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METHODOLOGICAL JOURNAL**<http://mentaljournal-jspu.uz/index.php/mesmj/index>**PEDAGOGICAL CONTROL OF TECHNICAL AND TACTICAL ACTIONS OF
YOUNG FUTSAL PLAYERS DURING THE COMPETITION****Shokhjakhon Mukhsinov***Independent Researcher (PhD)**Uzbek State University of Physical Culture and Sport**E-mail: shmukhsinov@gmail.com**Chirchik, Uzbekistan***ABOUT ARTICLE**

Key words: Futsal, youth athletes, technical-tactical performance, efficiency coefficient, pedagogical monitoring, time-interval analysis, Russian U-16 Championship, Uzbekistan Championship.

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Abstract: This article presents a comprehensive analysis of the technical and tactical actions of 15–16-year-old futsal players and evaluates their effectiveness during competitive matches. The study examined games from both the Russian U-16 Championship and the Uzbekistan Championship, employing detailed pedagogical observation and video analysis to assess performance at various time intervals and across different rounds. The findings indicate that local Uzbek futsal players exhibited a lower frequency of technical-tactical actions and reduced efficiency compared to their foreign counterparts. Furthermore, the analysis revealed a gradual decline in performance consistency and technical-tactical stability as the rounds progressed, likely influenced by accumulated fatigue. The obtained results provide a solid empirical foundation for the development of evidence-based training programs and pedagogical recommendations aimed at enhancing the technical, tactical, and physical preparation of young futsal athletes.

Introduction. The formation of technical and tactical movements in young futsal players represents a dynamic and continuous pedagogical process. This process encompasses

interrelated objectives, including the refinement of technical elements, the development of tactical thinking, accurate assessment of game situations, and the selection of appropriate tactical solutions. In practice, the development of technical and tactical skills in each young athlete occurs individually, necessitating a systematized, precise, and scientifically grounded approach to monitoring and control. Accordingly, coaches must evaluate multiple factors, such as ball-handling proficiency, decision-making speed under time constraints, and the quality of technical movements executed under opponent pressure, based on comprehensive analyses.

Globally, the adoption of innovative tools for precise recording and analysis of technical and tactical indicators has become increasingly prevalent. Intelligent video analysis systems, automated statistical platforms, motion sensors, dynamic speed and direction trackers, and algorithm-based digital diagnostic programs have advanced the monitoring of technical-tactical movements to a new level. These technologies enable accurate tracking of athlete movement dynamics, pass geometry, technical responses in contested situations, positional correctness on the field, rotational movements without the ball, positional adjustments, and the actual effectiveness of tactical decisions [1,2,3,8,10].

The significance of technical and tactical monitoring lies in the fact that these skills in young futsal players develop inextricably alongside their physical, cognitive, and motor maturation during adolescence. Without scientifically based control, technical errors, flawed tactical decisions, and deficiencies in coordination can become long-term obstacles to athletic development. Consequently, numerous studies emphasize that the establishment of technical and tactical control from an early stage is a critical determinant in the formation of highly skilled athletes [4,5,6,7,9].

During technical and tactical supervision in training, coaches gain clear insights into the elements in which a young athlete struggles, the technical movements prone to errors, problematic decision-making situations, and weaknesses within team game schemes. For instance, inaccuracies in short-distance passes or errors in action sequences under pressure can significantly impair game effectiveness. Similarly, incorrect defensive positioning, delayed opponent tracking, and a low capacity to create space without the ball signal insufficient tactical proficiency. Timely identification of such deficiencies and targeted correction through individualized programs lays a foundation for achieving high competitive performance in the future. Thus, scientific control of technical and tactical movements using innovative technologies, alongside their systematic integration into training, represents a priority in the optimization of young futsal player development. This approach fosters not only the

enhancement of sports methods but also the advancement of pedagogical technologies, ultimately ensuring the attainment of high performance in young athletes.

Materials and Methods. Purpose of the research: The study aims to identify the shortcomings and development needs of 15–16-year-old futsal players through systematic pedagogical monitoring of their technical and tactical actions during training and competitive conditions.

Research objectives:

to conduct systematic monitoring of athletes' training status by assessing technical-tactical performance during rounds and consecutive matches under competitive conditions.

to develop practical, evidence-based recommendations that enhance the educational and sports training process of young futsal players based on the collected data.

Research methods: A combination of qualitative and quantitative methods was employed to ensure a comprehensive assessment. These included:

- analysis and generalization of scientific and methodological literature to establish theoretical foundations and identify best practices in monitoring technical-tactical actions in futsal.

- pedagogical control, including systematic observation and video recording of players' technical and tactical performance during both training sessions and competitive matches.

- mathematical and statistical methods to process the collected data, identify patterns, and evaluate performance indicators quantitatively, ensuring objective assessment of technical and tactical proficiency.

This methodology allowed for a detailed, evidence-based evaluation of the technical-tactical preparedness of young futsal players and supported the formulation of scientifically grounded recommendations for their training optimization.

Result and Discussion. Organization of the study. In this research, systematic pedagogical observation was employed to accurately assess the performance of 15–16-year-old futsal players during competitive play. The study focused on evaluating the technical and tactical actions of athletes participating in both local and international competitions, with particular attention to their decision-making abilities in tactical situations and fundamental skills, including passing, intercepting, feinting, and shooting. Specifically, the game activity of U-16 teams participating in the Russian Championship was analyzed based on 30 matches conducted between 2022 and 2024. The technical and tactical performance indicators of teams such as CSKA, Vodnik, Rovesnik, Norman, Ukhta, Pomore, Yugra-Yugor, Signal, and Tyumen

were carefully assessed through pedagogical observation. The data obtained from these observations served as a foundation for developing evidence-based pedagogical recommendations aimed at enhancing the training and technical-tactical preparedness of young futsal players. This systematic approach allowed for the identification of specific strengths and weaknesses in player performance and provided a scientific basis for the optimization of training strategies tailored to youth futsal development.

Analysis of the obtained results. To evaluate the performance of young futsal players based on accurate and reliable data, the technical and tactical actions of 15–16-year-old athletes participating in the Russian U-16 Championship were systematically analyzed using pedagogical observation. A specially developed pedagogical assessment card was employed, and video recordings of official matches provided the primary basis for the analysis.

A total of over 50 match results were examined, with the number of technical-tactical actions, their efficiency, arithmetic mean, and standard deviation calculated for quantitative assessment. The analysis revealed significant differences between performance indicators at the beginning and end of the matches. Specifically, during the first 10 minutes, players performed an average of 137.1 technical-tactical actions with an efficiency of 80.5%, accompanied by a relatively high standard deviation. By contrast, at the end of the matches, these figures declined notably: the number of actions decreased to 87.2, and efficiency fell to 61.4%.

This decline in performance was associated with factors such as physical fatigue, reduced game intensity, and a qualitative weakening of coordinated team actions. These findings highlight the importance of continuous technical and tactical monitoring in the training of young futsal players, as timely identification of performance decline can inform corrective strategies and individualized training programs (see Table 1).

Table 1

Implementation of technical methods of 15-16-year-old futsal players during the game and the dynamics of their changes in different time intervals (Russian Championship)

N o.	Technical methods		Game times									
			1-10		11-20		21-30		31-40		Total	
			Σ	SC %	Σ	SC %	Σ	SC %	Σ	SC %	Σ	SC %
1.	Passing the ball	\bar{X}	107 .1	90.3	86.8	87.3	85	85, 1	64.2	70.6	343	84.6

		σ	8.81	2.5 1	6.06	2.15	6.76	1.43	4.26	1.80	13.2	1.19
2.	Taking the ball away	\bar{X}	10.1	56.8	10.3	58.1	12.4	32.4	7.35	27.6	40.1	43.7
		σ	1.41	7.53	1.38	6.57	1.9	6.97	0.94	5.28	2.59	3,1
3.	Deceiving the opponent	\bar{X}	11.2	49.4	11.2	53.4	9.5	41	10.3	53.1	42.2	49.5
		σ	1.9	6.52	1.42	8.2	1.61	5.93	1.88	1.78	3.26	3.03
4.	Shot on goal	\bar{X}	9.29	31.4	6.33	60.2	4.49	22.4	5.27	13.3	25.4	33.1
		σ	0.96	6.04	1.21	13.4	0.77	5.29	1.3	3.42	2.72	4.9
5.	Total	\bar{X}	137 ,1	80.5	115 ,1	79.9	111	72.9	87.2	61.4	450	74.8
		σ	9.32	2.7	6.58	1.64	6.41	2.47	4.68	1.89	11.2	0.84

Passing is a critical technical-tactical element that significantly influences the flow and effectiveness of the game. Analysis of match performance revealed that in the first 10 minutes, players of the Russian U-16 teams executed an average of 107.1 ± 8.81 passes with an efficiency of $90.3 \pm 2.51\%$. However, by the final 10 minutes of the game, these values decreased markedly, with passes averaging 64.2 ± 4.26 and efficiency declining to $70.6 \pm 1.80\%$. This reduction is primarily attributed to physical fatigue, decreased attentional focus, and a decline in the effectiveness of tactical decision-making as the match progresses.

A similar trend was observed in the Uzbekistan Championship. During the initial 10 minutes, players performed 89.4 ± 4.27 technical-tactical actions with an efficiency (SC%) of $72.5 \pm 1.69\%$. By the 20th minute, the number of actions slightly decreased to 84.5 ± 4.52 , with an SC% of $71.2 \pm 1.43\%$. At the 30-minute mark, actions further declined to 80.6 ± 4.09 , and efficiency dropped to $69.8 \pm 1.99\%$. In the final 10 minutes, the performance indicators fell again to 79.1 ± 2.93 actions, with an SC% of $63.9 \pm 1.89\%$.

These results confirm a consistent decline in both the quantity and efficiency of passing as the game progresses, reflecting similar dynamics observed in foreign U-16 futsal players (see Table 2). The findings underscore the influence of fatigue, decreased tactical attention, and reduced decision-making efficiency on performance during the latter stages of a match, emphasizing the importance of monitoring and targeted training to maintain technical-tactical effectiveness throughout the game.

Table 2

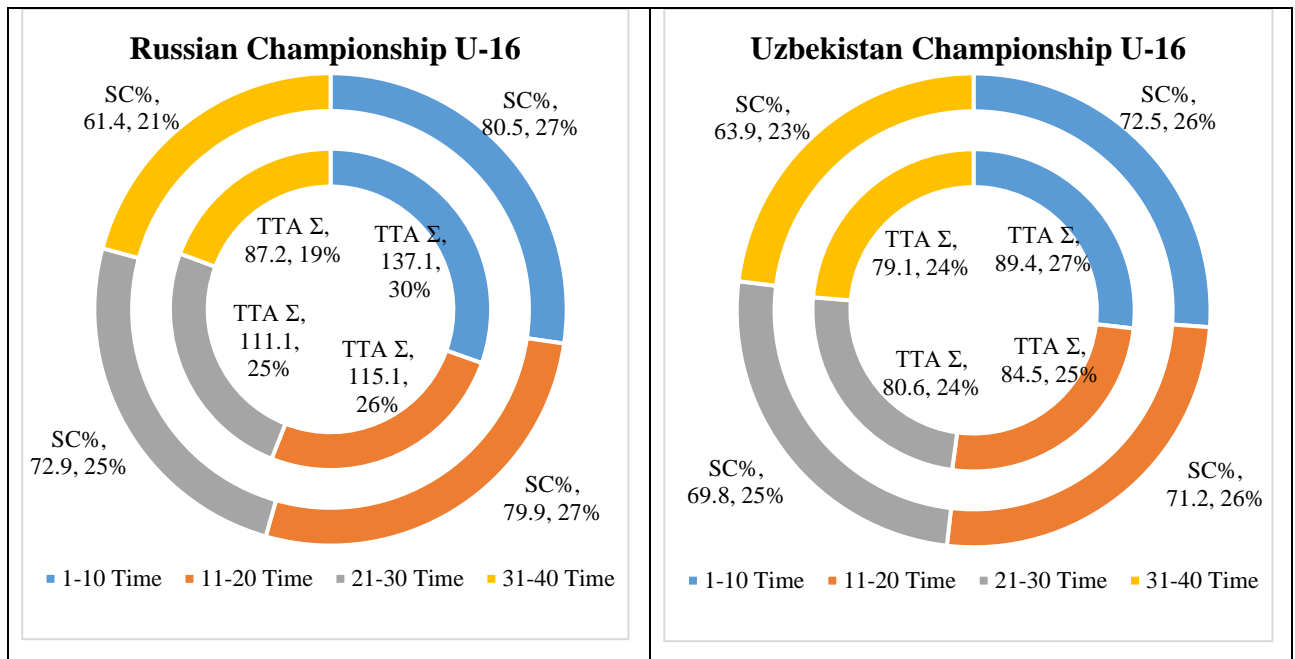
The implementation of technical techniques in the game by 15-16 year old futsal players and their dynamics of change at different time intervals (n=26)

N o.	Technical methods	Game times										
		1-10		11-20		21-30		31-40		Total		
		Σ	SC%	Σ	SC %	Σ	SC %	Σ	SC %	Σ	SC %	
1.	Passing the ball	\bar{X}	62.6	81.2	59.1	81.5	57.4	79.9	55.2	73.8	234	79.2
		σ	3.49	2.09	3.9	1.56	3.31	2.29	1.85	2.34	9.41	1.05
2.	Taking the ball away	\bar{X}	11.4	57.5	10.3	51.8	10.5	47.8	11.2	43.2	43.4	50.1
		σ	1.71	4.19	1.73	3.66	0.95	4.53	1.02	3.51	3.68	2.43
3.	Deceiving the opponent	\bar{X}	9.16	56	8.95	54.5	8.29	49.8	9.12	42.9	35.5	50.7
		σ	1.62	4.56	1.01	7.43	0.53	4.85	1.21	4.24	1.93	2.73
4.	Shot on goal	\bar{X}	5.98	35	6.13	27.3	4.33	26.8	3.68	32.3	20.1	30.1
		σ	0.73	4.1	1.1	7.58	0.76	6.47	0.97	8.35	1.61	4.31
5.	Total	\bar{X}									69	
			89.4	72.5	84.5	71.2	80.6	69.8	79.1	63.9	333.1	.4
		σ	4.27	1.69	4.52	1.43	4.09	1.99	2.93	1.59	10.4	0.57

The analysis revealed a gradual decline in technical and tactical activity among young futsal players throughout the course of a game. Specifically, after 30 minutes, the number of technical and tactical actions decreased to 80.6 ± 4.09 , with an efficiency coefficient (EC%) of $69.8 \pm 1.99\%$. By the final 10 minutes, performance further declined, with actions dropping to 79.1 ± 2.93 and efficiency falling to $63.9 \pm 1.89\%$. This reduction is primarily explained by increased fatigue, decreased attentional focus, and slower decision-making speed as the game progresses.

Examining the general dynamics, the number of technical and tactical actions in the first 10 minutes was 137.1, accounting for 30% of total activity. By 20 minutes, this indicator decreased to 115.1 (26%), and by 30 minutes to 111.1 (25%). In the final 10 minutes, it fell to 87.2 (19%), indicating that activity during the game is not stable. These findings highlight the need to improve specialized training programs for young futsal players, particularly exercises that enhance resistance to fatigue, maintain attention, and support rapid technical-tactical decision-making, all of which are crucial for sustaining high game performance (Fig. 1).

Figure 1 illustrates the number of technical and tactical actions performed by U-16 local futsal players at different time intervals, compared with foreign players, along with the corresponding efficiency coefficient (EC%) in percentages. According to the analysis, local players executed 89.4 actions (27%) in the first 10 minutes. By 20 minutes, this decreased slightly to 84.5 (27%), by 30 minutes to 80.6 (24%), and in the final 10 minutes to 79.1 (24%). These results demonstrate that the number of actions performed by local young players is consistently lower than that of foreign counterparts, reflecting differences in technical-tactical activity and efficiency during match play.



Technical and Tactical Actions (TTA)

Figure 1. The dynamics of changes in the number of technical-tactical actions of foreign and local young players and the efficiency indicator in different time periods

In addition to analyzing performance over time during a single game, the study examined the dynamics of technical and tactical activity across multiple games within a round. During the 2022–2023 season, both foreign teams (Russian U-16 Championship) and Uzbek Championship teams played four matches per round. Analysis revealed that in the first game of each round, players performed approximately 450–470 technical and tactical actions, with a high efficiency coefficient (SC%) of 78%, indicating that athletes began the rounds with good physical condition, focus, and technical-tactical stability. However, as the round progressed, a gradual decline in activity was observed. By the fourth game of the round, the number of actions decreased to 430–440, accompanied by a significant drop in SC%.

These results suggest that cumulative fatigue over consecutive games contributes to a reduction in both the quantity and quality of technical-tactical actions. Additionally, the observed decline reflects a decrease in the stability of tactical decisions and coordination within the team. This emphasizes the importance of monitoring players' physical and technical-tactical condition throughout competition rounds and implementing training programs that enhance endurance, concentration, and performance consistency under repeated competitive stress (Figure 2).

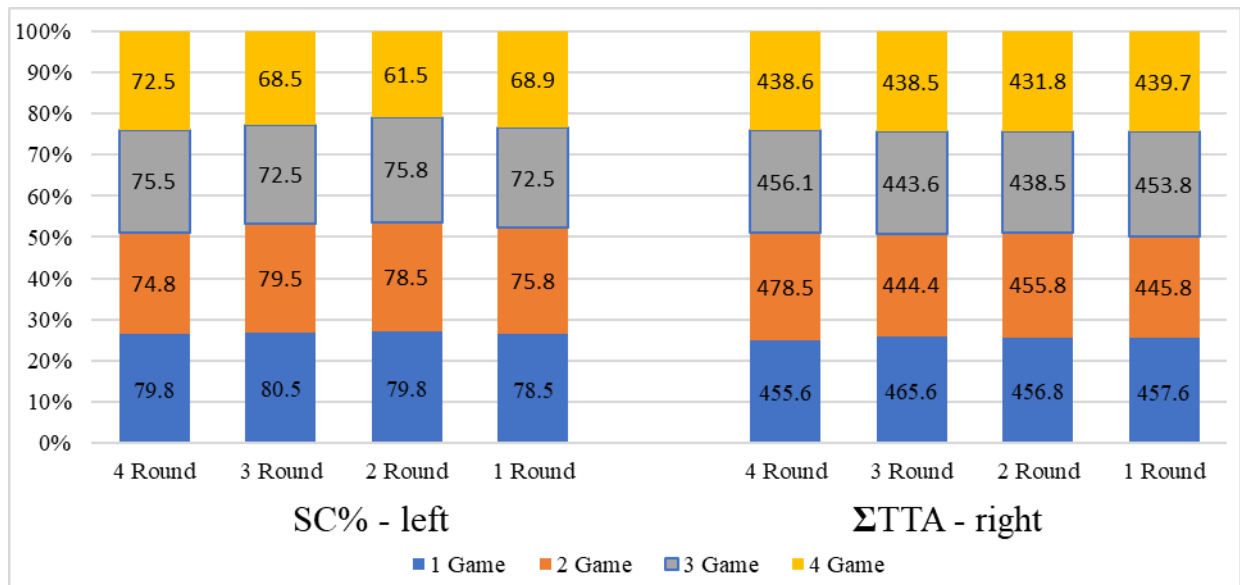
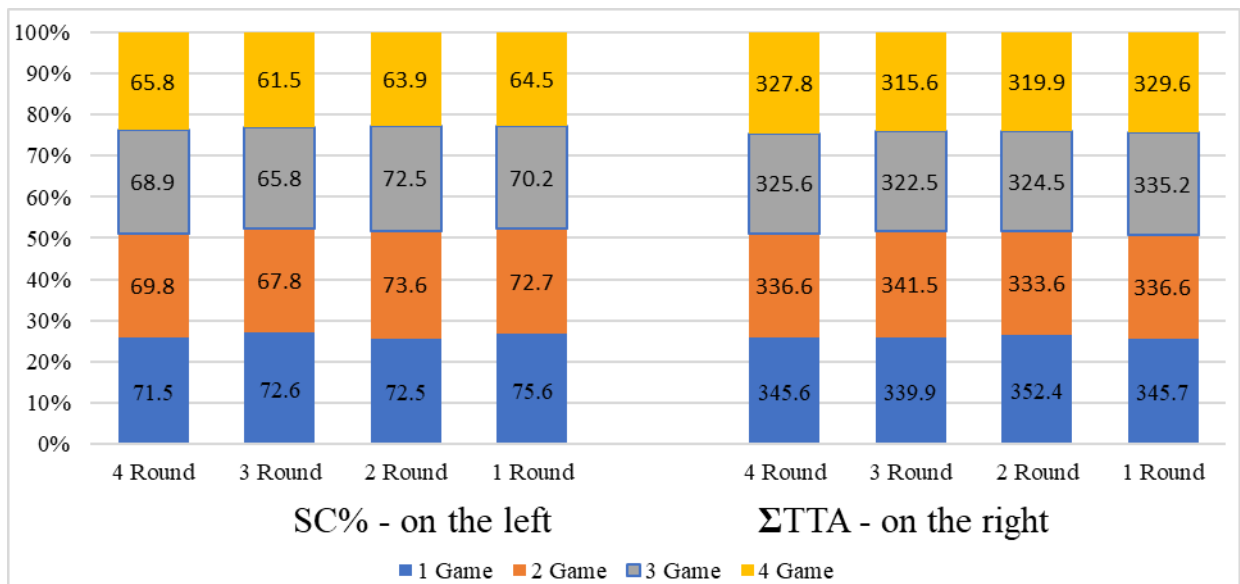


Figure 2. Dynamics of changes in technical and tactical actions of teams operating in the Russian Championship by round and match sequence

Along with analyzing foreign teams, we also tried to summarize the competitions of our U-16 futsal players in the 2022–2023 season in Figure 3.3. In particular, the first games showed high activity in the performance of team technical and tactical actions, and the indicators were high. In particular, while 340–360 TTHs were observed in the first games, this indicator decreased to 315–330 in the last games of the tour. Analysis of the SC also confirms the same changes. While high indicators were recorded in the initial stages of the competition, a negative trend was observed in the last games of the tour.



3. Figure 3. Dynamics of changes in technical and tactical actions of teams operating in the Uzbekistan Championship by round and match sequence

The analysis revealed several significant changes in the performance state of the teams. In particular, after playing multiple consecutive games, noticeable shifts were observed in the dynamics of players' technical and tactical actions. Specifically, the accumulation of physical fatigue, a decline in the quality of decision-making, and a reduction in tactical activity negatively affected the overall effectiveness of technical and tactical performance. These findings highlight the importance of monitoring both physical and cognitive load during competitive periods and implementing strategies to maintain performance consistency across successive matches.

Practical recommendations. It is recommended to systematically implement current, intermediate, and final types of control when assessing the technical and tactical preparation of young futsal players. Pedagogical monitoring should be carried out during every training session, with regular analysis of results to allow adjustments to training loads according to the athlete's current condition. Based on these assessments, individual and team training programs should be adapted to optimize development. During games, young futsal players often exhibit a decline in technical-tactical activity and efficiency due to fatigue and insufficient recovery. To address this, training and competitive loads should be individualized, and recovery mechanisms—such as active rest, massage, and oxygen therapy—should be incorporated. Functional state assessment using heart rate (HR) indicators, along with targeted rotation and load monitoring between games, is essential. The combination of pedagogical control and physiological monitoring can significantly enhance performance and ensure sustainable technical and tactical development.

Conclusion. According to the results of the analysis, the technical and tactical activity of 15–16-year-old futsal players shows a downward trend during the game. In particular, in foreign teams, the number of technical and tactical actions in the first 10 minutes was 137.1 (SC% = 80.5), while in the last 10 minutes this figure decreased to 87.2 (SC% = 61.4). The number of passes decreased from 107.1 to 64.2, and the efficiency decreased from 90.3% to 70.6%. Similar dynamics were observed in the Uzbek championship: 89.4 actions were recorded in 1–10 minutes (SC% = 72.5), and 79.1 in 31–40 minutes (SC% = 63.9). The higher performance of foreign players indicates the need to further improve the training of local young athletes. Therefore, it is an important factor to increase the level of training of participants by properly implementing various forms of pedagogical control in competitions and training.

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