

competence in institutions of higher education during physical education classes.

Reference

1. Voychyshyn L. (2009) Correction and prevention of posture disorders in adolescents by means of physical rehabilitation. *Young sports science of Ukraine: coll. Science. etc. in the field of physical. culture and sports.* - L.- Vip. 13, vol. 3. - P. 35-39.
2. Bubela O. (2002) 700 exercises for the formation of correct posture: teaching method. *Manual. L. : Ukrainian Technologies.* - 164 p.
3. Bublely T. (2017) Monitoring and evaluation of academic achievement of students in grades 5-9 who have abnormalities in health. *Coll. Science. works "Pedagogical Sciences".* - Issue № 3 (58). - Mykolaiv: MNU named after VO Sumkholmliisky. - P. 45-49.
4. Lysenko L. (2008) Pedagogical technologies of teaching the culture of movements of girls 10-12 years: *dissertation abstract. ... cand. ped. Science: 13.00.02. Drahomanov University.* - Kyiv. - 20 p.

DOI 10.31392/NPU-nc.series15.2023.04(163).02
УДК:796.332+796.015.134/136-053.6

Nikolaienko V. V.
Doctor of Physical Culture and Sports, Professor
National University of Ukraine on Physical Education and Sports, Kyiv
Vorobiov M. I.
Candidate of Pedagogical Sciences, Professor
National University of Ukraine on Physical Education and Sports, Kyiv

ASPECTS OF TECHNICAL AND TACTICAL TRAINING OF YOUNG FOOTBALL PLAYERS

Training of sports reserve for professional football has always attracted much attention. This is evidenced by a significant number of studies devoted to this issue, within which experts in professional children's and youth football emphasize the lack of necessary engagement in elite sport young athletes, well-prepared in terms of technical and tactical skills. One of adequate responses in the considered aspect is further improvement of efficient training of a prospective competitive sports reserve based on intensified improvement of quality of scientific and methodical support during training process. The aim of the research work is to substantiate scientific approaches to formation of a step-by-step management system within the long-term process of developing football players' technical and tactical skills. We have carried out the analysis of program documents, literature sources and practical activities of children's coaches in the process of implementing long-term training programs for young football players in leading European football academies and national federations. A number of fundamental and systemic differences between traditional and progressive approaches to arrangement of educational and training process have been shown. It has been determined that the existing "organized" football, the system of conducting children's and youth competitions, as well as pedagogical approaches to training young talents, are aimed at speeding up training process, achieving instant results, team-group form of conducting classes, which do not contribute to individual development and training of a smart player, capable of creatively approaching the solution of tactical and technical tasks. We have substantiated approaches to making changes in the practice of long-term training for young football players based on application of situational game method, which is a key point for effective training, development of individual capabilities and formation of game intelligence. A strategy for managing training process has been determined based on the introduction of a phased (gradual) system of tactical and technical training for young football players, which will further determine player's potential at professional level. We have indicated the necessity of making changes to pedagogical approaches of managing sports activities for young football players and evaluating the effectiveness of children's coaches' work.

Key words: long-term training, sportsmanship, young football players.

Николаєнко, В. В. Воробієв М. І. Аспекти техніко-тактичної підготовки юних футболістів. Фахівці професійного та дитячо-юнацького футболу підкреслюють відсутність необхідного надходження для спорту вищих досягнень, молодих, добре підготовлених у техніко-тактичному плані спортсменів. Одною з адекватних відповідей у розглянутому аспекті уявляється подальше підвищення ефективності підготовки конкурентоспроможного, в найближчій перспективі, спортивного резерву на основі інтенсифікації вдосконалення якості науково-методичного супроводу тренувального процесу. Мета роботи - обґрунтувати наукові підходи щодо формування поетапної системи управління багаторічним процесом становлення техніко-тактичної майстерності футболістів. Проведено аналіз програмних документів, літературних джерел і практичної діяльності дитячих тренерів у процесі реалізації довготривалих програм підготовки юних футболістів у провідних європейських футбольних академіях та національних федераціях. Обґрунтовано підходи до внесення змін у практику багаторічної підготовки юних футболістів на основі застосування ситуаційно-ігрового методу, який є ключовим моментом для ефективного навчання, розвитку індивідуальних можливостей і формування ігрового інтелекту. Визначено стратегію управління процесом навчання на основі упровадження поетапної (поступової) системи тактико-технічної підготовки юних футболістів, яка в подальшому визначатиме потенціал гравця на професійному рівні.

Ключові слова: багаторічна підготовка, спортивна майстерність, юні футболісти.

Statement of the problem. The relevance of issues related to sports reserve's training for further engagement in professional football has always been beyond doubt. This is evidenced by a significant number of studies devoted to this issue [2,4,8,10,11,13,19,35,41,42].

It is quite obvious that without qualified graduates of sports schools and clubs, none of the sports has a future [14].

At the same time, there are still contradictions between training and competitive activities, differences in the level of sportsmanship between domestic and foreign football players, which indicate the need for the formation of an effective system of long-term training for young athletes [12].

In particular, the issue of improving the technique of technical and tactical training for young football players [1,3,5,7,26,29,39] is among current directions of further development of football.

The aim of the work is to substantiate scientific approaches to the formation of sportsmanship among young football players.

of research include analysis of special literature resources, system analysis, method of comparison.

Research results. With the development and establishment of "organized" football, which replaced "spontaneous" football, children began to be selected, and more often recruited first from the age of 10, then from the age of 8, and now from the age of 6. The main approach to the content of training process has started (and still continues) to focus on the application of uniform exercises with an emphasis on physical training, acceleration of the training process and increasing physical load, which is due to the focus of the existing system of children's and youth competitions on "victory at any cost".

At the same time, children previously gained significant experience in the natural conditions of "street" football, which allowed each child to achieve a sufficiently high level of technical and tactical skills, but most importantly – to become a creative personality.

Football, like everything around, has its laws of development. Professional football does not arise from the scratch, it starts at football schools, and general schools as well as at the street. Previously, streets used to sow, schools used to cultivate, and professional teams used to harvest crops. However, "street football" has disappeared. Thus, a very important first link – the street – has fallen out from the system chain (street – football school – professional team).

In physiology, there is a saying, "The function forms the organ." So, the street was precisely the function that formed bright original football players.

A significant problem in the improvement of young football players' sportsmanship has become traditional system of teaching children through exercises, in there are no game tasks with an emphasis on perception and assessment of game situation from the very beginning; on the contrary, the skills that are formed are consolidated in simple situations that do not require effort to take any decisions. As a result, young football players do not sufficiently develop spatial orientation and versatility in the use of technical and tactical actions under training and competitive conditions [6,17,20,42].

Enthusiastic about the way of exercises, coaches have forgot about the game itself as the most universal tool for harmonious development of thinking and character. Football is a game. Accordingly, the lesson should be similar to a game, even if it is held without a ball. Now the lesson model is not a game, but an exercise. Hence it arises the belief that everything comes from an idea (exercise) and not from nature (play). The game as a tool for the development of abstract thinking is replaced by arithmetic. However, no matter how many technical and tactical actions (TTA) are considered, they still remain only a quantitative indicator, consequence. The reason must be found in sportsmanship, which in its turn depends on the quality of training.

As Ukrainian children's coach P. Ponomarenko [15] has wisely noted, "teaching to play only with the help of exercises is utopia. Exercise is theory, and play is practice. No matter how much you practice with the ball, you will never learn how to play." The well-known Dutch specialist R. Michels [32], who is in solidarity with the above-mentioned vision, has drawn attention to the fact that in training one should not work on what the player is unlikely to encounter on the field during the game. Training should take place in the form of a game, just like in "street" football.

An excellent approach is adopted by the Italian Football Federation, which when dealing with young football players emphasizes wide use of games and situational game tasks, which should be introduced as early as possible, without waiting for technique formation, since the latter will improve thanks to design of training process in accordance with requirements of real game [24].

It is important that coach, while teaching technique, puts the young player in such conditions in which the letter shall consciously perceive and timely evaluate the effectiveness of their actions, thereby creating a positive motivation for learning.

The next point that is worth highlighting is that technical training cannot be considered separately from tactical one [16,32,42].

Technique should provide tactics. Only in such a combination does the technique become truly game-like, because there is no other way in football.

Functionality and "situationality", as emphasized by S. D'Ottavio [22], should be the basis of learning process, there is no point in training technique, only for the sake of technique itself, if it is not connected (functionality) with content (situation) and confirmed by practical application

Regarding what has been stated above, it is necessary to provide some clarity in comprehension of "competitive activity", "technical and tactical activity" and

"tactical and technical activity" concepts.

Academician A. Leontiev [9] has developed the concept of three levels in the activity structure, which is based on the idea of the relationship between activity, action, and operation as the main correlation in activity structure. Structural levels of activity, revealing its qualitative characteristics as a process, testify to difference of activity from other life processes. The concepts of "action" and "operation" reveal difference between the internal parts that constitute the process of activity and difference between the process and its component parts, since the simple sum of actions does not give an idea of the activity as a whole.

Regarding activity as an action that is related to the satisfaction of a certain need does not correspond to the idea of activity consisting of a set of sequentially ordered actions. The second definition creates an idea not about different levels of the structure of activity, but rather about the relation between the process and its constituent parts.

In this regard, mistake of those researchers who, when analysing the competitive activity of football players, limit themselves to the study of actions and operations components, becomes clear; in particular, when in order to generalize the characteristics of the competitive activity structure, for example, the time or footage of actions in a certain intensity zone of its performance are highlighted. By adding up time or footage, one can get an idea of the amount of physical work needed during these actions. However, this will not in the least bring us closer to understanding the essence of competitive activity, because it will not allow us to consider the effectiveness of football players' actions with sufficient confidence, and even more, it will not let us know if the team will win the match, what the players feel during the game time and why they do certain actions.

In football practice, actions and operations are often not separated. So, dribbling the ball is an operation that jointly implements an action, for example, avoiding the guardian, creating a numerical advantage in a certain field area, creating free space for a partner, etc. For skilled football players, this happens simultaneously, while for a beginner, dribbling the ball itself can be an action – all attention is paid to its technical elements (operations).

Therefore, the actions of young football players with the ball in the initial stages of their training should be considered as technical or, more appropriately, as technical and tactical, although, in the following stages they might turn into tactical and technical.

As for terminology, football expert A. Takmakov [18] has expressed his opinion as well. So, technical and tactical actions are the execution of individual elements of technique in tactical combinations, while tactical and technical actions are a program of group interaction or a combination that is created by a group or team of players using any technical elements.

It is worth noting that any group or team actions consist of individual actions, and therefore, classification that provides division into actions of a player with the ball and without the ball turns to be clearer. The sportsmanship of the player's actions with the ball is determined by the level of their sportsmanship regarding technical technique in combination with the level of critical thinking development; that is, the ability of the player to apply technical skills according to the game situation and what it is even more important to solve tactical tasks before receiving the ball. As for the player's actions without the ball, it is necessary to differentiate individual, group and team tactical actions.

In the context of a long-term training process, it is necessary to make a division into types of training with the appropriate interpretation of training tools.

Thus, first of all, emphasis should be placed on the quality and effectiveness of training process aimed at individual development and training of a creative player. Secondly, it is important to conduct educational and training sessions in a playful way on a high emotional background with mandatory consideration of children's age and individual characteristics. Application of game method is the key moment for effective training, in the process of which individual capabilities are developed, game intelligence is formed, foundations of the child's technical and tactical skill are laid, which will therefore, determine player's tactical and technical potential at professional level.

As for technical and tactical (tactical and technical) training, then from a methodological point of view it is advisable to divide it into three stages. A step-by-step training system creates favourable conditions for gradual learning.

The task of the first stage is to lay a versatile base of general and special motor skills. Without a foundation consisting of excellent coordination, special movements brought to automatism, there can be no question of technical growth, because the further level of tactical and technical skills development largely depends on the level of coordination abilities development.

The task of the second stage is solved within an integrated approach. A football player must learn technique of dealing with the ball in various actions related to the game. Complex tasks are one of the steps in endless process of improvement from simple to complex.

The task of the third stage is to teach the player to effectively and efficiently apply technical techniques in extreme conditions and solve tactical tasks before receiving the ball. This form of arranging training (performance of technical techniques in extreme conditions) must be taken into account during every lesson, slightly changing only its content.

The analysis of arrangement and implementation of educational and training process in children's football clubs has showed that the content component of sports training, as well as the methodology of training young football players, remains almost unchanged.

Time has shown that at the current stage of football development, design of training process should be based on development of those motor skills that best meet the requirements of modern high-speed football [25,27,31]. The basis of such programming should be the model characteristics of a highly qualified football player [33,37].

Therefore, in order to reach the peak of sportsmanship, children should develop and improve their motor skills, relevant for an ideal (model) football player as far as possible. It should be noted that in sports, especially in football, there is no ideal and it cannot exist, as achieving ideal is the end of development, and this is impossible at all. But one thing can be mentioned for sure: trends in world football should be an important reference point for every football nation. And the one who correctly defines them and arranges training process with corresponding tasks, priorities and content at various stages of long-term training, will dominate in modern football.

The universal law of development is movement towards the least resistance. In science, this law is perceived as the law of the least energy expenditure, and in the general sense, it is the law of optimal harmonious development. At the dawn of football formation, this law was ensured by the system of "street" football, the most natural system that met the needs and desires of the child. In such conditions, primarily those who were most suited to football due to their natural abilities, to whom football was easy to play and brought true pleasure and satisfaction, used to become outstanding players.

However later, when the position of "street" football was taken by "organized" football, the idea that football is hard and

complex work with appropriate approaches to the selection of training means has gained the advantage. As a result, the enjoyment of game was replaced by monotonous work with significant volume and intensity of workloads, which young football players must "master" and implement in competitive activities. Thus, training and competitive activities began to meet these requirements more and more. It is natural that this kind of football has lost its appeal, having turned from a good, exciting game into a competition of who outruns whom and will be stronger in martial arts.

This state of affairs in domestic children's and youth football has been caused by wrongly chosen priorities and guidelines in long-term training of young football players. Nevertheless, progressive countries in terms of football have correctly and in advance determined what kind of football will be in demand in the future; thus, have changed the entire system of young talents' training, levelled the importance of sports results, especially at stages of primary training, emphasized development of children's creativity and individual abilities with a wide use of "street" football elements and performing movement tasks that are as close as possible to real game conditions [21,23,28,30,36].

On the basis of the above stated, it can be argued that the more we teach according to the old method, the more effort will be needed for retraining young people in professional football.

There is only one way out in this case: to change the strategy of sports reserve's training, to eliminate contradictions between training and competitive activities, to determine the priorities, content and technology of training taking into account the age and individual capabilities of young football players, as well as modern trends in football development [34]. It should be noted that football is the speed of decision-making, speed of implementation, speed of movement and other actions in response to rapidly changing game situations.

The practice of teaching motor skills that are not used in competitive activities should be strongly avoided. This applies not only to technique, but also to all aspects of a football player's sports training. Basically, the basic training of young people, which is disconnected from reality, is not only ineffective, but also harmful, because it does not allow young athletes to develop themselves in professional football. Psychological insecurity and stiffness in movements, lack of freedom of thought and high-speed technique of drifting the ball – these are all the characteristics relevant to young football players. With such psychological and technical and tactical "baggage", the player, even if he quickly makes the right decision, needs to show a high level of executive skill, but this is precisely the problem. Therefore, a football player, as a rule, follows the path of least resistance, makes the simplest decisions that are easily predicted by opponent. In the end, what comes out is not what the football player intended, but what he can do. One can think of anything, but it is possible to actually implement in the game only those actions which personal football player's skill allows. In most cases, it comes down to good ball juggling skills, circling the chips, not the opponent, a fairly high technique of hitting a stationary ball or a slowly rolling ball, as well as receiving the ball in a static position or at average movement speed. It would seem that there is nothing wrong with this. However, if we examine this problem more deeply, it really turns out that a large number of poorly mastered or unnecessary technical techniques only hinder the football player during game with their unconscious manifestation. Actually, there is a scientific explanation for this.

Traditional systems of athlete's training are based on the fact that body will build itself, what is needed is to just perform necessary motor tasks correctly. Until now, the majority of scientific works devoted to football are based on this outdated and half-hearted view of the athlete as a soulless biological entity.

A football player's training is primarily a process aimed at forming mental programs for managing one's body. Thus, only programs, which certain athlete learns, guide their actions. Therefore, all the training process programming should be based on fundamental premise of priority of psyche as controlling source of absolutely all practical human activity (Siechenov I., 1863; Vvedenskiy M., 1950; Pavlov I., 1954; Ukhtomskiy O., Uznadze D. 1966; and etc.).

It is necessary to understand the simple truth that things first happen in a person's head, it all begins there, while body only demonstrates the processes that occur in a person's brain, on a physical level. Human body without the control of the brain in its movements is not independent at all, and if the brain does not make any decision, then the body will not move as well. Therefore, it is not the body that needs to be taught, but the brain that controls the body, because in the process of learning new information programs are introduced into the general information structure of a person. It is wrong to assume that players will play better if their lung volume increases, or that they will play better with their head if their leg muscles increase in strength. In order to teach how to play football at a good level, it is not necessary to simplify football to the level of motor activity, but it is necessary to focus on solving motor tasks in the process of playing football. Thus, success in learning will be determined by the amount and quality of necessary information on managing body, which the student has learned.

The human psyche is arranged in such a way that everything that happens to a person remains in the depths of memory (subconscious). Even if an event or any action has happened to a person only once, it still remains with a person forever even if the person does not remember anything about it.

Any motor action of a person is based on information stored in the memory and consists of small movements that make up one large or one small motor act, based on instantaneous, and in football, "on-spot" needs. Any motor acts of a person can become automatic and be removed from memory consciously or appear by itself in response to some learned or unconsciously created trigger stimulus. A trigger stimulus is an internal signal that triggers certain human actions in response to surrounding environment. It can be conscious or unconscious, that is, automatic. It is in this unconscious manifestation that the whole problem of poorly learned and, most importantly, unnecessary actions lies, when starting stimulus activates those motor skills that, by their structure (biomechanics), are not suitable for successful actions in a certain game situation. Since training process improves many technical skills that are of little use in modern football, but are well mastered, then, naturally, the starting stimulus selects and activates exactly them.

Hence, a seemingly paradoxical conclusion can be drawn: in order to improve the sportsmanship of young football players, it is necessary not to reduce the training time for technical training, but to significantly reduce the variety of technical techniques being studied, and to completely exclude those technical actions that are not suitable for modern high-speed football.

This especially applies to technical techniques that are performed in a static position. It should be clearly understood that ability to perform any technical technique in static does not automatically transfer to its performance in motion. The same technical technique, which is performed in static and in motion, is different motor actions with different biomechanics of their execution. Therefore, naturally, in the training process, they should be considered as two different technical techniques, where priority should be given to actions in motion.

Meanwhile, it is worth noting another important fact: even the same technical technique, which is used at low speed, will not be performed the same well at maximum speed. Thus, such a motor skill will be considered well mastered only when a football player can perform it stably and correctly at any speed up to the maximum, which, together with the speed of tactical thinking, will determine high playing level of a football player.

Based on this, the priority direction in technical training of young football players should be performance of specialized movement tasks that meet the requirements of competitive activity of chosen sport, namely at high speed and in conditions of active confrontation, lack of time and limited space [16,38,40].

Conclusions. Thus, in order to increase the tactical and technical sportsmanship of young football players, first of all, the significance of sports result should be levelled, especially at the initial stages of training, for the sake of prioritizing training process over competitive component. Secondly, it is necessary to emphasize the quality and efficiency of training process aimed at individual development and training of a creative player. Thirdly, it is worth conducting educational and training sessions in a game form on a high emotional background with mandatory consideration of children's age and individual characteristics. Fourthly, it is important to introduce a phased

(gradual) system of tactical and technical training of young football players. Implementation of these approaches in the practice of long-term training for football players will increase the level of players' sportsmanship, which will further determine their potential at professional level.

References

1. Al Rubaje, N.H.A. (2016). Metodika tehničkoj podgotovki futbolistov na osnove razvitiya sposobnosti k differencirovaniyu myshechnyh usilij. Dis. ... kand. ped. nauk. M.: Ivanovskij gosudarstvennyj universitet.
2. Antipov, A. V. (2021). Sistema mnogoletnej podgotovki sportivnogo rezerva v futbolnyh akademiayah: Dis. ... d-ra ped. nauk. Mytishi, Moskovskij gosudarstvennyj oblastnoj universitet.
3. Afonshin, V. E. (2018). Obuchenie yunyh futbolistov tehnike vedeniya myacha i obvodki s primeneniem interaktivnogo trenazhernogo kompleksa. Dis. ... kand. ped. Nauk. Kazan, Povolzhskaya gosudarstvennaya akademiya fizicheskoy kultury, sporta i turizma.
4. Varyushin, V. V. (2007). Treirovka yunyh futbolistov. M.: Fizicheskaya kultura i sport.
5. Ivanov, N. V. (2018). Tehniko-takticheskaya podgotovka yunyh futbolistov s uchetom osobennostej igry v formate 9h9. Dis. ... kand. ped. nauk. M.: Moskovskaya gosudarstvennaya akademiya fizicheskoy kultury.
6. Komkov, V.Y., Blinov, V. A. (2019). Obuchenie cherez igru kak osnovnoj princip podgotovki futbolistov v vozraste 12-13 let. Pedagogicheskij IMIDZh. 2019. 13. 2 (43). 39-51. DOI: 10.32343/2409-5052-2019-13-2-39-51.
7. Komkov, V. Y. (2021). Sovershenstvovanie gruppovyh takticheskikh dejstvij futbolistov 13-14 let v atake na osnove strukturizacii dinamičeskikh situacij igry. Diss. ... kand. nauk. Krasnoyarsk, Krasnoyarskij gosudarstvennyj pedagogicheskij universitet im. V.P. Astafeva.
8. Kubekov, E. A. (2018). Sistema podgotovki yunyh futbolistov: istoriya, praktika, problemy. Problemy sovremennogo pedagogicheskogo obrazovaniya. 61. 179-181. <https://cyberleninka.ru/article/n/sistema-podgotovki-yunyh-futbolistov-istoriya-praktika-problemy>.
9. Leontev, A. N. (2012). Deyatel'nost. Soznanie. Lichnost. Moskva: Kniga po Trebovaniyu.
10. Monakov, G. V. (2007). Podgotovka futbolistov. M.: Sovetskij sport.
11. Nikolayenko, V. V. (2014). Organizacijno-metodichni aspekti udoskonalennya sistemi pidgotovki sportivnogo rezervu dlya profesijnogo futbolu. Nauk. -ped. problemi fiz kulturi (fizichna kultura ta sport): zb. nauk. pr. 11 (52) 14. 98-112. URI: <http://enpuir.npu.edu.ua/handle/123456789/8516>.
12. Nikolaenko, V. V. (2014). Konceptualnye podhody k razresheniyu protivorechiya mezhdru trenirovočnoj i sorevnovatelnoj deyatel'nostyu v detsko-yunosheskom futbole. Nauk.-ped. problemi fiz kulturi (Fizichna kultura i sport): zb. nauk. pr. 4 (47) 14. 104-116. URI: <http://enpuir.npu.edu.ua/handle/123456789/13264>.
13. Nikolayenko, V. V. (2015). koncepciya planomirnoy pidgotovki sportivnogo rezervu dlya profesijnogo futbolu. Teoriya ta metodika fizichnogo viovannya ta sportu. 2. 9-16. DOI: <https://doi.org/10.32652/tmfvs.2015.2.9-15>.
14. Platonov, V. N. (2015). Sistema podgotovki v olimpijskom sporte. Obshaya teoriya i eyo prakticheskie prilozheniya. Kiev, Olimpijskaya literatura.
15. Ponomarenko, P. A. (1994). Uchis videt pole. Doneck, RIP Lebed.
16. Ponomarenko, P. A. (2005). Nyneshnim metodikam uzhe let 50. Futbol-Profi. 10-15. <https://www.dokaball.com/trenirovki1/trenerskaya/501-p-a-ponomarenko-nyneshnim-metodikam-uzhe-let-50>.
17. Terenteva, O. S., Deryabina, G. I., Lerner, V. L. (2022). Kognitivnyj komponent v sportivnoj trenirovke detej, zanimayushihysya igrovymi vidami sporta. Teoriya i praktika fizicheskoy kultury. 6. 26-29. DOI: 10.24411/1991-5497-2020-00221.
18. Takmakov, A. V. (2009). Matrica futbola. Krasnodar, OOO Kasp-plyus.
19. Shamardin, V. M. (2013). Tehnologiya upravlinnya sistemoyu bagatorichnoy pidgotovki futbolnih komand najvishoyi kvalifikaciji: avtoref. dis. na zdobuttya nauk. stupenya doktora nauk z fiz. viovannya ta sportu: Lviv.
20. Shvaleva, T. A., Kuznecova, Zh. V., Ermohin, A.V. (2020). Tehniko-takticheskaya podgotovka yunyh futbolistov na osnove igrovyh zadaniy. Mir nauki, kultury, obrazovaniya. 2 (81). 105-108. DOI: 10.24411/1991-5497-2020-00221.
21. Browaeys, B. (2010). The Philosophy of youth development at the Belgian FA. UEFA STUDY GROUP.

22. D'Ottavio, S. (2011). L'apprendimento della tecnica calcistica: come rendere funzionale l'insegnamento. Scuola dello Sport. 91. 49-57. URL: <https://www.bisp-surf.de/Record/PU201203001924/Solr>.
23. Fussball ist Zukunft: Konzeption des DFB-Fußballentwicklungsplans (2007). Munster: Philippka-Sportverlag.
24. Guida tecnica per le scuole di calcio (2008). Federazione Italiana Giuoco Calcio. Roma: Settore Giovanile e Scolastico.
25. Haugen, T. (2014). The role and development of sprinting speed in soccer. Doctoral thesis. University of Agder.
26. Hintermann, M., Born, D-P., Fuchslocher, J., et al., (2021). How to improve technical and tactical actions of dominant and non-dominant players in children's football? PLoS ONE. 22. 16(7). DOI: 10.1371/journal.pone.0254900.
27. Hostrup, M., Bangsbo, J. (2022). Performance Adaptations to Intensified Training in Top-Level Football. Sports Medicine. DOI: 10.1007/s40279-022-01791-z.
28. Hyballa, P. (2011). Mythos niederländischer Nachwuchsfußball. Aachen: Meyer&Meyer.
29. Kadirov, Sh. N. M., (2021). Features of technical and tactical training of young football players. Scientific progress. 2.(7). 1056-1060.
30. Krasnoff, L. S. (2012). Spain v. France: Blueprints for Developing Soccer Talent? Fairfax: George Mason University: The Center for the Study of Sport and Leisure in Society.
31. Marín, K., Castellano, J. (2022). High-speed running distance and frequency in football training: When and how are they stimulated in a microcycle? International Journal of Sports Science & Coaching. DOI: 10.1177/17479541221107982.
32. Michels, R. (2013). Team building the road to success. Reedswoain.
33. Nassis, G. P., Massey, A., Jacobsen, P., et al. (2020). Elite football of 2030 will not be the same as that of 2020: Preparing players, coaches, and support staff for the evolution. Scandinavian Journal of Medicine and Science in Sports. 30(6). 962-964. DOI: 10.1111/cmc.13681.
34. Nikolaienko, V., Vorobiov, M., Chopilko, T., et al. (2021). Aspects of increasing efficiency of young football player's physical training process. Sport Mont. 19. 3-9. DOI: 10.26773/smj.210909.
35. Nikolaienko, V., Maksymchuk, B., Donets, I., et al. (2021). Cycles of training sessions and competitions of youth football players. Revista Românească pentru Educație Multidimensională. 13(2). 423-441. DOI: 10.18662/rrem/13.2/429.
36. Nikolaienko, V., Prots, R., Romanenko, V., et al. (2022). The Characteristics of Building Long-Term Training Systems for Footballers in Foreign Countries. Revista Romaneasca Pentru Educatie Multidimensionala. 14(2). 268-283. DOI: 10.18662/rrem/14.2/580.
37. Pertsukhov, A. (2021). Model characteristics of leading football players of different positions. Slobozhanskyi Herald of Science and Sport. 1(81). 47-58. DOI: 10.15391/snsv.2021-1.007.
38. Schomann, P., Bode, G. Vieth, N. (2020). Kinderfußball: Ausbilden mit Konzept 1. Munster.
39. Umarov, A. A., Komron, R. K. (2020). Methods of Increasing Technical Training of Young Players. Methods of Increasing Technical Training of Young Players. 7(10). 152-154. <https://repo.ijert.org/index.php/ijert/article/view/115>.
40. Van Lingen, B. (2016). The Official Guide to Coaching Youth Football. World Football Academy.
41. Wein, H. (2004). Futbol a la medida del nino. Gradagymnos.
42. Wein, H. (2014). Spielintelligenz im Fußball – Kindgemäß trainieren. Aachen: Meyer&Meyer.

DOI 10.31392/NPU-nc.series15.2023.04(163).03

Serhii Sovenko
Ph.D. in Physical Education and Sport;
Assistant Professor of the Department of Track and Field,
Winter Sports Events and Cycling of the National University
of Physical Education and Sport of Ukraine, Kiev

THE TECHNIQUE OF ELITE ATHLETES SPECIALIZED IN 50 KM RACE WALK

Purpose: to reveal trends of changing the technique of highly skilled 50 km race walkers along with the increase of sports results based on biomechanical characteristics analysis. Material and methods. Technique biomechanical analysis data of the best world and Ukrainian athletes, obtained in the course of studies at 2015–2018 national race walk championships in 50 km and 35 km distances are presented. Biomechanical characteristics of 22 highly skilled athletes (14 males and 8 females) specialized in 50 km race walk (total number of sports results 30) have been determined and analyzed. Results. Improvement of sports result in the men's 50 km race walk to the world best level occurs mainly at the expense of stride length increase 1.10 m ($p < 0.05$). Result improvement to the world level from 4:10:00 ($S = 0:07:50$) to 3:56:27 ($S = 0:02:08$) mainly occurs at the expense of stride frequency increase to 3.32 stride·s⁻¹ ($S = 0.10$) at statistically significant differences with indices of the national level athletes ($p < 0.01$). It has been revealed that in females of the high national level specialized in 50 km race walk (results close to 4:31:37), the indices of stride length and frequency constitute 0.95 m ($S = 0.02$) and 3.22 stride·s⁻¹ ($S = 0.12$), respectively. Conclusions. Comparative analysis of race walk technique kinematic characteristics of athletes of different skill levels specialized in 50 km race walk has been conducted. Prospects and directions for improving sports results of potential national team members have been revealed on the basis of comparison with the indices of national team members and elite athletes. A sharp improvement of sports results of female athletes in 50 km race walk during the last few years is noteworthy. It was due to this discipline inclusion in the program of Track