



METHODOLOGY FOR DEVELOPING TECHNICAL MOVEMENTS OF YOUNG FOOTBALL PLAYERS BASED ON KINEMATIC INDICATORS

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Abstract: The methodology for the development of technical actions of young players on the basis of kinematic indicators consists of complex processes that require comprehensive thinking and regular work. In order to succeed in the game of football, it is necessary not only to have physical strength and endurance, but also to perform actions in an optimal way, that is, technical skill is also at the highest level. From this point of view, kinematics – an approach based on the science of studying the character, methods and parameters of actions-makes it possible to further study and analyze the technical actions of players. This methodology provides the basis for the effective execution of actions in young players, helps to identify and eliminate their individual mistakes, and serves to develop training aimed at improving technical performance.

Keywords: players, technique, kinematic analysis, methods, movements, parameters, analysis, individual movements, kinematic graphs.

The perfection of technical movements is one of the main criteria that distinguish a player from his opponent. These moves include running, ball control, kicking, beautiful dribbling and other football elements. Each movement has its own kinematic features, the correct execution of which significantly increases the player's playing efficiency. Through kinematic analysis, the spatial position, time, speed, angles and other measurements of each movement are determined. This sets the stage for a qualitative analysis of the technical actions of the players. The methodology uses modern technologies for collecting kinematic data, in particular, recording motion in 3D using infrared cameras, using inertial measurement unit sensors. With these equipment, the actions of young players are recorded in stages and their individual action profiles are compiled. Accuracy, speed and other indicators of movements are analyzed and individual recommendations are made to improve the technical ability of each player. Thus, each young athlete will be able to identify his technical defects and correct them. Dealing with kinematic indicators allows not only to reveal the shortcomings of the technique, but also to create an optimal mechanism for actions. This process takes into account indicators such as the naturalness of movements, energy consumption and the use of effective force. For example, when kicking a ball with a foot, the movement trajectory and speed of the foot, the consistency of this movement with force, are researched. At the same time, the position of the head and body when taking the ball with the head, the force of the blow is also one of the main elements in kinematic analysis. These studies serve to make young players technically competitive and diverse.[1]

The development of technical movements is also largely influenced by the state of the musculoskeletal system of young players. Therefore, in the methodology, it is necessary to take into account not only the appearance and speed of movements, but also how to control the muscles, their effect on movement and the activity of subcutaneous tissue. This is also an important aspect of kinematic analysis, which helps to prepare young players not only technically, but also in terms of the physical condition of the body. In the methodology for the development of technical actions of young players, training sessions are organized in stages. Initially, complex action elements are taught in a simple and separate form, and later integration of them into the game



setting is achieved. For example, the dribbling movement consists in three stages – the development of the skills of controlling the ball with the foot, running and cheating the opponent, not losing control over the ball. Each stage is checked on the basis of kinematic indicators and the necessary adjustments are made. This approach increases young players' readiness to apply the technique in practice.[2]

Trainers should convey the results of kinematic analysis to athletes in a simple and understandable way in achieving the main goals of the methodology. This helps players to independently analyze their actions, repeating the learned technical elements in training over and over again. The use of videotapes and cinematic graphics in the training process leads young players to consolidate knowledge of movements and thus increase their technical abilities. The methodology pays special attention to the use of technical movements in a game setting. It is very important to recreate the actions learned in an artificial environment in real-world game situations, since the circumstances in the game change rapidly, while the player must constantly adapt. Therefore, training based on the results of kinematic analysis should develop not only technical accuracy, but also speed and decision-making ability. This process will adequately prepare young players for professional football.[3]

Another important aspect is the organization of the training process, taking into account the individual characteristics of young players. The physiological and psychological state of each player, the natural mechanics of actions are unique. With the help of kinematic indicators, their individual action profiles are drawn, and on this basis, personal programs of training are developed. This serves to maximize the player's chances. During the methodology, young players also develop selection skills. Based on the results of kinematics, they learn in what way and when it is better to perform the movement. For example, when hitting, one can understand at what angle it is more effective to move the foot, by practically testing how to influence the ball on the tip. This allows players to enrich their technical means. Another aspect of the methodology is also to ensure a balance between physical fitness and technique. With the help of kinematic indicators, the mechanism of proper muscle work is analyzed to increase the efficiency of movements. This applies strength and endurance not only to large muscle groups, but also to small stabilizers and coordination processes. In this way, young players learn to fully control movements.[4]

With the help of technology, the ability to automatically collect and analyze the indicators of players on technology significantly speeds up the development of young athletes. For example, smartwatches, custom touch vests, motion capture systems via cameras deliver fast and accurate data to trainers. This makes it possible to revise training plans in a timely and qualitative way for each player. The success of the methodology for the development of technical actions of young players largely depends on the qualifications of coaches, their knowledge and skills in the application of modern methods as well. It is necessary that the trainers correctly interpret the results of the kinematic analysis and adjust the training accordingly. At the same time, the fact that they give athletes constant motivation, are in favor of repetition and improvement of movements is the most important part of the methodology. The long-term effect of the methodology consists in the fact that along with the rise of the technical actions of the players, their decision-making speed in the game, the field of view and the overall game culture are also significantly improved. The study of kinematic indicators brings young athletes closer to making their efforts more effective, and they form the necessary skills to play at a higher professional level in the future.[5]

Conclusion:

Thus, the development of the technical actions of young players on the basis of kinematic indicators serves not only to perfect the technique, but also to increase their stability and competitiveness in the sport. Training and analysis developed on the basis of this methodology not only physically prepares players, but also helps



them to understand all aspects of the game more deeply. For future generations of players, this approach should be considered as an effective tool that will bring football skills to a new level.

References:

1. Haugen, T. A., Tønnessen, E., Hisdal, J., & Seiler, S. (2014). The role and development of sprinting speed in soccer. *International Journal of Sports Physiology and Performance*, 9(3), 432-441.
2. Zhang, Y., & Wang, B. (2022). Kinematic analysis of lower extremity movement techniques in soccer training. *Revista Brasileira de Medicina do Esporte*, 29, e2022_0254.
3. Tunçel, A., Harbili, E., & Arıtan, S. (2019). Futbolda Penaltı Vuruşunun Kinematiği: Kaleci ve Hedef Faktörünün Etkisi. *Spor Bilimleri Dergisi*, 30(1), 25-38.
4. Еримбетов, Б. К. (2022). ИЛМИЙ-МЕТОДИК ТАЪМИНЛАШ ИШЛАРИНИ РИВОЖЛАНТИРИШ. *Fan-Sportga*, (8), 68-70.
5. Еримбетов, Б. К. (2017). ОСОБЕННОСТИ ОРГАНИЗАЦИИ СКОРОСТНО-СИЛОВЫХ ТРЕНИРОВОК.
6. Tajibaev, S., Loosemore, M., Ismoilov, G., Yusupova, N., Abdukhamidov, R., Nabiev, S., ... & Kakhkhorjonov, A. (2024). The design of a striking dummy and the theoretical foundations of martial arts strikes. *Acta of Bioengineering & Biomechanics*, 26(3).
7. Тажибаев, С. С., Сайдкулов, З. В., Зияев, Ф. Ч., Мирзатиллаев, И. И., & Казоқов, Р. Т. (2024). 13-14 ЁШЛИ ФУТБОЛЧИЛАРНИНГ ТЕХНИК-ТАКТИК ҲАРАКАТЛАРИНИ ТАРБИЯЛАШ САМАРАДОРЛИГИ. *Modern Science and Research*, 3(6).
8. Тажибаев, С. С., Хўжамкелдиев, Ғ. С., Ақмонов, Б. О., Каримов, Ф. М., & Казоқов, Р. Т. (2024). жаҳон чемпионати 2022 йилги футболчилар антропометрик ўлчамлари ва тезлик сифати орасидаги корреляцияни ўрганиш. *modern science and research*, 3(6).
9. Сейтмуратов, Т. Ш. (2017). ИСТОКИ СТАНОВЛЕНИЕ И РАЗВИТИЯ ФУТБОЛА В КАРАКАЛПАКСТАНЕ. *Теория и практика современной науки*, (6 (24)), 761-764.
10. Сейтмуратов, Т. Ш. (2019). Каракалпакские подвижные игры в воспитании здорового образа жизни молодежи. *Теория и практика современной науки*, (6 (48)), 443-445.
11. Сейтмуратов, Т. Ш. (2024). ВЛИЯНИЕ ПРИРОДНО-КЛИМАТИЧЕСКИХ ФАКТОРОВ НА ФИЗИЧЕСКОЕ РАЗВИТИЕ, ДВИГАТЕЛЬНУЮ АКТИВНОСТЬ И ФИЗИЧЕСКОЕ СОСТОЯНИЕ ЧЕЛОВЕКА. *Экономика и социум*, (1 (116)), 1327-1331.