment in terms of specific competitive activity. Typological peculiarities of the main features of nervous system demonstration are important for success prediction in sports activity, the leading motor-coordination qualities revelation, taking into account typological characteristics of young athletes' central nervous system and for the most optimal means and methods of their development selection.

- The structure of coordination readiness revelation among young football players in prepubertal period and their development taking into account sensitive periods of motor functions development is the factor. It influences the formation of players' technical-tactical mastery basis. As the pedagogical practice, the results of many research works shows, each stage of sports training of football players conditions the complex of demands claimed on the content, structure and orientation of motor-coordination training. The structure of football players' coordination qualities has its specificity and depends on the level of sports qualification, gender, individual differences and it should be taken into account during the leading co-ordinations development. The effect of the directed training influences is conditioned by their optimal combination with the periods of maximal natural motor-coordination qualities increase. In the opinion of the leading specialists, the most favorable conditions for dexterity, speed qualities development are found in prepubertal period. Among boys at the age of 8-10 the level of nervous system development provides the opportunity to organize effective cognitive activity and realized movements regulation. Unfortunately, with "street football" disappearance, the level of motor activity decrease there is disbalance between physical development and the formed skills of coordination. Special coordination training should provide the sense of rhythm, balance development, accuracy of spatial, time, dynamic parameters of motor actions, specific dexterity in ball manipulation (in ball stop, movement, in interaction with the partners and in contradiction with the opponent).

- Variability of physical exercises use and their intensity (complicated, easier variant of the exercise fulfillment, intensity of the exercise, regimen of rest and load alternation). At the initial stage of training during the process of different exercises, tasks application, which are directed toward leading motor-coordination qualities development among young football players, it is reasonable to use the exercises with simpler structure, not high intensity,

with their gradual complication and intensity increase in terms of positive shifts in coordination readiness level. Simple in coordination exercises stimulate the activity of different analyzers, provide neuromuscular apparatus, cardiovascular system and respiratory system readiness to master more difficult exercises. During the first year of training it is reasonable to use special coordination exercises of not high and moderate level of difficulty (40-70%). They should be fulfilled in terms of physical, psychic tiredness absence, when an athlete is able to control, estimate and mange own activity. Such an approach provides purposiveness, gradualness of the leading motor co-ordinations formation and creates preconditions for their improvement at further stages of sports training.

The effect of directed training influences is conditioned by their optimal combination with the periods of maximal natural motor-coordination qualities increase. Revealed by us pedagogical conditions of the leading motor-coordination qualities development of 8-10 year-old football players help to choose means and methods of coordination qualities development during this age period, create the preconditions for more successful technical-tactical skills and abilities formation and mastering. Experimental methodology of the leading motor-coordination qualities development among young football players would correspond with optimality criteria during taking into account the specificity and structure of special coordination readiness of football players at different stages of the training process, conditioned by sensitivity of the leading motor co-ordinations development.

During means of general and special coordination training selection we took into account the interaction and interconditionality of motor-coordination qualities demonstration in motor activity. Strong connection between the separate motor co-ordinations provides the exercises use of the integrated influence. They provide interdependent character of motor-coordination qualities increase. In case of low-grade interconnections or in case of their absence, it is necessary to search for means and methods of their stimulated development taking into account the peculiarities of this coordination in a specific motor activity in this or that kind of sport. Thus, at the stage of initial training of young football players one of the main directions in physical and technical readiness level increase, in our opinion, is the method of associate leading motor-coordination qualities development use, taking into account their interconnection, sensitive periods of development and age-related characteristics of children. We selected games, exercises, relays, technical-tactical exercises in accordance with the importance of different coordination qualities in football and with the level of readiness of young football players and their progress at the training lessons.

The leading motor-coordination qualities development among young football players was realized on the basis of interaction provision between visual, proprioceptive, vestibular, sensory systems and the work of central nervous system; the mechanisms of balance improvement on the basis of vestibular analyzer receptors adaptation to external physical influences. They at regular intervals and repeatedly give an athlete's body differently directed speeding-up during the training; effective psycho-emotional state management among young football players during the training in terms of the increasing tiredness and control decrease over movements fulfillment; motivation stimulation to fulfill the exercises by means of adding new exercises into the complexes, providing the leading coordination qualities development [10].

The training process was realized taking into account the aims and objectives of the initial training stage, the level of physical and technical readiness among young football players. We also took into consideration relatively low for this age psycho-functional indices. Motor tasks were fulfilled by young football players in terms of the realized control over muscle-motor senses. At further training lessons we changed the conditions of techniques fulfillment, used the variants of contrast tasks (football players alternately fulfilled the actions with the balls of ordinary weigh and lightweight balls; the trajectory of ball flight change, visual control restriction during techniques fulfillment and others). Motor objectives were realized together with the partners in a team and in terms of opponents' opposition [3, 9, 11].

Pedagogical experiment showed that the training process realization among young 8-10 year-old football players with the attention paid to the leading motor-coordination qualities development (quickness, accuracy, balance, dexterity) provides the opportunity to increase the level of general and special coordination readiness taking into account the specificity of motor activity in football. In "Running on hoops without dribbling" and "Running on hoops with dribbling" tests, which characterize the leading motor – coordination qualities of rhythmicity, the indices validly increased in the CG by 2,2%, in the EG –13,7 ($p<0,05$). Such kind of tendency was revealed in "Running on hoops with dribbling" test. It proves valid changes in rhythmicity indices. These indices provide young athletes an opportunity to organize own motor actions rationally, taking into account proportionality of all phases of this or that technique with the ball fulfillment (intensifying, slowing down, defining the separate phases, taking into account the situation in a game).

In terms of the 8-10-year-old children psycho-age-related development peculiarities the development of the ability to dose and manage

muscle-motor senses demands special attention. In the training process of young football players from the EG great attention was paid to kinesthetic sense formation, connected with "sense of the ball" formation. In terms of training motor sensitivity in the experimental group we created the training conditions with the demands increase claimed on "sense of the ball". As the practice shows, in terms of motor sensitivity during ball dribbling it is more difficult for young football players to fulfill alternately the actions. They differ in the volume of efforts, speed and the amplitude of movements fulfillment; to handle lighter ball in comparison with the ball of an ordinary weight for this age. Thus, the use of contract tasks use in the EG (ball pass for small and big distance, movement with the ball with high and low speed; the actions fulfillment alternately with an ordinary weight balls and lightweight balls) conditioned higher indices in the EG. In the EG in "Draging up the ball with the left foot" test the index improved by 8,3% and 8,9% (left and right leg), P<0,05. In the CG-4,6% and 4,8%, (P>0,05). The ability to keep the balance in "Standing on the right leg with the ball holding on the left foot" test in the EG validly increase by 29,7 %; in CG – by 10,6% (P>0,05). The same tendency was revealed also in "Standing on the left leg with the ball holding on the right foot" test. The indices of the dynamic balance ("Turns on a gymnastic bench" test) in the EG increased till 27,3%; in CG– till 16,1% (p<0,05).

In order to estimate the ability to differentiate the parameters of movements, the accuracy of aimed movements revelation we used "Kicking the ball into the goal with the right and the left leg" test. The results of this test at the end of the experiment showed the tendency of their increase among young football players both in the CG and the EG. At the same time there are valid differences in the indices of increase among young football players in the CG and the EG (p<0,05). In order to estimate the ability to adapt and transform motor actions (dexterity) we used "Running all over the stands" and "Running with dribbling and running all over the stands" tests. In "Running all over the stands on the left side" and "Running all over the stands on the right side" tests we revealed that the increase indices among football players from the EG in the end of the pedagogical experiment were 11,09% and 11,1% (p<0,05). Among the football players from the CG we saw only positive dynamics of the increase. Such kind of tendency preserves in "Running all over the stands with dribbling" test. In order to estimate the ability to co-ordination we used "Slalom between the stands with two balls dribbling" test. In this test valid index increase in the EG was 15,7%, in the CG – 10,7% (p<0,05).

The level of general and special coordination readiness increase among young football players provided necessary preconditions for successful basic technical, technical-tactical actions mastering. Comparative analysis of the received results proves the advantage of the respondents from the EG in "Juggling the ball" test: in the average they fulfilled 46,8±7,2 kicks, which is 15,3 kicks more that the indices of the CG (P<0,05). In "Straight dribbling 30 meters (7 touch.)" exercise the index in the EG was 6,09±1,75 s, in the CG – 6,37±1,45 s (P<0,05). In "Kicking the ball with the middle of the instep for accuracy" exercise the respondents from the EG got 15,24 ±2,19 points out of 20 possible, which is 3,11 points better, than among the respondents from the CG (P<0,05).

In the volume and reliability indices of technical-tactical actions ("4x2 square" exercise) football players from the EG fulfilled 28,4 technical-tactical actions (more than the respondents from the CG). The athletes from the EG have higher indices of technical-tactical actions fulfillment reliability, than the respondents from the CG: reliability coefficient in the EG was 0,82, which is 0,08 more than the same index of the respondents from the CG (P<0,05).

Conclusion

The progress of modern football is associated with the quality of sports reserve training, the base of which forms motor-coordination training. The effectiveness of the training process among 8-10 year-old football players is provided with the realization of the revealed by us pedagogical conditions of the directed leading motor-coordination qualities development (means and methods differentiation of coordination training y\taking into account the peculiarities of psycho-age related development, sensitive periods of motor functions development among 8-10 year-old football players; taking into account the demands claimed on special-coordination readiness of young football players; the complex use of generally developing, special-preparatory and special exercises with the ball and without it, outdoor games of generally developing and specialized character, relays).

The achievement by young football players the proper parameters of coordination readiness determines more effective mastering of the learned techniques, the reliability of their implementation in various game situations, in interaction with teammates and in terms of the opponent's opposition.

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