

13 - THE CHANGES IN MOTOR PERFORMANCE AFTER ONE-YEAR SOCCER PRE-PREPARATION IN 10-11 YEAR OLD BOYS

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INTRODUCTION

Sport preparation in children is the special domain of sport training, that has preparatory character and create the basis for further sport (PERIČ, 2004), for progressive and systematic development of young organism following anatomical, physiological and psychological individualities of growing organism (MORAVEC, 2007). It is long-term specialized increase of performance in accord with convenience of children's growth and evolution (WEINECK, 2000, MALINA, 2001, TONKS, 2001, KAČÁNI, 2005, ISRAEL, EISSMANN, 2007), with use of chosen methodical-organizational form in interdependence of aim preparation period (PERÁČEK et al., 2004) and with accent of educational plan of pupil's game performance improvement and in content eventuality.

The content of sport training in children should comprise activities that offer adequate space for improvisation development and game tasks and situations solution. LIČKA, MAGNUSEK (2006) in their motivating pyramid (for aims efficiency achievement of young player) are presenting, besides others, also technique improvement and sense for ball, development of coordination and conditional abilities. The period of sport familiarization is a starting phase of sport training and should fulfill many tasks like creation of general motor basis for particular sport kind. The content of training represents general exercises, low intensity exercises, varied and emotional games and competitions. There is irrational that children bother by learning different tactic variants. In soccer there are determined motor abilities not only conditional but also coordination (HOLIENKA, 2003). These general preconditions are determined for soccer skills acquirement like special preconditions for sport activity.

The population in age from 6 to 11 years can complete the period of sport pre-preparation that is perceived like part of further player's long-term sport preparation that is requires creation of ideal training conditions already during teaching process in school physical education lessons. Evaluation and evaluating tests of general motor performance are becoming as part of each work. In diagnosis there are accepted more-level tests system, for example there is used EUROFIT test battery for different skills evaluation (THOMAS, NELSON, 2001).

The aim of research was effect verification of two six-months training programs to changes of selected motor abilities in 10-11 years old boys from Libya. We wanted to enlarge the knowledge about sport pre-preparation influence of boys in soccer within the bounce of school sport club.

H1: **We assumed** that effect of two 6-months training programs for boys will display differential on selected motor abilities development.

H2: **We assumed** that 11 years old boys will present higher increase of performance in particular tests of motor abilities than 10 years old boys.

Pedagogical experiment with 10-11 years old boys in number of 24 and effect verification of two experimental training programs consisted:

1. From formation of experimental training program that was divided to two 6-months programs, where first was aimed to general motor development with dominance of basic exercises for children, motor education and work with ball, for explosive strength of lower limbs development, for speed reaction and flexibility changes.
 - Dominant in second 6-month period of training program were small soccer games for coordination improvement and sense for ball skills.
2. From experimental program realization in duration of 2 times of 6-months in group of 10-11 years old boys, in weekly frequency of 2 training lessons within the bounce of school sport club.
3. From realization of pre, continuous and post testing in all monitored indicators and from changes comparison that came up after finishing first and second 6-month training period.
4. From changes comparison at the level of adopted performance in monitored tests and from increases largeness between 10 and 11 years old boys.
5. From contribution evaluation of verified one yearlong training program in relation to particular age category.

TESTING METHODS

State and changes assessment of selected motor abilities we made through results from three motor tests of general motor performance and three specific exercises:

• **Shuttle run 4 x 10 m test** (seconds), speed indicator (4x10m)

• **Standing broad jump** (centimeters), explosive strength of lower limbs indicator (jump)

• **Sit and reach test** (centimeters), spine flexibility indicator (sit and reach). When fingers touch the leg toes it is value of 50 points. When fingers exceed the toes you add cm, if fingers do not reach the toes than you deduct cm.

• **Kick for shooting precision**, spatial-orientation ability (shooting). With this test we were registering the shooting precision from 8 meters distance into the marked squares (5 x 2,5 m) where each square had own value. 3 times with right leg, and then 3 times with left leg and attempt with higher score was record. The maximum of achieved points was 10.

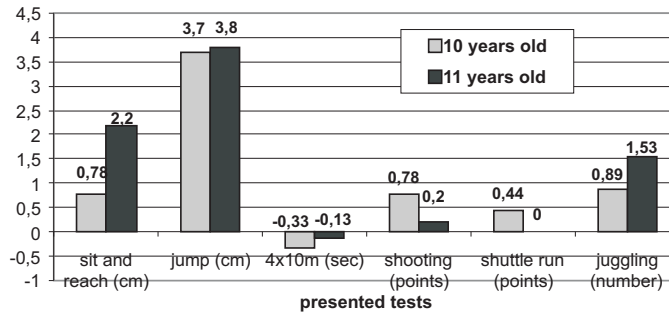
• **Juggling with ball**, kinesthetic-differential ability indicator (juggling). In square 5 x 5 meters boy is randomly kicking off the ball (juggling) and ball cannot touch the floor or boy cannot leave the testing square. Test is repeated three times and the best attempt is registered where numbers of successful kicks off are recorded.

• **Shuttle run with ball completed by goal shooting**, ability of movements unification indicator (shuttle run). Five marks in one line, one-meter distance between each other. Pupil is performing shuttle run between marks leading the ball until the last shooting mark, which is eight meters distant from goal. From that distance pupil is shooting the ball into the goal, which is wide

one and half meter. Each pupil has three attempts and for each successful shot obtains one point. Maximum are three points.

RESULTS AND DISCUSSION

We found out, that first 6-month training program realized in group of 10-11 years old boys influenced the changes of motor performance, that were expressed in performance between pre testing (September 2007) and continuous testing (February 2008) in each test. Statistically significant changes were only in sit and reach test (from 2,1 to 3,7 cm in average), jump test (from 123,8 to 127,6 cm in average) and juggling (from 2,7 to 4 attempts in average). When we evaluate the average increases in performance of each tests we confirmed hypothesis 2 in tests of general motor performance and in juggling what means that smaller increase of performance came in group 10 years old boys than in group of 11 years old boys (figure 1). Figure 1 Increase of performance after 1st 6-months training program (average value)



Successfulness of performance improvement expressed by pupils' percentage indicates that 1st training program contributed to more significant improvement particularly in jump and juggling performance (table 1). Training process supported the speed ability development only by small degree (4x10 m) and ability of movement's unification (shuttle run). Lot of boys in each test presented also performance decrease that was expressed in final average performance increase.

Table 1 Successfulness of performance improvement in tests (% 10 – 11 years old boys)

Change of performance	Sit and reach	Jump	4 x 10m	Shooting	Shuttle run	Juggling
Increase	66,7	83,3	50,0	54,2	45,8	75,0
Stagnation	4,1	4,2	20,8	12,5	16,7	8,3
Decrease	29,2	12,5	29,2	33,3	37,5	16,7

More detailed analyze showed that in sit and reach test, 3 boys from group of 10 years old and 4 boys from group of 11 years old didn't fulfill physiological norm (couldn't touch their toes by fingers). Even scientific knowledge shows (MĚKOTA, NOVOSAD, 2005) that boys in age between 10 to 12 their yearly increase in standing broad jump is 18 cm, increase in our group of boys were much more smaller (about 3,7 – 3,8 cm in average) (Fig. 1). Span of variance was created by values 97 and 150 cm what document big individual differences in performance among boys. Neither after 6-month training didn't come to such big performance increase that should meant, for example, bringing closer to Slovak population performance.

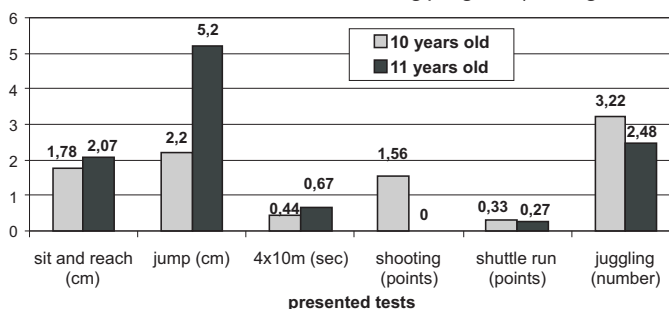
In ability of movements unification (shuttle run) almost half of the group already by the pre test could achieved full score of 3 point, by continuous testing none one boy didn't make 0 points, but performance changes were not with big increase (Fig. 1). There were showed that successfully improved ability was kinesthetic-differential (test – juggling), where by continuous testing we could observe statistically significant increase at 1% of significance and by 75% of boys arise performance increase (table 1).

During the training process in first 6-month program came to uneven motor abilities development and the order from more successful to less successful in dynamic of development is demonstrated in table 2. In comparison of order motor abilities development after completing second 6-month program we see tiny differences between first and second as well as between fifth and sixth motor ability what with we confirmed hypothesis 1.

Table 2 Development of motor abilities

The order of motor abilities development First 6-month training program	The order of motor abilities development Second 6-month training program
Explosive strength of lower limbs	Kinesthetic-differential ability
Kinesthetic-differential ability	Explosive strength of lower limbs
Spine flexibility	Spine flexibility
Spatial-orientation ability	Spatial-orientation ability
Speed ability	Ability of movements unification
Ability of movements unification	Speed ability

Figure 2 Performance increase after second 6-month training program (average values)



In evaluation of performance after second 6-month training program we can express similar statement of changes, what meant that from continuous to post testing the performance were increase in all tested indicators, but changes in tests shooting and shuttle run were not statistically significant. Performance increase in 11 years old group of boys were higher than in 10 years old group of boys in sit and reach test, jump test and 4x10 meters run test, where in these motor abilities hypothesis 2 was confirmed (figure 2)

More significant successfulness of performance increase was appeared in test juggling (95,8% of boys) and the smaller percentage of increase was in 4x10 meters shuttle run (table 3). Positive was the small percentage of boys with performance decrease in different tests.

Table 3 Successfulness of performance increase in different test (% 10–11 years old boys)

Change of performance	Sit and reach	Jump	4 x 10m	Shooting	Shuttle run	Juggling
Increase	70,8	79,2	45,8	54,2	50,0	95,8
Stagnation	12,5	4,2	45,8	8,3	33,3	0
Decrease	16,7	16,6	8,4	37,5	16,7	4,2

In experimental group of 10-11 years old boys came to statistically significant increase of performance after both 6-month training programs at 1% level of significance in all indicators, but bigger average increase in performance was after second training period (table 4).

Table 4 Performance changes in 10-11 years old boys during whole year of training process

Test indicator	Pre-testing	Continuous	Post-testing
Sit and reach (cm)	52,1	53,7**	55,7**
Standing broad jump (cm)	123,8	127,6**	131,8**
Shuttle run 4 x 10 m (seconds)	12,17	11,96	11,38**
Kick for shooting precision (points)	5,96	6,37	7,04**
Shuttle run with ball (points)	2,2	2,4	2,7**
Juggling with ball (number)	2,7	4,0**	6,7**

To whole yearlong performance increase had contributed equally first as well as second training period in indicators of spine flexibility, explosive strength of lower limbs and kinesthetic-differential ability examined by juggling test.

Presenting results are crucial to knowledge creation, that training program aimed more to coordination development (spatial-orientation ability, ability of movements unification, kinesthetic-differential ability) what represented mainly content of second training program. That contributed to more significant performance increase in indicators of monitored tests: shuttle run 4 x 10 m test kick for shooting precision, shuttle run with ball completed by goal shooting.

On the basis of our results we can state, that there is existence of statistical significant difference in monitored indicators between increase after first and second period training preparation except performance in juggling test (table 5). We found out, that increase after second period of training preparation was in all indicators higher than after first, what with we can confirm the successfulness of second training period realization.

Tab. 5 Increase differences between training programs

Indicator	1st training program		2nd training program		t - test	Sign.
	x	s	x	s		
Body height	1,583	0,654	2,042	0,292	3,114**	p<0,01
Body weight	0,917	1,213	1,354	1,433	1,430	
Sit and reach	1,667	2,697	1,958	2,255	0,391	
Standing broad jump	3,792	4,107	4,083	5,225	0,183	
Shuttle run 4x10 m	0,208	1,021	0,583	1,018	1,122	
Shooting for precision	0,417	1,742	0,583	1,909	0,273	
Shuttle run with ball	0,167	1,049	0,292	1,160	0,308	
Juggling with ball	1,292	1,301	2,750	1,675	2,598*	p<0,05

CONCLUSION

Presented results document possibilities of presented motor abilities development during one-year training process with beginners of soccer pre-preparation.

Results are pointing to:

1. There is need to realize one –year training program, where more than 50% of boys can increase their motor performance,
2. Is appropriate to put into the content more exercise for speed and movements unification ability,
3. During training process realization condition abilities were increase in the group of 11 years old boys, while 10 years old boys could better adapt to coordination abilities development.

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