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## ATTEMPT TO ESTIMATE SPECIAL SKILLS LEVEL IN 10-13-YEAR-OLD FOOTBALL PLAYERS

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### Key words:

- soccer,
- quickness,
- test,
- technique.

### Abstract:

Special skills in football are indicators of sports level and technical aptitudes of individual players. Verification of football abilities is carried out with the help of special skills tests, which contain elements occurring in the match, such as accuracy of crossing the ball, turnabouts with the ball, passing and receiving the ball and dribbling variants.

The purpose of the study was to determine the current level of technical potential of young football players in relation to worldwide standards.

The tests were undergone by 57 players of MKS Cracovia Krakow, aged 10-13 years. The battery of 6 The FA Soccer Star Challenge tests was used as recommended by English Football Association to assess technique level.

The 13-year-old group performed rapid-technical tasks the quickest and were the most numerous to receive 5-star rating (scale 1-6). Furthermore, the overall level of special skills was observed to decrease inversely in proportion to age. The exception is head and left foot shooting as the highest values were obtained by the youngest individuals.

As a result of research it might be concluded that the players represent a good level of technical preparation - 94% of boys received four or five stars. None of the players gained the highest mark in the test, what confirms its difficulty. The largest disparities were recorded in the efficiency performance of left and right leg in all players. Further study over incoming years would be reliable material for forecasting technical enhancement.

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### INTRODUCTION

Human motor agility is an essential requirement in each sports games which is the base to shape and realize deliberate training plans and aims therein. Basic indicators of motor abilities as quickness, strength and endurance are in need of systematic development and high-level sustaining to acquire expected performance level. Special skills are orientated towards particular movements and execution manner in all sports [12]. They are considered as equivalent of performance and technical abilities level in individuals what diversify while competing during a football match. Additionally, special skills and general skills are accurately correlated and this phenomenon is being found often in the results of various tests in team sports players, e.g. in footballers [14]. One of the components of agility is deftness as coordinative motor abilities which are further defined as system aptitude to quick run-start, run-stop, velocity and run direction change as fluid and precise as possible [2].

Football is a team sport in which players are demanded to fulfill match tasks and purposes by open habits adjusted to opponent's proceeding [6] thus special skills are crucial and are taught and refined generally over the long-time periodization to reach high ceiling. As a leading-edge discipline, football attracts audience attention through excellent sports performance [11]. Elite individuals are marked with perfect special skills and ability to extract them as long as match full-time what may influence final result. On the grounds of above-mentioned conditionings, number of coaches evaluate sports level of children and adolescents in their clubs and academies to estimate putative young footballers advance [5]. The most frequent special skills tests use motion tasks that are related to match situations, e.g. foot-pass accuracy, turnabouts with the ball, passes and receive moments, and down-the-line or slalom dribbling.

Football selection is inseparable with special skills as by using special skills tests, coach is capable of assessing up-to-date level and lacks of particular athletes. Outcomes taken from trials are supposed to be a base in process of appropriate training plan creation for young groups consulting different difficulty periods diversification along training cycle. Huge number of scientific publications refers to motor abilities testing in football players [4, 13, 16] omitting special skills tests which are conducted among youths and adults. As players undergo trials in the entire world to be selected, this fact attests their significance and credibility. All test results are recorded and stored, used in longitudinal research to compare with followings in football academies but most of them are not published. In many cases of research, tests are analysis-formed and constructed from selected and most commonly used technical elements and obviously are normalized and conditions-achieving in order to be verifiable. In general, tests are required to be:

- standardized (equivalent performance conditions)
- accurate (analyze of elements taken into account)
- reliable (minimal statistical error)
- selective (relatively difficult)
- available (possible to perform without elaborate equipment)

Employment, development and improvement of special skills tests are necessary to increase training methods effect in youths. All tests are desirable to imitate competition actions and motion fragments as related to defined modules [1]. Reilly et al. [10] claim that there is possibility to succeed in football regardless moderate physical conditions but one needs to be highly-skilled technical talent.

Significant qualifications that are supposed to be an indicator of football prosperity and elite classification are technical elements as dribbling, short passes, one on one situations, shots. It may be contended a player performance in each match is determined by special skills [9].

## **AIM OF THE WORK**

The main aim of this research was to assess actual level of technical abilities in young polish football players and endeavor to compare with preordained worldwide norms. As our work is pilot one, obtained results are considered to compose the base to conduct constant tests in the same groups of young athletes in order to reveal complex image of special skills alternation as long as senior football advance.

## **THE MATERIAL AND THE METHODOLOGY**

57 football players from MKS Cracovia Krakow participated in research divided into 3 groups: U13 (born in 2000), U11 (born in 2002) and U10 (born in 2003). The most numerous group was the youngest (22), while other were similar (18 and 17 in the oldest). Players from U13 are being kept in training for averagely 5.5 years, while U11 for 3.5 years

and U10 for 2.5 years. In this season, all of groups are in training regime of 3 sessions a week and participate in young league competitions.

In our work The FA Soccer Star Challenge test was conducted that is recommended by The Football Association in the United Kingdom as an assessment tool of special skills. Participants were asked to perform 5 trials with a ball and 1 trial without the ball which were rewarded with ranking points. Points sum was then converted to “stars” in 1-6 scale (1-very low, 6-superb).

Technique of test battery performance was as followed [7]:

- Dribbling down-the-line as far as 27.43m (30 yards) with any foot, last 18.29m segment might be finished with pass – performance time measurement
- 9 turnabouts with a ball alternating 3 different ways of turnabouts in shuttle run (segment 4.57m) – performance time measurement
- Slalom dribbling – performance time measurement
- Head shooting as ball is thrown – successful shot converted to points
- Left and right foot shooting – successful shot converted to points
- Slalom run without the ball - performance time measurement

To elicit objective of precise mensuration, MICROGATE (model FtC3) photocell was applied during tests.

Outcomes received in all experiments were converted to points and summarized. Each footballer was assigned with amount of “stars” according to scored points. Furthermore, basic statistical analysis was employed and special skills test-to-test correlation coefficient was calculated.

## **RESULTS**

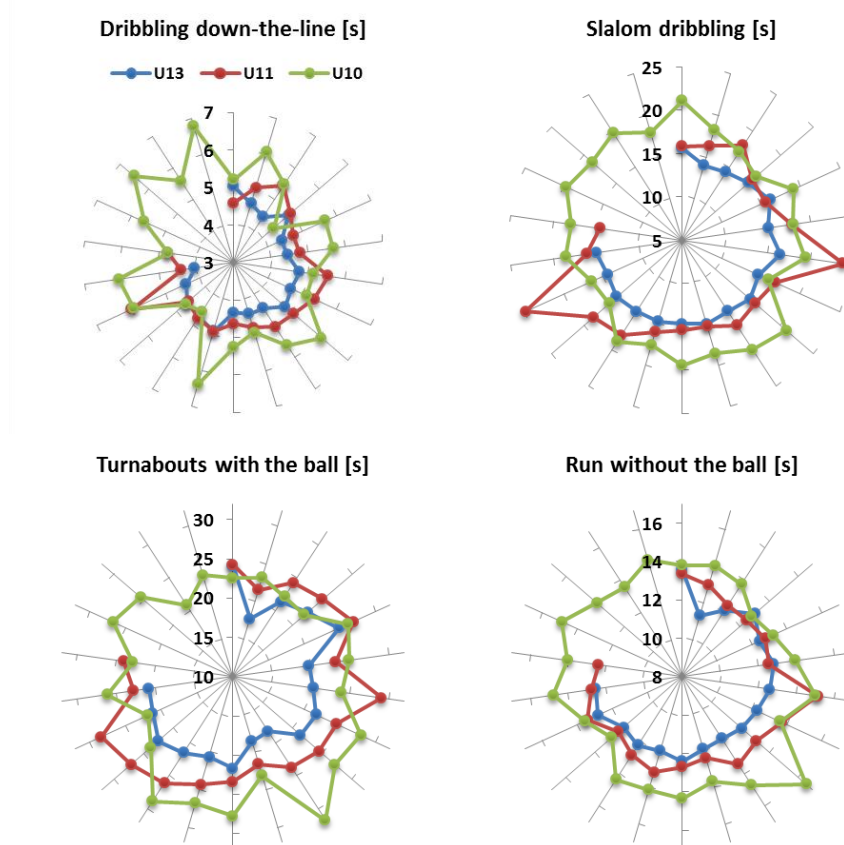
Special skills test results were averaged and presented in table 1. Extracting from all groups, 13 years old players needed the shortest time ( $4.59s \pm 0.25$ ) to dribble the ball down-the-line (27.43m segment), with the group times range of 0.98s. Identical phenomena were noticed in turnabouts with the ball, slalom dribbling and run without the ball (figure 1). In all those trials U13 group acquired mean time respectively 21.22s, 15.03s, 12.36s, standard deviation 1.89, 0.62, 0.52, while minimal and maximal result differences were 7.19s, 2.46s, 2.25s. The longest time to perform and ultimate other values were presented by U10 group excepting slalom dribbling, in which U11 showed the upmost SD value.

In shooting on goal tasks with a head and left leg, the top values were reached by the youngest players (averagely 2.27pts and 3.23pts respectively, while in addition in left leg shooting utmost  $SD=2.65$  was noticed). Close unsteadiness ( $SD=2.83$ ) was shown by the oldest players (U13) in right foot shooting trial regardless the top efficiency 4.41pts.

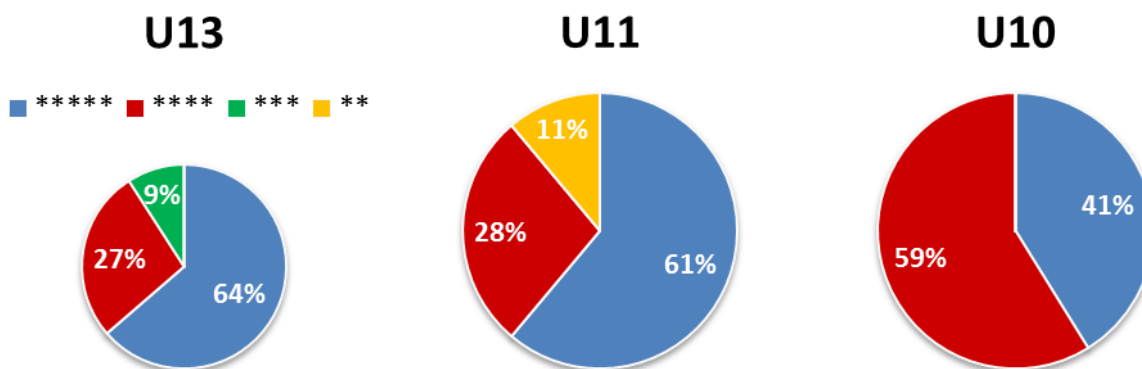
Variability coefficient calculated from all tests battery results indicates large variety in head shooting in 11-year-olds and left-right foot shooting in all players who underwent research. Ultimate variability was revealed in U13 and U11 boys while performing left foot shooting (122% and 106%), and nearly equal level is measurable in right foot shooting task in all participants (64% and 70%).

**Table 1.** Basic statistical values of all The FA Soccer Star Challenge tests in U13, U11 and U10.

GROUP		DRIBBLING DOWN-THE-LINE [s]	TURNAOUTS WITH THE BALL [s]	SLALOM DRIBBLING [s]	HEAD SHOOTING ON GOAL [pts]	RIGHT FOOT SHOOTING ON GOAL [pts]	LEFT FOOT SHOOTING ON GOAL [pts]	RUN WITHOUT THE BALL [s]
U13	$\bar{X}$	4.59	21.11	15.03	2.18	4.41	2.24	12.36
U11		4.97	24.71	17.32	1.50	4.00	1.89	13.00
U10		5.53	24.97	18.46	2.27	2.95	3.23	14.09
U13	SD	0.25	1.89	0.62	0.73	2.83	2.51	0.52
U11		0.40	2.10	2.77	0.99	2.57	2.00	0.67
U10		0.65	2.73	1.46	0.88	2.06	2.65	0.81
U13	R	0.98	7.19	2.46	2	8	8	2.25
U11		1.57	7.58	10.24	3	8	6	2.75
U10		2.38	10.90	5.15	3	7	9	3.76
U13	Vs (%)	6	9	4	33	64	112	4
U11		8	9	16	66	64	106	5
U10		12	11	8	39	70	82	6



**Figure 1.** Outcomes distribution of particular players in group U13, U11 and U10 in trials: dribbling down-the-line, slalom dribbling, turnabouts with the ball and run without the ball



**Figure 2.** Groups diversification taking number of “stars” into consideration (special skills coefficient)

Summarized points from all tests were converted to “stars” that reveal actual special skills position of each footballer. Figure 2 shows percentage range of all participants in their age groups consulting sports form. The largest amount of “5-star” players was in U13 group (64%) and decreases inversely in proportion to age. Contrary phenomenon is observed in “4-stars” players, in whom the top number was in U10 (59%). Furthermore, 9% in U13 and 11% in U11 were low-skilled “2 to 3-stars” footballers.

Correlation analysis executed between all tests from The FA Soccer Star Challenge battery (table 2) proved statistically significant ( $p < 0.01$ ) positive relation between turnabouts with the ball and run without the ball (U13), dribbling down-the-line and slalom dribbling (U11), turnabouts with the ball and slalom dribbling (U11), slalom dribbling and run without the ball (U10). Negative correlation was found between right and left foot shooting (U13), dribbling down-the-line and right foot shooting (U11). All cases correlation was estimated at the level of 0.62 to 0.74.

**Table 2.** Correlation coefficient values between all tests of The FA Soccer Star Challenge

GROUP	A-B	A-C	A-D	A-E	A-F	A-G	B-C
U13	0.24	0.20	0.13	-0.31	0.27	0.20	0.49
U11	0.46	0.73*	-0.31	-0.67*	-0.17	0.51	0.74*
U10	0.09	0.18	0.39	0.19	0.12	0.36	0.27
	B-D	B-E	B-F	B-G	C-D	C-E	C-F
U13	-0.38	-0.51	0.07	0.62*	0.05	-0.44	-0.06
U11	-0.42	-0.33	-0.46	0.49	-0.55	-0.56	-0.39
U10	-0.30	0.17	-0.08	0.46	-0.22	0.09	0.15
	C-G	D-E	D-F	D-G	E-F	E-G	F-G
U13	0.47	-0.01	0.18	-0.12	-0.64*	-0.47	0.03
U11	0.59	0.16	0.27	-0.09	0.11	-0.24	-0.18
U10	0.63*	0.24	-0.07	-0.22	0.29	0.10	0.02

A – Dribbling down-the-line, B – Turnabouts with the ball, C – Slalom dribbling, D – Head shooting on goal, E – Right foot shooting on goal, F – Left foot shooting on goal, G – Run without the ball

\*  $p < 0.01$

## CONCLUSIONS

Motor abilities and special skills testing process in football players is systematically executed by coaches at all training levels from children till seniors. Tests outcomes are the first step to build training plan adjusted to actual technical-tactical state of the team. As there are not many scientific publications created of club resources it seems to be difficult

to compare similar age groups in different regions and countries. Rarely, it may be found that football journals publish some of records but it does not contribute to matter-of-fact scientific knowledge enhancement [15]. Therefore, football literature requires extension as its application value might be inestimable. In all probability, it may increase training methods effectiveness and deepen learning on youths *special skills* teaching.

As research was conducted, it may be claimed that MKS Cracovia Krakow players are medium-to-high skilled as we consider special competence. Only 4% of all who took part in study obtained “2-stars” mark (in 6-grade scale) and 2% obtained “3-stars”. The rest of 94% players was highly-skilled at “4 and 5-stars” level what seems to predestinate them to practice competitive sport in future. However, none of 57 children received “6-stars” that is nearly the same as in The FA research in which 1% had maximal grade. All names the best evaluated are published on The FA Website [18] as they were caps of youth and senior national teams: Michael Bridges, Michael Carrick, John Curtis, Matthew Etherington, Jonathan Greening, Jon Harley, Matthew Upson and Paolo Vernazza.

The oldest players of research (U13) performed quickness tasks with the ball and without the ball in the shortest time of all 3 groups. Its explanation might be the fact, that 12-15 age is equal 75-100% of coordinative motor abilities [8] what influences ball control, dribbling precise and adjustment of run speed to lower limbs action performance. It was noticed as well, there is strong relation of effectiveness of motion task process that is revealed by statistically significant value of correlation coefficient ( $r=0.62$ ) between turnabouts with the ball and run without the ball. Positive dependence of those tests was observed in all 3 groups. Furthermore, correlation of run without the ball test and slalom dribbling test ( $r=0.47$  in U13) seems to confirm results elicited in 12-19 years old players ( $r=0.38$ ) submitted for similar trials by Huijgen et al. [3].

Oppositely, negative relation was verified between right and left foot shooting on goal in U11 and U13 group ( $r= -0.67$  and  $r= -0.31$  respectively) what indicates large disproportion in the level of right-to-left foot tasks performance. That is approximate to Witkowski and Ljach [17] who examined 13-14 years old players from Silesia Training Centre of Polish Football Association and Interscholastic Sports and Leisure Centre in Bochnia, Lesser Poland. In their study, ultimate asymmetry was found in precise crossing (25-60%) and lesser in internal foot-arch passing (30-40%).

In general, referring to present-day level of special skills presented by U13, U11 and U10 participant of the study it may be contended that progressive development is shown with the age. Though, data are not comprehensive to predict and prognosticate player chance to achieve world class. Regardless of “6-star” player lack among 57 children, it is optimistic that the older footballers are the more per cents of “5-stars” ones are in group. Due studies during incoming years are supposed to show stabilization, progression or regression in development in the same groups what should help to estimate senior football vista.

As there is insufficient number of scientific articles on special skills in football players, authors are not able to compare results of this study to wider amount of papers. Thus, as this problem exists it is important to conduct consecutive research.

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