ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

Original Scientific Article DOI: 10.15391/snsv.2026-2.02

Tactical models of team play and their impact on the indicators of technical and tactical interaction of 16-year-old football players in different areas of the field

Pavlo Perepelytsia[1ABCD], Viacheslav Mulyk [1BCD], Volodymyr Prykhodko[2BCD], Volodymyr Perevoznyk[1ACD], Sviatoslav Koval[1BCE], Sergey Lebedev[1BCE]

[1]Kharkiv State Academy of Physical Culture, Kharkiv, Ukraine
[2]Educational and Scientific Institute "Prydniprovsk State Academy of Physical Culture and Sports" of the Ukrainian State University of Science and Technology

Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection.

Corresponding Author: Pavlo Perepelytsia pepp0435@gmail.com

Abstract

Background and Study Aim. Youth football is characterized by constant movement and intensity, which increases the demands on physical fitness. However, this physical fitness must be tactically conditioned - players must be able to effectively perform their tactical roles throughout the match. The purpose of this study is to analyze and establish the effectiveness of the use of experimental approaches to technical and tactical training of football players at the stage of specialized basic training.

Material and methods. The study involved 30 football players (16 years old), who are students of the Metalist-1925 football academy (Kharkiv). In order to ensure the equivalence of initial conditions, the participants were divided into control and experimental groups based on comparable indicators of their physical and technical fitness. For eight months, both groups used an identical weekly microcycle consisting of six training sessions. The experimental group additionally used tactical models of team play aimed at optimizing the quality of game performance indicators, in particular: accuracy of passes in the defense, midfield and attack zones. In contrast, the control group used exclusively technical and tactical exercises in accordance with the curriculum recommended by the Ministry of Youth and Sports of Ukraine. The assessment of the dynamics of changes in game performance indicators in both groups was carried out based on the analysis of data obtained during control matches.

Results. The use of innovative team game models in the experimental group led to a significant increase in game activity indicators. This increase occurred due to an increase in the accuracy of passes to partners in all three zones of the field: in the defense zone, middle zone and attack zone - ($p<0.001$). The results obtained demonstrate a steady trend of improving the game activity of football players in the experimental group compared to the control group, where such tactical models were not used for 8 months. The study proved that experimental tactical models have a positive effect on the quality of team interactions, which is achieved through the implementation of the "rational tactical actions" model, which involves players memorizing algorithms for interacting with partners in accordance with their game role and the general team scheme.

Conclusions. Tactical models of team play can be considered a highly effective type of small training games for improving the technical and tactical activities of football players.
1. High game specificity. Unlike traditional exercises, tactical models (when players perform actions in accordance with the tasks of the team scheme) simulate real game situations. This allows players to develop technical skills (passing, control, shots) under the pressure of time, space and the opponent, which is critical for football.
2. Comprehensive technical and tactical development. Small training games built on tactical models:
- Stimulate players to perform technical techniques (accurate passes, beating) with a tactical goal (getting out of pressure, creating a scoring opportunity).
- Require constant decision-making regarding movement, positioning, choosing the direction of attack or defense, which directly works out the algorithms of interactions in the team scheme.
3. Increased game activity. Typically, small training games have a higher intensity and density of action compared to a full-size match. This contributes to:
- More frequent contact with the ball (better demonstration of technique).

© 2026 The Author(s)

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution 4.0 International (CC BY) License (https://creativecommons.org/licenses/by/4.0/)

- More accelerations and changes of direction (better physical development, especially speed-strength endurance).
- Better understanding of space and positional requirements.
The findings of our study confirm that such tactical models significantly increase the accuracy of passes and overall game activity in key areas of the playing field, which is a direct reflection of improved technical and tactical readiness.

Keywords: training process, game situation, decision-making, variability of actions, spatial orientation, tactical models.

Анотація

Тактичні моделі командної гри та їх вплив на показники техніко-тактичної взаємодії 16-річних футболістів на різних ділянках поля

Передумови та мета дослідження. Юнацький футбол характеризується постійним рухом та інтенсивністю, що підвищує вимоги до фізичної підготовленості. Однак, ця фізична готовність має бути тактично обумовлена — гравці повинні мати змогу ефективно виконувати свої тактичні ролі протягом усього матчу. Мета цього дослідження – проаналізувати та встановити ефективність застосування експериментальних підходів до техніко-тактичного тренування футболістів на етапі спеціалізованої базової підготовки.

Матеріал і методи. У дослідженні взяли участь 30 футболістів (16-річного віку), які є вихованцями футбольної академії «Металіст–1925» (м. Харків). З метою забезпечення рівнозначності початкових умов, учасників було розподілено на контрольну та експериментальну групи на основі зіставних показників їхньої фізичної та технічної підготовленості. Протягом восьми місяців обидві групи застосовували ідентичний тижневий мікроцикл, що складався з шести тренувальних занять. Експериментальна група додатково використовувала тактичні моделі командної гри, спрямовані на оптимізацію якості показників ігрової діяльності, зокрема: точність передач у зонах захисту, півзахисту та атаки. Натомість, контрольна група використовувала виключно вправи техніко-тактичної спрямованості згідно з навчальною програмою, рекомендованою Міністерством молоді та спорту України. Оцінка динаміки змін показників ігрової діяльності в обох групах здійснювалася на основі аналізу даних, отриманих під час контрольних матчів.

Результати. Застосування інноваційних моделей командної гри в експериментальній групі призвело до достовірного підвищення показників ігрової активності. Це зростання відбулося за рахунок збільшення точності передач партнерам у всіх трьох зонах поля: у зоні захисту, середній зоні та зоні атаки - ($p<0.001$). Отримані результати демонструють стійку тенденцію покращення ігрової активності футболістів експериментальної групи порівняно з контрольною групою, де такі тактичні моделі протягом 8 місяців не використовувались. Проведене дослідження довело, що експериментальні тактичні моделі позитивно впливають на якість командних взаємодій, що досягається завдяки впровадженню моделі "раціональних тактичних дій", яка передбачає запам'ятовування гравцями алгоритмів взаємодії з партнерами відповідно до їхнього ігрового амплуа та загальної командної схеми.

Висновки. Тактичні моделі командної гри можна вважати високоефективним різновидом малих тренувальних ігор для вдосконалення техніко-тактичної діяльності футболістів.
1. Висока ігрова специфічність. На відміну від традиційних вправ, тактичні моделі (коли гравці виконують дії відповідно до завдань командної схеми) імітують реальні ігрові ситуації. Що дозволяє гравцям розвивати технічні навички (передачі, контроль, удари) під тиском часу, простору та суперника, що є критичним для футболу.
2. Комплексний техніко-тактичний розвиток. Малі тренувальні ігри, побудовані на тактичних моделях:
- стимулюють гравців виконувати технічні прийоми (точні передачі, обіграш) із тактичною метою (вихід із пресингу, створення гольового моменту);
- вимагають постійного прийняття рішень щодо руху, позиціонування, вибору напрямку атаки чи захисту, що безпосередньо відпрацьовує алгоритми взаємодій у командній схемі.
3. Збільшення ігрової активності. Зазвичай малі тренувальні ігри мають вищу інтенсивність та щільність дій порівняно з повноформатним матчем. Це сприяє:
- частішому контакту з м'ячем (кращий прояв техніки).
- більшій кількості прискорень та змін напрямку (кращий фізичний розвиток, особливо швидкісно-силової витривалості).
- кращому розумінню простору та позиційних вимог.
Висновки нашого дослідження підтверджують, що такі тактичні моделі достовірно підвищують показники точності передач та загальної ігрової активності у ключових зонах ігрового поля, що є прямим відображенням

© 2026 Perepelytsia et al.

покращення техніко-тактичної підготовленості.

Ключові слова: дискримінантний аналіз, індекс виконання, спортивна успішність, тест спеціальної фізичної підготовленості з дзюдо (SJFT), боротьба.

Introduction

Effective modeling of team interaction between players is a critical factor on which the effectiveness of tactical combinations during a match depends. Simulation allows coaches and players to repeatedly practice (simulate) certain game situations and tactical combinations (e.g., corner kicks, free kicks, fast counterattacks) without directly playing against an opponent [1, 2, 3].

Each tactical combination requires precise synchronization of the movements of several players: someone distracts, someone passes, someone opens up for a shot. Effective modeling helps to combine these individual actions into a single, coordinated mechanism.

Simulation helps players make quick and correct decisions in high-pressure conditions, since they are already familiar with the optimal options for actions in similar situations. This turns "thoughts" into "reflexes" [4, 5, 6].

Each player clearly understands his role, position, and expected actions of other teammates in a specific combination. Thus, simulation is a rehearsal of how a football team will perform tactical combinations during a match, which significantly increases the chances of success [7, 8, 9].

The ability of a football coach to simulate and modify the tactical scheme of conducting a team game is one of the key competencies that determines his professionalism and the success of the team.

This concept encompasses several key interrelated components of a coach's professional activity [10, 11, 12, 13]:

- Modeling. This is the process of developing a basic, starting tactical scheme (e.g., 4-3-3, 4-4-2, 3-5-2) and detailing the roles of the players.
- Philosophy of the game. The desired style (ball control, high pressing, defensive play).
- Analysis of opponents. Choosing a scheme that best exploits the weaknesses of future opponents.
- Modification. This is the ability to adapt the basic scheme depending on the game situation, the course of the match, or a specific opponent.
- Pre-match modifications. Changing the scheme specifically for a certain strong opponent, or in order to surprise him. For example, switching from 4-3-3 to 3-4-3 to saturate the attack.
- Modifications during the match. The coach can change a player on the field, which leads to an automatic change in functionality or scheme (for example, replacing a midfielder with a striker to switch to a more attacking scheme). Changing the position of players without substitutions (for example, switching from 4-4-2 to 4-2-3-1 or moving a full-back higher into midfield).

Therefore, in modern football, a successful coach must be not only a strategist (modeling), but also a tactical operator (modification), who instantly reacts to events on the playing field.

The effectiveness of tactical models of team play directly depends on the understanding of the players of their roles and interactions. No, even the most ingenious, tactical scheme will work if the players do not realize what is required of them and how their actions affect their partners. Therefore, each player must clearly know [14, 15, 16, 17]:

1. Functional responsibilities: What areas to cover in defense, where to open in attack. How his role changes when the team has the ball (attack), and when the ball is lost (defense).
2. Understanding of interaction. This is the realization that football is a game of partnerships.
3. Inter-positional connections. The most important pairs and "triangles" (for example, the interaction between the central midfielder, full-back and winger).
4. Communication. Non-verbal signals (gestures, gaze) and voice commands.
5. Joint movement. Creating space for a partner or, conversely, closing space for an opponent.

If players do not sufficiently understand tactical requirements and interaction, positional failures inevitably occur, "holes" appear between lines or zones of responsibility that are easily exploited by the opponent.

Decision-making is delayed, that is, players spend critical seconds on reflection, which leads to a loss of the ball or a missed goal opportunity [19, 20, 21]. The speed of transition from one phase to another gradually decreases. The team slowly moves from defense to attack and vice versa, since players do not know where to run and who to pass to in the transition phase. Thus, the effectiveness of a tactical model is primarily its high-quality execution, which is possible only with a deep understanding and coordinated interaction of players [22, 23, 24].

Despite the obvious advantages of modeling group and team tactics, research on this topic in football is lacking, especially compared to individual aspects of training. Therefore, the lack of research in the field of modeling team tactics can be explained by several key factors [25, 26, 27, 28]:

1. Multifactorial. Team tactics are an open

© 2026 Perepelytsia et al.

system. They involve the interaction of 11 players, the ball, space and time, as well as the emotional, physical and psychological state of each player. Modeling this system for scientific analysis is an extremely complex mathematical and logistical task.

2. Unlike individual skills (speed, passing accuracy), team interaction cannot be studied in isolation from the game context.

3. A large number of variables. Even a small change in the formation (for example, a winger moving 5 meters higher) can radically change the dynamics of the entire tactical model.

4. Trade secret. The most effective and advanced models of group and team interaction, developed by leading clubs and coaches, are considered a competitive advantage and a trade secret. They are rarely published in open scientific journals.

5. Difficulty in data collection. High-quality data on group movements require the use of expensive and complex tracking systems (GPS, optical systems), which are not always available for university research.

6. Analysis of this data often requires complex software (for example, for the analysis of inter-game connections of players - "Network Analysis") and highly qualified analysts, which also limits the number of studies.

However, the situation is gradually changing due to the spread of technology, tracking systems and video analysis of the game activities of football players are becoming more accessible. The use of artificial intelligence and machine learning also opens up new opportunities for the analysis of complex interactions in large data sets.

Thus, although the field of team interaction modeling is rich in practical applications, it still remains insufficiently studied from an academic point of view.

Materials and methods

Participants.

The research sample included 30 young football players (16.34±0.8 years; height 179±0.07 cm; weight 73.86±3.22 kg) - members of the youth team of the football academy "Metalist-1925" (Kharkiv), participating in the Ukrainian championship. The participants were divided into control and experimental groups of 15 people each. The distribution was carried out on the basis of initial indicators of physical and technical fitness, ensuring their statistical homogeneity ($p>0.05$). Throughout the entire period of the study, the training process for both groups was standardized and included 6 main classes per week.

The main difference was the introduction of tactical models of team interaction into the training process of the experimental group. The main goal of these models was to improve the quality (accuracy) of ball passes in three zones of the playing field: defensive, middle and attacking.

The control group, on the contrary, continued to work according to the traditional methodology, using only standard technical and tactical exercises defined by the official curriculum of the Ministry of Youth and Sports of Ukraine [29], without using innovative tactical models of team play.

The studies were conducted in accordance with international documents regulating biomedical research: "Declaration of Helsinki", adopted by the General Assembly of the World Medical Association on the ethical principles of medical research involving human subjects" (World Medical Association, 2013), "Universal Declaration 2005", "Convention for the Protection of Human Rights and Dignity with regard to the Application of Biology and Medicine", adopted by the Council of Europe (1997).

Procedure.

The study was conducted during an 8-month competitive cycle, which started in September 2024. The participants were the U-16 youth team of the Metalist-1925 football academy (Kharkiv). At the initial stage, the players were divided into two equal groups (control and experimental). To confirm the homogeneity of the sample, control matches were held. According to their results, it was established that the indicators of the total number and errors when passing the ball (in the defensive, middle and attacking zones of the field) did not have significant differences between the groups ($p>0.05$), which ensured the purity of the experiment.

The training microcycle (weekly plan) of the control group (Fig. 1), focused on technique and tactics, was strictly based on the exercises and approaches provided for by the official program of the Ministry of Youth and Sports of Ukraine [29]. The basic block of tactical training of this group included the following key areas:

1. Technical-tactical integration: training football players to effectively perform basic elements (passes, kicks, tackles, interceptions) directly in conditions close to game conditions.

2. Development of cognitive skills: training quick tactical thinking and the ability to instantly assess and respond to changes in the game situation.

3. Positional training: consolidating the principles of correct player placement (positioning) on the field both during the organization of attacking and defensive actions.

4. Modeling tactical actions: using special tactical games and simulation exercises to practically

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

Table 1. Comparative characteristics of the indicators of accurate passes of the ball to the partner, performed by football players of the control and experimental groups before the start of the experiment (n1=n2=24)

Indicators			Control group	Experimental group	Reliability assessment	
			$\bar{x}_1 \pm m_1$	$\bar{x}_2 \pm m_2$	t	p
Number of passes during the match	Defensive zone (start of attack)	Total quantity	60.34±1.03	60.88±1.04	t=0.91	p>0.05
		Number of errors	10.22±0.22	10.14±0,27	t=0.78	p>0.05
	Middle zone (attack development)	Total quantity	40.94±0.38	40.95±0.43	t=1.38	p>0.05
		Number of errors	6.99±0.29	6.82±0.23	t=0.34	p>0.05
	Attacking zone (end of attack)	Total quantity	16.95±0.45	16.74±0.48	t=0.67	p>0.05
		Number of errors	2.82±0.15	2.79±0.14	t=0.59	p>0.05

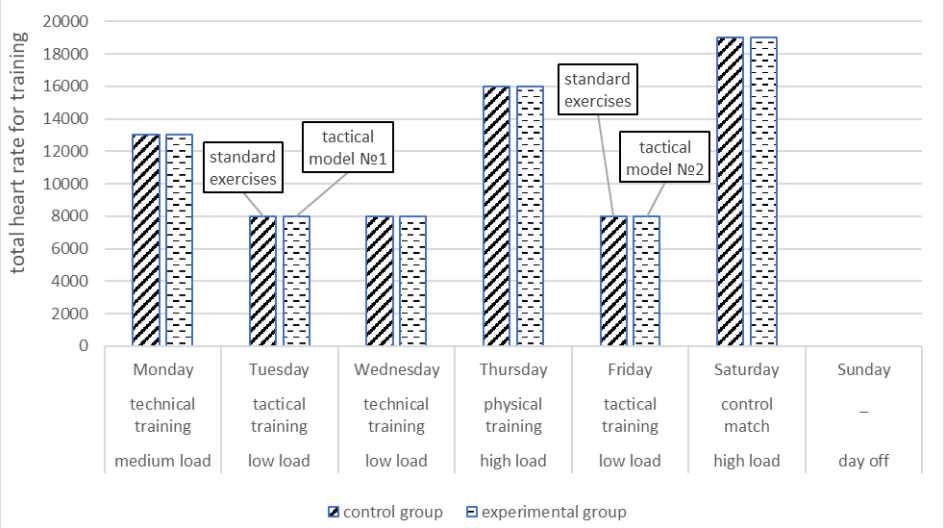


Fig. 1. Weekly microcycle of the control and experimental groups.

consolidate team interaction scenarios.

5. Control and correction: providing feedback through detailed analysis (video analysis) of training and matches to identify and correct tactical shortcomings.

6. Role specification: providing individualized tasks by the coach that correspond to the functionality and role of each player on the field.

Heart rate monitoring during team and group exercises was performed using the Polar H9, which ensured accurate data recording via the selected application/device. For the 90-minute training (Fig. 1), three load zones were defined, based on the total number of heart beats measured in the players using pulse zones [29]:

Low: up to 8000 heart beats.

Medium: 8000–14,500 heart beats.

High: over 14,500 heart beats.

The football players in the experimental group were integrated with the "Tactical Model of Team Play No. 1" (Fig. 2, 3) into their tactical training sessions during a weekly training microcycle.

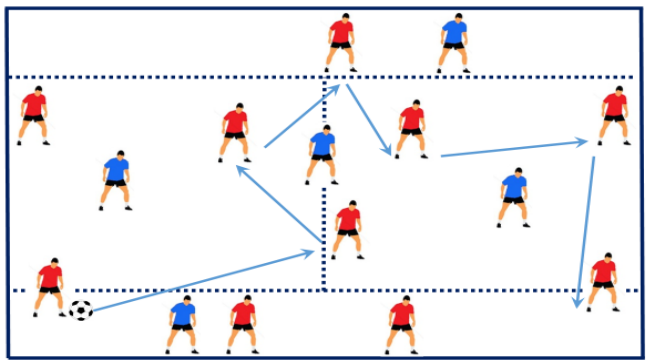


Fig. 2. Tactical model №1, based on the 4-1-4-1 command scheme.

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

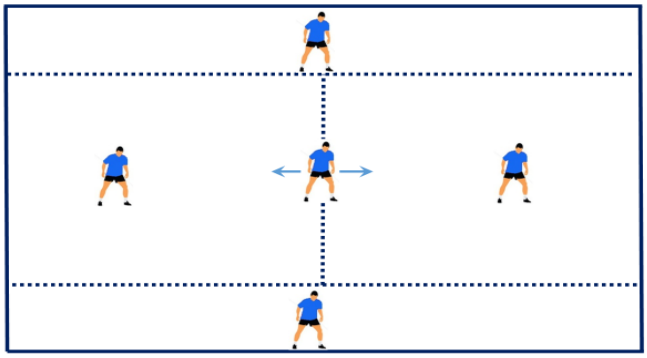


Fig. 3. Tactical model №1. Areas of responsibility of players who take the ball.

Description of tactical model #1: "Ball control against zonal pressure"

The tactical exercise is carried out on a 20x20 meter playing field and aims to practice one-touch passes in limited space and counterattack conditions.

1. Attacking team (red):

Players (marked in red) move freely around the entire playing field (Fig. 2).

Task: to make the maximum number of continuous one-touch passes, constantly changing positions and choosing the optimal position for receiving the ball in order to avoid interception.

2. Defending team (blue):

Five players (marked in blue) are inside the playing field and are performing the ball collection (Fig. 3).

Zone rule: blue players are assigned to their zones, with the exception of one player who is allowed to leave the zone.

Pressing: after the ball enters one of the four zones, the blue players who are nearby and exert maximum pressure on the players controlling the ball.

3. Regulations:

It is necessary to replace all five blue players every 5 minutes.

In the experimental group, the total duration of this exercise in tactical training is up to 30 minutes.

In order to increase the variability of the players' game activity, a second version of the tactical model of team play was additionally integrated into the weekly training microcycle of the experimental group. This model was also based on the game scheme (4-1-4-1) (Fig. 4, 5).

Description of Tactical Model #2: Keeping the ball against pressure"

1. Setup:

Field size: 20×20 meters.

Players: Football players are divided into two groups:

Reds (attack): Players in possession of the ball move freely throughout the field (Fig. 4).

Blues (defense): 5 players who actively attack the ball.

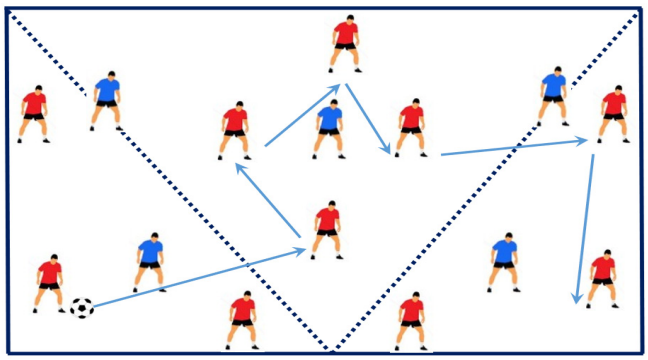


Fig. 4. Tactical model №2, based on the 4-1-4-1 command scheme.

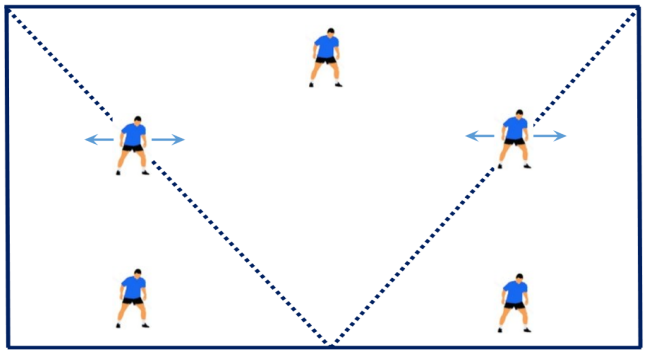


Fig. 5. Tactical model №2. Areas of responsibility of players who take the ball.

2. Tasks and rules:

Reds (attack): The main goal is to make the maximum number of passes in one touch, constantly moving and choosing the optimal positions for receiving the ball, in order to keep it from being intercepted by the blues for as long as possible.

Blues (defense): 5 players strive to take the ball away (Fig. 5). Two of them can move freely between the two zones.

Defensive pressure: As soon as the ball enters one of the three zones, the blue players exert maximum pressure on the reds, who control the ball.

3. Rotation and Duration:

It is necessary to replace four blue players every 5 minutes.

The duration of the exercise for the experimental group as part of a tactical training session is up to 30 minutes.

Statistical analysis.

Pedagogical observations were conducted with the aim of a comprehensive analysis of the individual game activity of young football players

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

during training and competitive activities.

1. Game dynamics and process correction:

Fixation of game activity was carried out in fifteen-minute time intervals.

This allowed determining the dynamics of game segments of the match, identifying the strengths and weaknesses of the team, and also promptly making the necessary adjustments to the training process.

2. Reliability and tactics:

The observations were aimed at determining the degree of game reliability of football players and the features of their game role when implementing technical and tactical actions in various combinations.

3. Protocoling and analysis:

All data were recorded by independent experts in accordance with the approved system and entered into special protocols. These protocols meet the requirements of the football curriculum approved by the Ministry of Youth and Sports of Ukraine [29].

Based on the results of video analysis of control matches, indicators were determined that characterize the playing activity of football players in different zones of the football field. These indicators were classified into three main types corresponding to the stages of attack development:

Type 1 (Initial stage of attack / "Defense zone"): reflects the number of game interactions (using accurate passes) between partners in the defense zone.

Type 2 (Stage of attack development / "Middle zone"): reflects the number of game interactions (using accurate passes) between partners in the middle zone of the field.

Type 3 (Final stage of attack / "Attacking zone"): reflects the number of game interactions (using accurate passes) between partners in the attacking zone (Fig. 6).

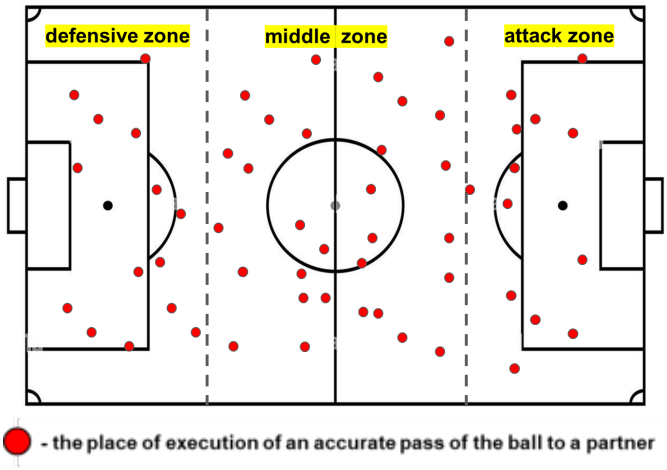


Fig. 6. Methodology for registering ball passes made in three zones of the playing field.

The study was conducted over 8 months, including 20 control matches in each group.

The accuracy of ball passes was recorded, which were at the level of low-medium group and team interaction.

- Accurate pass: the ball went to the partner.
- Inaccurate pass (miss): the ball went to the opponent, or was lost (interception, selection) and remained under the opponent's control.

Technical and tactical actions (TTD) were classified by the length of the pass:

- Short: up to 10 m.
- Medium: 10–20 m.
- Long: over 20 m.

Mathematical data processing included:

1. Calculation of accurate and inaccurate technical and tactical actions (total and by techniques) for each player (separately by half).

2. Calculation of the missing coefficient for each reception (individually and for the team as a whole), as well as the total number of technical and tactical actions per game and the total missing coefficient of the team.

The formula for calculating the missing coefficient:

Coefficient (of errors) = (technical and tactical actions with errors) : (total number of technical and tactical actions) × 100%

Explanations to the formula:

technical and tactical actions with errors – the number of technical and tactical techniques performed negatively;

total number of technical and tactical actions – total number of technical and tactical actions (sum of positive and negative actions).

In this way, the number and coefficient of errors in the execution of each technique for all players were calculated, and the number of technical and tactical actions per game was also counted and the coefficient of errors was determined.

All data obtained during the experimental study were processed in Excel using well-known methods of mathematical statistics: $\bar{x}$ - arithmetic mean; σ - standard deviation; m - error of representativeness of the arithmetic mean; t - reliability of the difference between the mean values (according to the Student's t-test).

Results

Despite the fact that the dependence of the quality of technical techniques on the rational tactical actions of the player in the middle of the playing space has been confirmed by many scientists [17, 20, 23, 24, 25], the dynamics of this dependence (technical and tactical readiness) in the process of sports training remains insufficiently studied. The dependence of the quality of technical techniques on the rational tactical actions of

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

the player is a generally recognized fact in sports science, but the dynamics of this dependence (technical and tactical readiness) in the process of sports training really needs to be studied in more depth. Understanding how technical quality affects tactical efficiency (and vice versa) over time will allow coaches to more accurately dose the load and choose priority areas of work. That is why the purpose of our study was to study the technical and tactical activity of the player under the influence of tactical models.

During the experiment, we focused on the quantitative and qualitative assessment of performed technical and tactical actions (in particular, passing the ball to a partner in different areas of the playing field) during the 8-month application of the experimental training method (Table 2; Fig. 7).

The comparative analysis demonstrates significant changes in the ball passing performance in the experimental group compared to the control group during the consecutive experiment (after 4 and 8 months). Thus, after 4 months, the experimental group significantly outperforms the control group both in terms of the total number of passes performed (improvement of the quantitative indicator $p<0.01$) and in terms of reducing the number of errors (improvement of the qualitative indicator $p<0.01$) in all game zones (Table 2; Fig. 7). These data confirm the hypothesis: the lack of integration of extreme conditions into the training process (in particular, the lack of time for decision-making) does not provide a significant improvement in the accuracy of passes in different zones of the playing field in the short term. Extreme conditions are understood as both internal factors (emotional state, cognitive characteristics) and external circumstances (limited game

Table 2. Comparative characteristics of quantitative and qualitative indicators of ball passes to a partner performed by football players of the control and experimental groups in the process of a sequential experiment (n=20)

Indicators			Initial data		Reliability assessment		After 4 months		Reliability assessment		After 8 months		Reliability assessment	
			Control group	Experimental group	t	p	Control group	Experimental group	t	p	Control group	Experimental group	t	p
Passing the ball during the match	Defensive zone (start of attack)	Total Number	60.34±1.03	60.88±1.04	t=0.91	p>0.05	61.17±0.95	64.61±1.11	t=3.35	p<0.01	61.08±1.04	65.55±1.24	t=4.15	p<0.001
		Number of errors	10.22±0.22	10.14±0.27	t=0.78	p>0.05	10.37±0.24	9.92±0.29	t=3.71	p<0.01	10.25±0.41	8.29±0.24	t=4.16	p<0.001
	Middle zone (development of attack)	Total Number	40.94±0.38	40.95±0.43	t=1.38	p>0.05	40.73±0.49	43.97±0.42	t=3.76	p<0.01	40.29±0.28	45.03±0.39	t=4.74	p<0.001
		Number of errors	6.99±0.29	6.82±0.23	t=0.34	p>0.05	7.02±0.25	6.19±0.25	t=3.45	p<0.01	7.15±0.27	5.21±0.29	t=4.24	p<0.001
	Attacking zone (end of attack)	Total Number	16.95±0.45	16.74±0.48	t=0.67	p>0.05	16.55±0.51	19.11±0.39	t=3.69	p<0.01	16.27±0.31	20.15±0.35	t=4.51	p<0.001
		Number of errors	2.82±0.15	2.79±0.14	t=0.59	p>0.05	2.91±0.17	1.89±0.11	t=3.59	p<0.01	2.94±0.18	1.02±0.13	t=4.08	p<0.001

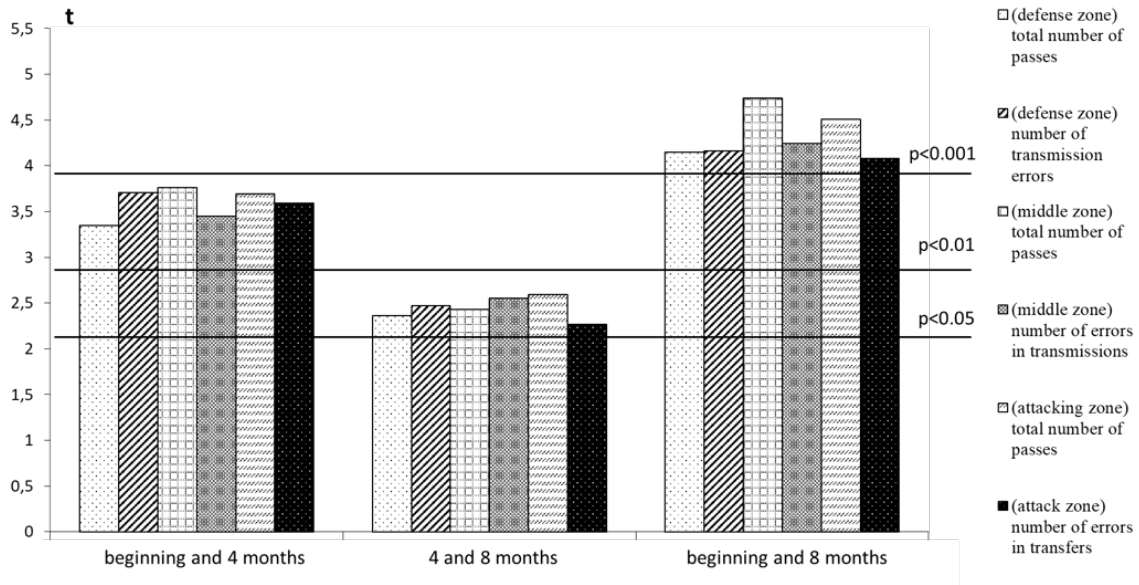


Fig. 7. Numerical values of Student's t-test and significance levels (p) of changes in the indicators of ball passes to a partner performed by football players of the control and experimental groups during the sequential experiment (n=20).

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

Table 3. Reliability matrix of differences in indicators of completed ball passes to a partner in the control and experimental groups in the process of a sequential experiment (n=20)

Indicators	Accurately executed passes of the ball	Initial data	After 4 months of classes	After 8 months of classes
Initial data	Defensive zone (start of attack)		-	-
	Middle zone (development of attack)		-	-
	Attacking zone (end of attack)		-	-
After 4 months of classes	Defensive zone (start of attack)	3.35 (p<0.01) / 3.71 (p<0.01)		-
	Middle zone (development of attack)	3.76 (p<0.01) / 3.45 (p<0.01)		-
	Attacking zone (end of attack)	3.69 (p<0.01) / 3.59 (p<0.01)		-
After 8 months of classes	Defensive zone (start of attack)	4.15 (p<0.001) / 4.16 (p<0.001)	2.36 (p>0.05) / 2.47 (p>0.05)	
	Middle zone (development of attack)	4.74 (p<0.001) / 4.24 (p<0.001)	2.43 (p>0.05) / 2.55 (p>0.05)	
	Attacking zone (end of attack)	4.51 (p<0.001) / 4.08 (p<0,001)	2.59 (p>0.05) / 2.27 (p>0,05)	

Note: In the numerator - the total number, in the denominator - the number of errors

Table 4. Dynamics of reduction in the number of transmission errors in the control and experimental groups

Playing field zones	Group	Number of errors at the beginning of the experiment	Number of errors after 8 months	Reliability assessment	
				t	p
Defense Zone (Start of Attack)	Control	10.22±0.22	10.25±0.41	t=0.57	p>0.05
	Experimental	10.14±0.27	8.29±0.24	t=3.41	p<0.01
Middle Zone (Development of Attack)	Control	6.99±0.29	7.15±0.27	t=0.84	p>0.05
	Experimental	6.82±0.23	5.21±0.29	t=3.63	p<0.01
Attacking Zone (Finishing the attack)	Control	2.82±0.15	2.94±0.18	t=0.76	p>0.05
	Experimental	2.79±0.14	1.02±0.13	t=3.29	p<0.01

information). It has been noted that the speed of decision-making correlates with the speed of processing visual information during game activity [26, 27, 28, 29].

After 8 months of experimental exposure, the gap between the groups increases, and the reliability of the differences becomes even higher (almost all indicators p<0.001). The experimental group demonstrates a stable and significant superiority over the control group. This indicates the high effectiveness of the applied experimental means or training methods, since the improvement of indicators occurs both quantitatively (more passes) and qualitatively (fewer errors). The key result was a significant increase in the accuracy of passing the ball to a partner in all areas of the playing field, covering: the defensive zone (start of the attack); the middle zone (development of the attack); the attacking zone (completion of the attack) (Table 3).

The obtained experimental results indicate a clear positive effect of the experimental intervention:

1. Reliable Start: initial homogeneity of the groups (p>0.05).

2. Rapid effect (after 4 months): the appearance of statistically significant differences in favor of the experimental group (p<0.01).

3. Strengthening of the effect (after 8 months): an increase in the advantage of the experimental group, especially in reducing the number of errors in the attacking zone (completion of the attack), where the difference becomes the most reliable and significant (p<0.001). This is the most important result, since errors in this zone are critical.

Let us separately analyze the relative dynamics of changes in indicators (reduction in errors and increase in the total number of passes) in the control and experimental groups over a period of 8 months (Tables 4, 5).

Key findings regarding passing errors:

- Control group: shows virtually no positive

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

Table 5. Dynamics of increase in the total number of ball passes in the control and experimental groups

Playing field zones	Group	Number of errors at the beginning of the experiment	Number of errors after 8 months	Reliability assessment	
				t	p
Defense Zone (Start of Attack)	Control	60.34±1.03	61.08±1.04	t=1.57	p>0.05
	Experimental	60.88±1.04	65.55±1.24	t=4.28	p<0.001
Middle Zone (Development of Attack)	Control	40.94±0.38	40.29±0.28	t=0.64	p>0.05
	Experimental	40.95±0.43	45.03±0.39	t=4.63	p<0.001
Attacking Zone (Finishing the attack)	Control	16.95±0.45	16.27±0.31	t=0.78	p>0.05
	Experimental	16.74±0.48	20.15±0.35	t=4.25	p<0.001

dynamics. In all three zones, there is even a slight increase in the number of errors.

- Experimental group: shows a significant decrease in the number of errors. The most impressive decrease occurred in the attacking zone (errors when completing attacks) - over 63%.

Key findings regarding total passes:

Control group: All three zones saw a decrease in total passes over the 8-month period.

Experimental group:

– There was also a slight decrease in total passes in the defensive and midfield zones, which may indicate an optimization of the game (fewer passes but greater accuracy).

– There was a significant increase in total passes in the attacking zone – over 20%, indicating an activation of the final phase of the attack.

General conclusion on dynamics. Analysis of the dynamics of changes within the groups confirms the high effectiveness of the experimental influence.

Quality improvement: the experimental group achieved a significant reduction in errors in all zones, especially in the critical Attacking zone (a decrease of 63.44%), while in the control group the quality of passes deteriorated.

Quantity improvement in the key zone: the experimental group increased the number of passes in the Attacking zone by 20.37%, which, combined with the minimization of errors, is a sign of a significant increase in the effectiveness of attacking actions.

These results clearly show that only the experimental influence led to qualitative and quantitative positive changes in the ball passing indicators.

Summary of absolute changes. The largest and most important progress, expressed in absolute values, achieved by the Experimental Group in the Attacking zone:

- Increase in the number of passes by +5.37 (compared to the initial difference of -0.21).

- A reduction in the number of errors by -1.92 (compared to an initial difference of -0.03).

These absolute values confirm that the experimental exposure led to more effective and quantitatively active completion of attacks.

The obtained quantitative data confirm that high accuracy in the final third of the field is ensured by:

1. Moving through the central corridor. It has been established that entering the final third through the central corridor is more often positively associated with successful shots on goal than flank passes.

2. Assists. The accuracy of goal passes (direction to the opponent's goal) is also a significant factor in success, since these passes directly overcome defensive lines.

3. Maintaining leadership. Teams that are more successful in maintaining the lead in the match (i.e. winning), as a rule, continue to perform more completed passes in the attacking third, even when leading. This indicates the maintenance of pressure and control.

The obtained quantitative indicators clearly confirm that the accuracy and efficiency of passes in the final third of the field is a critical indicator of team skill, as it directly correlates with the generation of scoring opportunities and the probability of victory. Teams that can accurately pass the ball into the most difficult zone (attack zone) demonstrate a higher level of integration of technical and tactical preparedness.

Thus, the results of our study clearly confirm the key hypothesis: accurate ball passes are not just an important element, but a reliable foundation for the success and efficiency of any team in modern football. The applied tactical models of team play have become the basis of a coherent and structured team game, without which the implementation of tactical plans is impossible. The key importance of tactical models and the development of accurate passes with their help provides the team with the following advantages:

– Risk minimization. An accurate pass critically minimizes the probability of losing the ball. Loss of possession is the worst-case scenario, since it not only stops one's own attack, but also immediately gives the opponent an advantage, allowing him to start his counterattack from an advantageous position.

– Psychological advantage. Long and effective possession of the ball, provided with accurate passes, tires the opponent physically and morally, reducing his aggressiveness and forcing him to

© 2026 Perepelytsia et al.

ISSN (print) 1991-0177, ISSN (online) 1999-818X
SLOBOZHANSKYI HERALD OF SCIENCE AND SPORT
Vol. 30 No. 2, 2026

defend.

– Overcoming the defense. Accurate and fast passes are the main tool for overcoming the opponent's saturated defense.

– "Cutting pass". A quick, timely pass into free space, "on the move" to a partner or through the defense line can "cut" the opponent's defensive lines, bringing the player into a striking position or creating a numerical advantage in the attack zone.

– High pace. Fast, sharp and technically flawless passes allow the team to develop a high pace of attack, to which the opponent's defense often does not have time to adapt or rebuild.

– Maintaining structure. Accurate passes allow players to maintain their positions and adhere to the game structure. In contrast, an inaccurate pass forces players to move out of position to catch the ball, which throws the team off balance and leaves them vulnerable to a quick counterattack after a turnover.

– Transitional phases. Accurate passing is vital for quickly transitioning from attack to organized defense in the event of a turnover, as players are in position and ready to press or tackle.

Thus, passing is a way of moving the ball efficiently, moving faster and with less energy than the player. This allows key attacking players to conserve energy for decisive actions in the final phase of the attack.

Discussion

Pedagogical observations conducted during the experiment confirmed the crucial role of passing accuracy among the football players in the experimental group. This indicator turned out to be critically important for effective possession of the ball, successful escape from pressure and the formation of scoring opportunities in the 'defensive', 'middle' and 'attacking' zones.

Our research convincingly demonstrates that structured training of passing skills is a key factor in improving the playing performance of football players.

Training, which combines specialized technical exercises and systematic feedback in the game context of tactical models of team play (e.g., Small-Sided Games, positional games), turned out to be highly effective:

- Improvement of basic passing accuracy: there is a significant improvement in the mechanics of passing (in particular, striking with the inside of the foot), which is fundamental for reliable ball control.

- Developing decision-making speed: Training in a game-like environment integrates technique with cognitive processes. This is critical for developing the speed and quality of decision-making under pressure from an opponent.

The accuracy of ball passes in the conditions of the average group level (up to 6 players) is an important indicator of the effectiveness of the training process and team interaction.

- Normative range of efficiency: for a successful and effective game in such formats, the accuracy rate should usually be in the range from 75% to 85%.

- High skill: players who are distinguished by high-quality vision of the field, high technique and tactical intelligence can consistently demonstrate an overall accuracy of passes of over 80%.

- Progressive passes: the accuracy of high-quality passes deserves special attention - those that directly move the team forward (destroy the lines of defense). For this category of passes, the range of 60% - 85% is considered effective, since they always carry a greater risk.

- Experimental data: our observations confirm that a high efficiency rate in skilled football players can reach 83.3% and above.

A decrease in the pass accuracy rate to 60% - 65% is an alarming indicator and indicates the presence of significant problems that require immediate correction:

- Technical shortcomings: Instability of the pass execution, which leads to frequent losses.

- Decision-making errors: Untimely or inaccurate selection of the recipient of the pass, which is exacerbated by pressure.

- Communication and interaction problems: Lack of synchronization of movement, poor "scanning" of the field or misunderstanding of tactical tasks.

In the small and medium group environment of experimental tactical models, especially when space is limited and there is a numerical advantage of the opponents (for example, 3 against 2), the accuracy of the pass becomes the most important element for several reasons:

- Minimum decision time. Due to the limited space and the proximity of the opponents, the player with the ball has only a fraction of a second to assess the situation and execute the pass. An inaccurate pass instantly leads to a loss of possession.

- High pressure. The opponents can easily block the passing lines and exert direct pressure. The pass must be executed not only accurately, but also with ideal power and accuracy to bypass the defenders.

- Creation of space. An accurate pass "on foot" or "on the move" allows the partner to instantly change the vector of the attack, bypass the pressure, or use the only free space that has appeared. An inaccurate pass, even if it reaches the intended recipient, will force the partner to stop, lose pace or handle the ball poorly, which again will give time to the defenders.

- Maintaining possession. In a format where it is difficult to take the ball back, every loss of pass is critical. High accuracy of passing is a key tool for maintaining control of the ball in difficult

© 2026 Perepelytsia et al.

conditions.

- Maintaining intensity, as in the game. Such exercises simulate high-pressure game situations. Hone the accuracy of passing in these conditions directly improves the players' skills for matches.

It is the comprehensive approach embedded in experimental tactical models (e.g., Small-Sided Games - SSGs, positional games, Rondo) that allows for the simultaneous development of all these critical components:

- Technique under pressure. Not only the execution of elements (pass, reception) improves, but also their accuracy and speed in conditions of limited space and direct pressure from the opponent. Technique becomes functional - it serves tactics.

- Field vision (scanning the playing space). Players are constantly learning to visually "scan" the space before receiving the ball in order to instantly assess the positions of partners, opponents and free zones. This skill is necessary for making correct and quick decisions.

- Speed of thought (decision making). Training in limited conditions forces players to make decisions faster (when to pass, who to pass to, where to move). This transfers the intensity of thinking from training directly into the game.

- Interaction (tactical intelligence). Through repeated situations, players improve their understanding of partners (team chemistry) and tactical principles (e.g., movement synchrony, creating triangles, opening up space). This builds team tactical intelligence.

Thus, tactical models of team play not only form physical skills, but also develop cognitive (cognitive) abilities of football players, integrating technique and tactics into a single process.

In the conditions of modern football, which is characterized by intense pressing [26, 27, 28, 29] and limited playing space [30, 31, 32], stable accuracy of passes under pressure is a decisive competitive advantage of the team [33, 34]. To achieve this advantage, not only high individual technical skill is required, but also a coordinated team structure and mutual understanding to effectively open free corridors and provide support for the recipient of the pass [35, 36].

Thus, the introduction of time and space restrictions in the proposed training tactical models significantly intensifies the cognitive activity of football players. This catalyzes the speed of decision-making in dynamic game episodes and ensures improvement of both qualitative and quantitative parameters of inter-level interactions (at the initial stage of the attack (defensive zone); stage of attack development (middle zone of the field); stage of attack completion (attacking zone).

Conclusion and practical conclusions

Tactical models of team play can be considered a highly effective type of small training games for improving the technical and tactical activities of young football players.

1. High game specificity. Unlike traditional exercises, tactical models (when players perform actions in accordance with the tasks of the team scheme) simulate real game situations. This allows players to develop technical skills (passing, control, shots) under the pressure of time, space and the opponent, which is critical for football.

2. Comprehensive technical and tactical development. Small training games built on tactical models:

- Stimulate players to perform technical techniques (accurate passes, beating) with a tactical goal (getting out of pressure, creating a scoring opportunity).

- Require constant decision-making regarding movement, positioning, choosing the direction of attack or defense, which directly works out the algorithms of interactions in the team scheme.

3. Increased game activity. Typically, small training games have a higher intensity and density of action compared to a full-size match. This contributes to:

- More frequent contact with the ball (better formation of technique).

- More accelerations and changes of direction (better physical development, especially speed-strength endurance).

- Better understanding of space and positional requirements.

The findings of our study confirm that the indicated tactical models reliably increase the indicators of passing accuracy and overall game activity in key areas of the playing field, which is a direct reflection of the improvement of technical and tactical readiness.

Acknowledgments

The authors express their gratitude to the teaching staff of the Department of Physical Education and Sports of Donetsk National Technical University for the opportunity to conduct the research. The authors also express their deep gratitude to all students who participated in the study.

Conflict of interest

The authors declare that there is no conflict of interest.

Received: April 14, 2026; Accepted: May 18, 2026; Published: June 30, 2026

References

1. Tassi M, Nobari H, García D, Rubio A, Gajardo L, Manzano D, García-Calvo T. Exploring a holistic training program on tactical behavior and psychological components of elite soccer players throughout competition season: a pilot study. BMC Sports Science, Medicine and Rehabilitation,

© 2026 Perepelytsia et al.

2024; 16(1):16-27. doi:10.1186/s13102-024-00811-x

2. Badari P, Machado G, Moniz F, Fontes A, Teoldo I. Comparison of soccer players' tactical behaviour in small-sided games according to match status. Journal of Physical Education and Sport, 2020; 21(1):12-20. doi:10.7752/jpes.2021.01002

3. Gaviria J, Valencia-Sánchez G, Espinal E, Bustamante L, Arias-Arias E. Tactical critical thinking program on the tactical efficiency index, declarative and procedural knowledge in male soccer players: a case study. Frontiers in Sports and Active Living, 2024; 6, 1469347. doi:10.3389/fspor.2024.1469347

4. El-Kailani G, Al Qarra S, Mazahreh J, A'mir O, Mersal M, Alkhateib M, Fattah OA. Nutritional knowledge, practices and habits of elite female soccer players according to the playing position. Phys Act Rev 2025; 13(1): 131-140. doi:10.16926/par.2025.13.12

5. Perepelytsia P. The problem of football intelligence in modern research. Journal of Sports Games, 2024;4(34):55-61.https://doi.org/10.15391/si.2024-4.07

6. Djaba W, Budiarti R, Sukamti R, Prabowo A. (2024). The Impact of Motivation on Decision-Making of Futsal Goalkeepers in Indonesia: An Analysis of Self-Confidence as Mediator. Sport Mont, 2024;22(2):45-51. doi:10.26773/smj.240707

7. Koval I, Yaremko R, Hurtovenko N, Sirko R, Stelmakh O, Slobodianyk V, Kulyk Y, Hoian I. Juniors' extreme risky behavior in the context of the structure of self-efficacy in competitive activity. Journal of Physical Education and Sport, 2024; 24(10):1331-1341. doi:10.7752/jpes.2024.10257

8. Otero-Saborido FM, Torreblanca-Martínez S, González-Jurado JA. Crosses into the box: comparison of the top five European football leagues. Phys Act Rev 2024; 12(2): 20-28. doi:10.16926/par.2024.12.18

9. Gongbing S. The Practicality and Effectiveness of Soccer Scoring Techniques Revealed by Top Elite Soccer Scorers. Physical Activity Review, 2023; 11(1): 99-111. doi: 10.16926/par.2023.11.12

10. Lebediev S, Zhurid S, Koval S, Shalenko V. Control of physical and technical readiness of football players at the stage of specialized basic training. Slobozhanskyi Herald of Science and Sport, 2022; 26(1):14-19. https://doi.org/10.15391/snsv.2022-1.003

11. Yasar M, Cilli M, Cinarli F, Sakabas S, Guvenkaya M, Oztoprak U. The Association Between Heart Rate and Shooting Accuracy in Young Football Players. Sport Mont, 2025; 23(1), 31-36. doi:10.26773/smj.250205

12. Rose S, Burton D. Exploring the impact of a mental skills training curriculum with elite university student-athletes: A qualitative case study. Journal of Physical Education and Sport, 2024; 24(11):1564-1575. doi:10.7752/jpes.2024.11282

13. Halian I, Popovych I, Charkina O, Halian A, Danko D, Zaverukha O, Haponenko L, Kryzhanovskyi O. Relationship between emotional intelligence and coping strategies in junior athletes' behavior during extreme competitive situations. Journal of Physical Education and Sport, 2024; 24(11):1518-1527. doi:10.7752/jpes.2024.11278

14. Li H. The tactical mindset of football players: Choosing effective training strategies for Top-Notch Performance. International journal of sport psychology, 2022; 22(53):525-542 doi:10.7352/IJSP.2022.53.525

15. Piepiora PA. Personality traits and sporting level of athletes. Physical Education of Students. 2024;28(3):144-51. https://doi.org/10.15561/20755279.2024.0302

16. Papadopoulos S, Papadimitriou K, Ispirlidis I, Papadopoulos D, Konstantinidou, X. Analysis of Offensive Transitions of Barcelona based on the Initial Penetration after the Ball Recovery. Sport Mont, 2023;21(1):103-109. doi:10.26773/smj.230217

17. Svintsova V, Morhushchenko O. Futbol. Navchal□na prohrama: Brovars'ka drukarnya; 2003. 105 s. (in Ukrainian)

18. Kostyukevych VM. «Teoriya i metodyka sportyvnoyi pidgotovky» (na prykladi komandnykh igrovykh vydiv sportu). Navchalnyy posibnyk Vinnytsya: Planer; 2014. 616 s. (in Ukrainian)

19. Dube A, Gouws C, Breukelman J. Exercise-Heat Stress, Hyperthermia, Dehydration and Fatigue Effects on Cognitive Performance among Semi-Professional Male Athletes. Physical Activity Review, 2022; 10(1): 10-21. doi: 10.16926/par.2022.10.02

20. Beyaz O. The Effect of 32-Week Football Training on Body Mass Index and Motor Performances of Male Children Aged 8-10. Sport Mont, 2025; 23(1), 43-49. doi:10.26773/smj.250207

21. Katanic B, Bjelica D, Mekic A, Kristicevic T, Curic M, Stankovic M. Comparison of Anthropometric Characteristics and Body Composition between Professional Montenegrin Footballers and Karatekas. Sport Mont, 2025; 23(1), 79-83. doi:10.26773/smj.250212

22. Brito Â, Freitas L. Decoding the influence of Field Surface, Tactical Positioning, and Field Zone on Tactical Networks in Youth Football. Journal of Human Sport and Exercise, 2025; 20(2):446-458. doi:10.55860/e8rafc81

23. Melziddinov R, Akramov B, Kazoqov R. The relationship of the efficiency of technical-tactical actions of football players with the level of physical preparation. Modern Science and Research, 2024; 24(2):1153-1165. doi:10.5281/zenodo.10701662.

24. Kraynik Y, Mulik V, Lebediev S. Performance indicators of the technical and tactical actions of young football players of 13–14 years of various game roles. Slobozhanskyi herald of science and sport, 2019; 19(5(73):48-52. doi:10.5281/zenodo.3596563

25. Šunjić I, Versic S, Modric T, Corluka M, Zaletel P. The Comparison of Position-Specific Match Performance between the Group and Knockout Stage of the UEFA Champions League. Sport Mont, 2024;22(2):9-17. doi:10.26773/smj.240702

26. Anam K, Setiowati A, Indardi N, Irawan A, Aditia E, Amrulloh A, Susanto N, Eken Ö, Setyawan H, Kozina, Z, Pavlović R. The effect of FIFA 11+ kids warm-up program on agility in football: An experimental study. Retos, 2024(56):631-638. doi:10.47197/retos.v56.105659

27. Rico-González M, Pino-Ortega J, Castellano J, Oliva-Lozano J, Los Arcos A. Reference values for collective tactical behaviours based on positional data in professional football matches: a systematic review. Biology of Sport, 2022; 39(1):101-114. doi:10.5114/biolsport.2021.102921

28. Hedayatpour N, Falla D. Physiological and Neural Adaptations to Eccentric Exercise: Mechanisms and Considerations for Training. BioMed Research International. 2015;(15):7. https://doi.org/10.1155/2015/193741.

29. Svintsova V, Morhushchenko O. Futbol. Navchal'na prohrama: Brovars'ka drukarnya; 2003. 105 s. (in Ukrainian)

30. Ismail FH, Abd Karim Z, Rozali NA, Ramalu RR. The effects of deep breathing on the mental toughness of athletes in Puchong Fuerza football club. Pedagogy of Physical Culture and Sports. 2022;26(4):265-9. https://doi.org/10.15561/26649837.2022.0406

31. Perevoznyk V, Perepelytsia P, Paievskyi V. Peculiarities of technical and tactical actions of the teams of Ukraine, Spain, Argentina at the 2022 World Cup and 2024 European Football Championships. Journal of Sports Bulletin of the Dnieper Region, 2024;4(34):225-231.http://infiz.dp.ua/misc-documents/2025-01/2025-01-22.pdf

32. Almonacid-Fierro A, Souza de Carvalho R, Sepúlveda-Vallejos S, Méndez-Cornejo J, Aguilar-Valdés M. Teaching grassroots soccer: a systematic review of literature. Pedagogy of Physical Culture and Sports. 2024;28(1):53-62. https://doi.org/10.15561/26649837.2024.0106

33. Eather N, Wade L, Pankowiak A, Eime R. The impact

© 2026 Perepelytsia et al.

of sports participation on mental health and social outcomes in adults: a systematic review and the 'Mental Health through Sport' conceptual model. Systematic Reviews. 2023;12(2):102-109. https://doi.org/10.1186/s13643-023-02264-8

34. Fang L, Wei Q, Xu J. Technical and tactical command decision algorithm of football matches based on big data and neural network. Scientific Programming, 2021; 21(1), 5544071. doi:10.1155/2021/5544071

35. Djaba W, Budiarti R, Sukamti R, Prabowo A. The Impact of Motivation on Decision-Making of Futsal Goalkeepers in Indonesia: An Analysis of Self-Confidence as Mediator. Sport Mont, 2024;22(2):45-51. doi:10.26773/smj.240707

36. Longakit J, Toring-Aque L, Aque Jr. F, Sayson M, Lobo J. The role of coach-athlete relationship on motivation and sports engagement. Physical Education of Students. 2024;28(5):268-7. https://doi.org/10.15561/20755279.2024.0503

Information about the authors

Pavlo Perepelytsia
pepp0435@gmail.com
https://orcid.org/ 0009-0003-7315-4369
Department of Football and Hockey, Kharkiv State Academy of Physical Culture
Klochkovskaya str. 99, Kharkiv, 61022, Ukraine

Viacheslav Mulyk
office.rector@khdafkdo.com.ua
https://orcid.org/0000-0002-4441-1253
Department of Olympic and Professional Sports, Kharkiv State Academy of Physical Culture
Klochkovskaya str. 99, Kharkiv, 61022, Ukraine

Volodymyr Prykhodko
KomandaODI@ukr.net
https://orcid.org/0000-0001-6980-1402
Department of Theory and Methods of Sports Training, Educational and Scientific Institute «Prydniprovsk State Academy of Physical Culture and Sports» of the Ukrainian State University of Science and Technology
Naberezhna Peremohy St., 10, Dnipro, 49094, Ukraine

Volodymyr Perevoznyk
vperevoznik60@gmail.com
https://orcid.org/ 0000-0001-6798-1497
Department of Football and Hockey, Kharkiv State Academy of Physical Culture
Klochkovskaya str. 99, Kharkiv, 61022, Ukraine

Sviatoslav Koval
koval.s.s.79@gmail.com
https://orcid.org/0000-0001-7140-6276
Department of Football and Hockey, Kharkiv State Academy of Physical Culture
Klochkovskaya str. 99, Kharkiv, 61022, Ukraine

Sergey Lebedev
argus13@ukr.net
https://orcid.org/ 0000-0002-8452-8800
Department of Football and Hockey, Kharkiv State Academy of Physical Culture
Klochkovskaya str. 99, Kharkiv, 61022, Ukraine

© 2026 Perepelytsia et al.