

UDC 796.332:796.015.134-055

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Analysis of competitive activity and special technical readiness between football players in age of 10–12 years

Abstract. Purpose: to define the dynamics of technical preparedness and competition activity of young footballers in age 10–12.

Material and Methods: analysis and generalization of literary sources; pedagogical supervisions; instrumental method of registration of competition performance indicators; methods of mathematical statistics. In research 24 footballers took part 10–12. Playing activity was analyzed during 18 games of championship of s. Kharkiv on football. **Results:** dynamics of indicators presented by tests: dribbling, stroke counters, shot on goal, dribbling with a stroke 5 laps, juggling, hit the ball on the accuracy. **Conclusions:** it was determined that the total command of technical and tactical actions (TTA) during competitive activity increases with age. The 10-year-old young players perform per game $324,6 \pm 12,3$ TTA, at 11-years of age, the figure was $407,1 \pm 14,6$ TTA, and in 12-years – $433,2 \pm 13,8$ TTA.

Keywords: young footballers, tests, competitive activity, technical and tactical actions.

Introduction. It is known that the effective management of training and competitive process in sports is impossible without a systematic control of physical, technical and game preparedness of sportsmen [6; 7]. The main methods of such control are pedagogical control examinations (tests) which have to meet requirements of informational content, reliability and equivalence [1; 2].

Testing is one of the leading factors of a pedagogical control on which the quality of carrying out the subsequent improvement of one or another part of preparedness in football depends substantially: technical, tactical, physical, and psychological and others. It is considered that exactly technical training most determines the quality of the process of long-term preparation without diminishing a value of other parties of preparedness and understanding a need of the integrated approaches to the solution of problem points of testing in the system of pedagogical control of the level of preparedness of football players [5; 8; 9].

The efficiency of the process of preparation in modern conditions is caused by the use of means and control methods as to the instrument of management in many respects which will allow executing a feedback between a coach and a player and on this basis to increase the level of administrative decisions when training players. Taking into account it, a control of the competitive activity and technical preparedness of young football players is the actual direction in the theory and the technique of creation of the training process.

Communication of the research with scientific programs, plans, subjects. This work is performed according to a subject 2.3. "Scientifically-methodical bases of improvement of the system of training of sportsmen in football taking into account features of the competitive activity" (No. of the state registration is 0111U001722) and the initiative subject of the RW of the chair of football and hockey of Kharkov state academy of physical culture for 2011-2015 by a subject: 2.6. "Optimization of the educational and training process of football players of different qualification" (No. of the state registration is 0111U003127).

The objective of the research: to determine the dynamics of technical preparedness and competitive activity of young football players of 10-12 years old.

Research tasks:

1. To define the dynamics of indicators of technical preparedness of young football players of 10-12 years old.
2. To carry out the comparative analysis of quantitative general technical and tactical actions of players of different age (10–12 years old).

Materials and methods of the research: analysis and synthesis of references; pedagogical supervision, tool method of registration of indicators of competitive activity; methods of mathematical statistics [9].

The research was conducted on the basis of children's football club "Arsenal" in Kharkov in which 24 football players of 10-12 years old took part. The game activity was analyzed during 18 games of a team in the superiority of football of Kharkov. Testings of technical training were held four times before the first circle (in 28.08.2013), after the first circle (in 23.11.2013), before the second circle (in 27.03.2014) and after the end of the second circle (in 05.06.2014) of the superiority of football of Kharkov.

Results of the research and their discussion. Indicators of a performance of dribbling, enclosing of supports with the subsequent shot at the goal for the first year of researches from 10 till 11 years old didn't have statistically significant differences ($p > 0,05$), at the same time as the reliable differences are in the subsequent age piece from 11 to 12 years old, ($t=2,13$; $p < 0,05$) (tab. 1, tab. 2).

In a bigger measure the training process of young football players affected the dynamics of indicators of dribbling with enclosing of 5 circles which changed annually, especially it concerns the first year of researches (from 10 to 11 years old ($t=5,82$; $p < 0,001$) (tab. 2).

The same dynamics is traced in *juggling by a ball*. Indicators improve authentically with age. At the age of 11 years old in comparison with young football players of 10 years old the quantity of juggling increased by 5,9 kicks ($t_{1,2}=0,80$) ($p > 0,05$), from 11 till 12 years old on 17,3 kicks ($t_{2,3}=2,37$; $p < 0,05$) (tab. 3).

Near it, indicators of a kick to a ball have positive dynamics on accuracy, but their changes are not considerable and doubtful ($p > 0,05$) (tab. 4)

Quantitative team indicators. Results of the conducted researches are presented in tab. 5.

The total stops of a ball during games increases with the age from 10 till 12 years old (tab. 5). So, if the average quantity

Table 1

The comparative analysis of indicators of special technical preparedness of football players of 10-12 years old (n=24)

№	Control exercise (test)	Age of sportsmen, years old:		
		10	11	12
		$\bar{X}_1 \pm m_1$	$\bar{X}_2 \pm m_2$	$\bar{X}_3 \pm m_3$
1.	Dribbling, enclosing of supports, a shot at the goal, s	8,1±0,34	7,3±0,31	6,7±0,21
2.	Dribbling with enclosing of supports of 5 circles, s	0,41±0,03	0,62±0,02	0,81±0,06
3.	Juggling (quantity of times for 45 s)	35,3±4,57	41,2±5,61	58,5±4,65
4.	Kick of a ball on the accuracy (quantity of hits)	2,2±0,36	2,55±0,48	2,85±0,42

Table 2

Matrix of statistical reliability of special technical preparedness of football players of 10-12 years old (n=24)

Age	10		11		12	
	t	p	t	p	t	p
10	–		1–1,73 2–5,82	1>0,05 2<0,001	1–3,05 2–6,32	1–<0,01 2–<0,001
11	–	–	–		1–2,13 2–3,01	1–<0,05 2–<0,01

Notes. 1 – maintaining, enclosing of supports, shot at the goal; 2 – dexterity of ball handling.

Table 3

Matrix of statistical reliability of indicators of juggling of football players of 10-12 years old

Age	10		11		12	
	t	p	t	p	t	p
10	–		0,80	>0,05	3,55	<0,001
11	–	–	–		2,37	<0,05
12	–	–	–	–	–	

Table 4

Matrix of statistical reliability of indicators of a kick on the accuracy of football players of 10-12 years

Age	10		11		12	
	t	p	t	p	t	p
10	–		0,61	>0,05	1,25	>0,05
11	–	–	–		0,47	>0,05
12	–	–	–	–	–	

of stops of a ball by team players in 10-years-old age makes 77,4±11,3 for a game, in 11 years old – this indicator makes already 94,2±14,7 that is on 22,2% more, and at the age of 12 years old this indicator increased till 118,3±12,4 which gain put 25% in compared from 11-years-old (tab. 5). It should be noted that results of a reception of a ball have authentically the lowest indicators (t=2,5; p>0,05) in comparison between 10 and 12 years old football players (tab. 5).

Similar dynamics is traced when performing short passes forward (tab. 5). So, if sportsmen in 10 years old use 61,1±5,6 short passes forward on average for a game, already this indicator made 71,2±6,2 in 11 years old, and it increased to 85,4±7,3 in 12 years old. Thus the gain in passes forward has reliable differences between 10 and 12 years old football players (t=2,50; p>0,05).

The tendency to increase is stored when performing average passes back, across and forward by football players of 10-12 years old (tab. 5). So, football players of 10 years old use on average for a game 8,5±2,2 of passes back and across a field, 7,3±3,6 – passes forward, in 11 years old – 9,3±2,7 – passes back and across a field, 12,3±2,5 – passes forward, however in 12 years old – 11,2±3,1 – passes back and across, 13,8±2,9 – passes forward (tab. 5).

The analysis of a performance of long passes back, across and forward from 10 to 12 years old showed the essential increase to a number of these technical actions in the competitive practice of young football players (tab. 5). So, the average quantity of passes back and across a field at football players of 10 years old makes 0,8±0,22 on average for a game, in 11 years old this indicator increased to 2,3±0,73, and in 12 years old – 5,2±1,8. Results of use of long passes forward make 0,6±0,25 on average for a game at sportsmen of 10 years old, in 11 years – 1,1±0,21, and this indicator makes 3,2±1,21 in 12 years old.

The analysis of the results received when performing long passes back and across, found out that young football players of 12 years old carry out these passes in comparison from 10 years old authentically more (t=2,42; p>0,05) (tab. 5).

The quantity of enclosing of the rival on average for a game increases and makes – 12,2±4,5 in 10 years old, in 11 years

Table 5

Team quantitative indicators of the competitive activity of young football players from 10 till 12 years old, 18 games (n=24)

№	Technical-tactical actions	10 years old (n=8)	11 years old (n=8)	12 years old (n=8)	P _{1,2}	P _{2,3}	P _{1,3}
		$\bar{X}_1 \pm m_1$	$\bar{X}_2 \pm m_2$	$\bar{X}_3 \pm m_3$			
1.	Reception of a ball	77,42±11,3	94,2±14,7	118,3±12,4	>0,05	>0,05	<0,05
2.	Short passes back and across a field	54,3±4,7	52,7±4,5	51,2±4,3	>0,05	>0,05	>0,05
3.	Short passes forward	61,1±5,6	71,2±6,2	85,4±7,3	>0,05	>0,05	<0,05
4.	Short passes	115,4±12,5	123,9±15,34	136,6±16,4	>0,05	>0,05	>0,05
5.	Average passes back and across	7,3±3,6	9,3±2,7	11,2±3,1	>0,05	>0,05	>0,05
6.	Average passes forward	8,5±2,2	12,3±2,5	13,8±2,9	>0,05	>0,05	>0,05
7.	Average passes	15,8±1,3	21,6±3,4	25,3±4,2	>0,05	>0,05	>0,05
8.	Long passes back, across	0,8±0,22	2,3±0,73	5,2±1,8	>0,05	>0,05	<0,05
9.	Long passes forward	0,6±0,25	1,1±0,21	3,2±1,21	>0,05	>0,05	>0,05
10.	Long passes	1,4±0,5	3,3±1,1	8,4±2,3	>0,05	>0,05	<0,05
11.	Dribbling	71,1±7,1	68,3±5,7	55,2±5,1	>0,05	>0,05	>0,05
12.	Interception, single combats, selection	78,2±5,2	69,1±4,8	61,1±4,3	>0,05	>0,05	<0,05
13.	Enclosing	12,2±4,5	15,9±3,6	19,4±4,8	>0,05	>0,05	>0,05
14.	Shots by a foot at the goal	7,3±1,5	8,4±1,8	9,3±1,9	>0,05	>0,05	>0,05
15.	Shots by a head at the goal	0,3±0,02	0,8±0,07	1,4±0,9	<0,01	<0,01	<0,01
	In total	324,6±12,3	407,1±14,6	433,2±13,8	<0,01	>0,05	<0,01

old this indicator increased to 15,9±3,6 for a game, and in 12 years it made 19,4±4,8, but these changes weren't reliable.

The number of performance of shots at the goal by a foot and a head is increased (tab. 5). So, in 10 years old the indicator makes: shots at the goal by a foot – 7,3±1,50, shots at goal by a head – 3±0,02; in 11 years old these indicators increased to 8,4±1,8 – shots at the goal by a foot and 0,8±0,07 – shots at the goal by a head.

It should be noted that with the age the number of performance of kicks to a ball by a head authentically increases between football players of 10 and 11 years old ($t=6,86$; $p>0,01$), between 11 and 12 years old ($t=5,26$; $p>0,01$), between 10 and 12 years old ($t=11,93$; $p>0,01$) (tab. 5).

However, despite of a positive increase in the specified indicators, among total of TTA there are receptions which tend to deterioration at football players of 10-12 years old. They are first of all short passes back and across a field and maintaining. In our opinion and on the basis of the made by us observations the percentage ratio of number of these receptions decreases with age.

So, the analysis of average values of quantity of short passes back and across during the competitive activity showed that young football players at the age of 10 years old carry out on average for a game: passes back and across – 54,3±4,7, in 11 years old this indicator makes 52,7±4,5, however in 12 years old – 51,2±4,3. The same tendency is observed and when using dribbling on average for a game (tab. 5). So, for example, this indicator makes 71,1±7,1 in 10 years old, in 11 years old – 68,3±5,7, and it decreased to 55,2±5,1 in 12 years old.

The similar dynamics is traced in single combats. So, football players of 10 years old carry out 78,2±5,2 single combats on average for a game, in 11 years old – 69,1±4,8, and in 12 years old – 61,1±4,3.

It should be noted that football players of 10 years old carry out authentically more single combats for a ball in comparison from sportsmen of 12-years old ($t=2,53$; $p>0,05$) (tab. 5).

The analysis of total amount of team technical and tactical actions during the competitive activity showed that this indicator increases with age (tab. 5). So, in young football players of 10 years old carry out 324,6±12,3 TTA on average for a game, this indicator made 407,1±14,6 in 11 years old age, and in 12 years old – 433,2±13,8. Thus, young football players of 11 years old in comparison from 10 years old have authentically the highest results ($t=4,32$; $p>0,01$). Also young football players of 12 years old have still big quantitative indices in comparison with 10 years old from a total of TTA for a game ($t=5,87$; $p>0,01$).

Conclusions:

1. Quantitative indicators of technical preparedness of young football players increase every year. So, indicators of “enclosing of supports with the subsequent shot at the goal” improved on 0,8 s ($t=2,13$; $p<0,05$) from 11 till 12 years old, “dribbling with enclosing of 5 circles” from 10 till 11 years old on 0,21 s ($t=5,82$; $p<0,001$), “in juggling by a ball” from 11 till 12 years old on 17,3 kicks ($t=2,37$; $p<0,05$).

2. Total amount of the team technical and tactical actions (TTA) increases with age during the competitive activity. Young football players at the age of 10 years old carry out 324,6±12,3 TTA on average for a game ($p>0,05$), this indicator made 407,1±14,6 TTA in 11 years old age ($p<0,01$), and in 12 years old – 433,2±13,8 TTA ($p>0,05$).

Prospects of the subsequent researches: the definition of competitive characteristics according to each role from 10 till 12 years old.

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Received: 20.09.2015.

Published: 31.10.2015.

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