# CORRELATION BETWEEN SPORT-TECHNICAL INDEX OF KIDS UP TO 11-YEARS-OLD, TRAINING FOOTBALL BASED ON THEIR IN-GAME POSITION

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**ABSTRACT**

The dynamic of the evolution of some physical, technical, physiological indicators in children training football up to the age of 11 have been taken into consideration. Their interdependence has been determined with the aid of correlational analysis in the beginning and end of the 14-month training model. The aim of research is discovering the bond between the improvement in certain tests and the inner correlations of a certain test with others .It has been laid down that the forwards tend to have anaerobic lactate qualities of players, the agility and speed strength. When it comes to defenders, the author advocates raising attention to improve the aerobic, aerobic anaerobic, lactate properties, speed strength and agility. No major difference has been observed in the physical preparation of the players of both respective posts.

**Key words:** children, football, speed strength, agility

## INTRODUCTION

Sports coaches leading the educational training classes have always been interested the in finding an answer to the question how to determine the most essential and effective training resources and methods of training sessions for contestants and the teams which they head. Some (Bachvarov, M., L. Dimitrov, A. Gigov (2008), Savin, S.A. (1975), Platonov, V. (1988), Dimitrov, D. (1983) (1-4) stick to improving the physical qualities,others strive to increase the level of the technical and tactical qualities (Angelov, V., S. Petrov (1981). Zlygostev, O., V. (2012), Madansky, M. (1986) (5-7), another group of people are upholders of their mutual development (Dasheva, D. (1997), Bachev, V. (2010), Kasabova, L. (2017, 2017), Kirkova, M. (2019), Stoyanov, Hr. (2009) (8-13).

The in-game posts are defined by several factors. One of which is the level of technical

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abilities. The technical abilities of players are measured with the aid of specific for each sport statistically registered in-game actions. I. Peltekova (2004) in her own research indicates that "through the given indexes we gain insight on the in-game ball handling.The valuation of the ball handling helps the coach estimate the effectiveness in defense and offence and set his own goals" (14).

All the recommendations are connected to the adaptation abilities of the human body and it is adjustment to the states of constant flux in a training session. The systematic application of these loadings refines the organism and it is motor, cardio-vascular and respiratory systems, preparing them for upcoming extreme conditions of training.

According to Zhelyazkov, Tsv. and D. Dasheva (2000) the effectiveness of the training influence can be increased if complex practices are utilized, consisting of the physical and technical abilities of the sportsman (15).

In order for the training session to be of full value, setting a plan of the educational-training process is of highest importance. I. Peltekova (2014) suggests that "planning composes the

documental structure of education. For the process of basketball training to be successfully run in university conditions, the coach is obliged to have a well-prepared documentation and to regularly conduct pedagogical control, render accounts and collect data. Without fixing a plan, the educational process is chaotic, inadequate and puts the effectiveness of the preparation to risk" (16).

In the process of research of the physical employability of under-age trainees it has been observed that such indicators as maximal oxygen consumption (MOS), physical employability (…..),as well as aerobic and anaerobic productivity of the organism requires simultaneous and prioritized development of physical, technical, tactical and psychological qualities of the human body. After carrying out detailed researches, Shamardin, A. I., I. Novokuchtenov, A. Shamarddin (2006) distinguish and compare fascinating subordinations. At first they don't observe authentic differences in the indexes of general and special physical preparedness in relation to the in-game post of children practicing football of that ascertained age group. They owe this to the fact that the widely spread practice, especially in the countries of the Middle East, in it is early stages of preparation doesn't have an evident differentiation in stress in relation to the playing position. Second In relevance for forwards' level of physical preparation are the indicators of physical employability, general and speed endurance and swiftness. The main thing for midfielders and defenders is the presence of proportional development of all parameters and in particular-the speed-strength based (17).

To clarify the structure of the physical preparedness of players, they put the acquired results from the tastings to a correlational analysis. They ascertain that in children practicing football aged 11 or lower, virtually all aspects of preparation are synonymously connected which, therefore, gives evidence that all-round improvement is required in a sports training session.

Many of the relations, causing interest for sports lie in a bond between one another. In this sense they can be distinguished to "occurrence-reason" and "occurence-consequence". The "occurrence-reason"

relation has an effect on the "occurrence-consequence" which as a result changes. Owing to the practical impossibility to take into account all the indicators having an effect on the ''occurrence-consequence'' relation, when examining the "reason-consequence" bonds the indicators that are predominantly picked up are those of highest relevance to the phenomenon "consequence".

As trustworthy in the first steps of defining the relations between the different indicators are taken the possibilities calculated by the correlational analysis which are expressed by their coefficient of correlation (r).When defining the impact of relation between two or more variables, as substantial is considered the index within the range of 0,5-0,7%,as big within the range of 0,7-0,9% and as very big those over 0,9%

In order to study and differentiate the functional preparation of players with their different specializations in this age range, we put forward as goal carrying out a correlational analysis based on the utilized by us control testing exercises.

**The tasks of the research are narrowed down to:**
1. Forming a complex of tests characterizing the most important physical, technical, tactical and functional qualities of football players.
2. Approbation of the complex of tests at the beginning and end of the studied period
3. Differentiating the significance of the factors in forwards with those in defenders.

**ORGANIZATION OF THE RESEARCH**
The researched group of football players consists of 25 children age 11 or lower, who hold training sessions abiding by our educational-training concept, same for both in-game posts. The training sessions are held 2 times a week and one training-competitive day on Saturdays takes place. In general, +in the course of 14 weeks, 42 training sessions and control competitions have been held.

**RESULTS AND DISCUSSION**
The carried out correlational analysis following the method of Brave-Pearson between the 17 control indicators has shown that certain tests have a fundamental bond with numerous other factors **(Table 1)**

**Table 1.** Correlational metric dependences between the researched parameters in children playing football as forwards aged 11 and lower. – offensive players

| № | Indicators | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Height | # | | | | | | | | | | | | | | | |
| 2 | Body weigth | 686 | # | | | | | | | | | | | | | | |
| 3 | High start 15m run | 311 | 410 | # | | | | | | | | | | | | | |
| 4 | 30m. run | 502 | 385 | 648 | # | | | | | | | | | | | | |
| 5 | 60m. run | 588 | 442 | 609 | 607 | # | | | | | | | | | | | |
| 6 | Step run (10) | 218 | 315 | 686 | 217 | 387 | # | | | | | | | | | | |
| 7 | Anaerobic alactate тест 40 m | 232 | 339 | 411 | 559 | 549 | 203 | # | | | | | | | | | |
| 8 | Anaerobic lactate test 300 m | 205 | 308 | 407 | 483 | 411 | 157 | 531 | # | | | | | | | | |
| 9 | Swiftness of lower limb | 185 | 142 | 531 | 315 | 306 | 518 | 357 | 80 | # | | | | | | | |
| 10 | Vertical jump | 495 | 309 | 562 | 520 | 506 | 492 | 109 | 209 | 448 | # | | | | | | |
| 11 | Fivefold jump from place | 579 | 323 | 583 | 542 | 529 | 487 | 138 | 262 | 497 | 557 | # | | | | | |
| 12 | Forward jump from place | 611 | 338 | 602 | 570 | 545 | 571 | 149 | 311 | 521 | 608 | 639 | # | | | | |
| 13 | Special football test „Zeliazkov" | 578 | 357 | 511 | 590 | 568 | 523 | 567 | 574 | 487 | 545 | 570 | 486 | # | | | |
| 14 | Combined passing with position change | 540 | 495 | 500 | 538 | 575 | 490 | 520 | 532 | 485 | 501 | 511 | 517 | 539 | # | | |
| 15 | Fast pass exchange | 552 | 538 | 527 | 492 | 505 | 481 | 411 | 497 | 509 | 417 | 492 | 483 | 505 | 519 | # | |
| 16 | $PWC_{170}$ | 539 | 613 | 315 | 286 | 509 | 157 | 472 | 552 | 167 | 58 | 188 | 178 | 532 | 488 | 373 | # |
| 17 | M P K | 551 | 627 | 309 | 157 | 511 | 105 | 435 | 548 | 118 | 17 | 142 | 129 | 541 | 473 | 352 | 597 |

The anthropometric indicators of relevant correlational degree are 10 in count, none of which has a higher degree connection

The second anthropometric index is represented in a even lower degree, body weight. In it the tests that stand out predominantly characterize "the swiftness in pass exchanges" and the two physiological functional tests PWC170 и МПК.

The anaerobic alactate test correlates considerably in 30m and 60m sprint runs., with the fused test of passing and position change and especially with the specialized test for football players put together by Zhelyazkov, Tsv (2004).The frequency index of movement is vastly related to the 15m sprint run from a high start (686),the swiftness of a lower limb (r=518),forward jump from place (r=571) and the "Zhelyazkov" test (r=523). These speed tests have a very weak correlational relevance to the indicators characterizing the functional abilities of the human body (18).

The anaerobic lactate test is within the range of the considerable degree of correlational relevance with the test "Zhelyazkov", (r=576) ,the combined passing with the position change of players (r=532) and the two functional indicators, PWC170 – r=552 и MPK – r=548.It is expected that the tests, characterizing the speed-strength abilities of the football players would correlate with each other as well with those of swiftness (tests 4, 5, 6).The relation of these indexes is very weak towards the functional phyisiological indicators (tests 16 and 17)

The last ones are in connected and have an impact on 6 other indicators, mainly

characterizing the anaerobic abilities of the organism, the level of the lactate test (8), and test „ Zhelyazkov".In these researches, the coefficient of reliability is in within the range of  P < 0, 05.

As most informative has emerged the combined test (slalom layout with obstacles, 32m. long, combined with „pine" 72 m. long, test "Zhelyazkov".This test, which is predominantly of anaerobic alactate manner strongly correlates with 10 other tests and makes it more informative for the immediate practice of coaches **(Figure 1)**
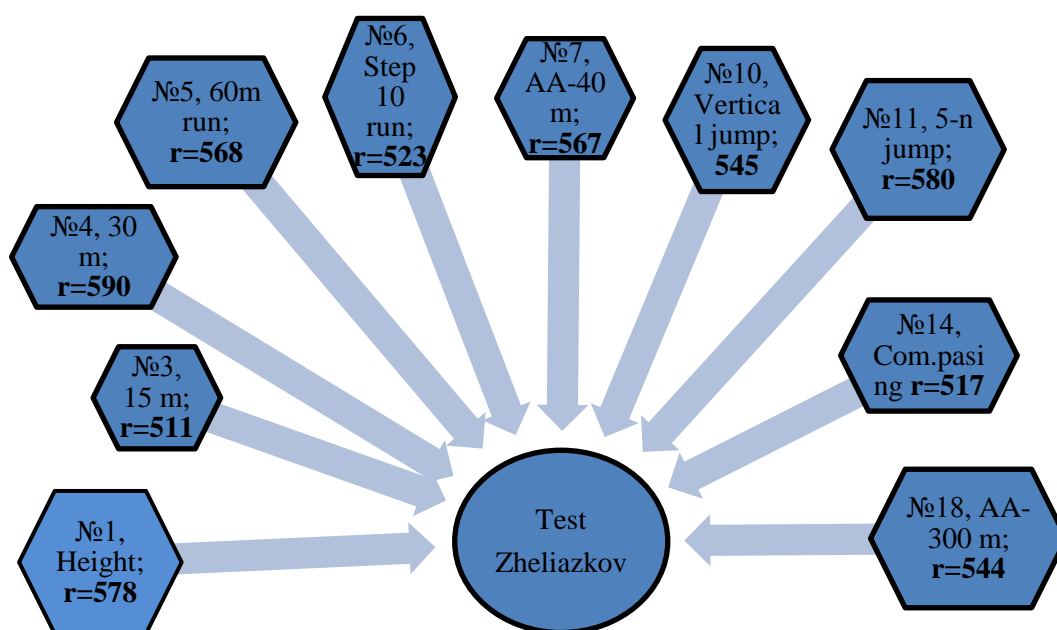


**Figure 1.** Indicators influencing the level of certain "attackers" tests: specialized soccer test "Zhelyazkov".

With similar high correlational bonds are the "60m sprint run from a high start" (with 12 essential bonds) "combined passing between 4 players with position change" (with 13 essential bonds), and the test "15m sprint run from a high start" (with 11 essential bonds) and other.

The ascertained correlational relations between the indicators in defenders have shown their own specific pattern **(Table 2).**

In this group of football players 5 tests have appeared with over 9 dependent compound factors. Much like in the previous findings, here as well the test „Zhelyazkov" (№ 13), as an indicator of the specific employability of football players has

noticeable connections with twelve other factors. Some of which are the speed-strength (№ 10, 11 и 12) and the two functionality indexes (PWC170 и МПК).

The second in importance in defenders is the 15m sprint run, which is connected to eleven other factors, predominantly to tests of speed-strength manner and alactate tests (№ 13, 7 and 14).

The analysis and it is ascertained bonds between the researched indicators in forwards as well as in defenders raises our attention to the complex development of the physical and technical qualities of players, despite the differences being insignificant in this age.

*Table 2. Correlational metric dependences between the researched parameters in children playing football as forwards aged 11 and lower. –defensive players*

| № | Indicators | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Height | # | | | | | | | | | | | | | | | | |
| 2 | Body weight | 731 | # | | | | | | | | | | | | | | | |
| 3 | High start 15m sprint | 317 | 327 | # | | | | | | | | | | | | | | |
| 4 | 30m sprint | 504 | 448 | 609 | # | | | | | | | | | | | | | |
| 5 | 60m sprint | 573 | 493 | 573 | 597 | # | | | | | | | | | | | | |
| 6 | Step run (10) | 272 | 219 | 590 | 487 | 213 | # | | | | | | | | | | | |
| 7 | Anaerobic alactate test 40m | 548 | 518 | 539 | 493 | 579 | 189 | # | | | | | | | | | | |
| 8 | Anaerobic lactate test 300m | 507 | 443 | 384 | 464 | 307 | 297 | 264 | # | | | | | | | | | |
| 9 | Swiftness of lower limb | 186 | 216 | 577 | 217 | 209 | 538 | 431 | 186 | # | | | | | | | | |
| 10 | Vertical jump | 447 | 183 | 559 | 538 | 442 | 486 | 483 | 214 | 435 | # | | | | | | | |
| 11 | Fivefold jump from place | 513 | 270 | 603 | 583 | 480 | 513 | 271 | 301 | 508 | 563 | # | | | | | | |
| 12 | Forward jump from place | 558 | 353 | 618 | 604 | 496 | 544 | 318 | 330 | 535 | 584 | 544 | # | | | | | |
| 13 | Special football test „Zeliazkov" | 473 | 490 | 537 | 618 | 588 | 409 | 539 | 508 | 572 | 517 | 506 | 531 | # | | | | |
| 14 | Combined passing with position change | 485 | 516 | 529 | 562 | 542 | 435 | 508 | 513 | 388 | 521 | 438 | 513 | 545 | # | | | |
| 15 | Fast pass exchange | 503 | 497 | 501 | 493 | 449 | 438 | 441 | 442 | 411 | 386 | 378 | 438 | 447 | 439 | # | | |
| 16 | PWC₁₇₀ | 573 | 592 | 386 | 281 | 193 | 90 | 520 | 653 | 219 | 151 | 211 | 243 | 527 | 465 | 386 | # | |
| 17 | M P K | 548 | 568 | 249 | 199 | 209 | 50 | 504 | 671 | 203 | 103 | 185 | 208 | 541 | 443 | 313 | 641 | |

The reliable bonds between the indicators characterizing the functional abilities and physical qualities in forwards outnumber those in defenders. We have observed 64 reliable bonds along with 9 values over 0,600 in forwards and 55 reliable bonds along with 8 values over 0,600 in defenders.

It also has to be pointed out that the high percentage of factors, related to the characteristics of the functional indicators of employability and oxygen consumption are typical of presence of essential bonds with the players' endurance.

It is well-known from the sports science (Platonov, V. (1988), Zhelyazkov, Tsv. and D. Dasheva (2000), Iliev, I. (1985), (3-15-19) that these physiological parameters promote the increase of specific stress in a training session and in-game, giving an opportunity to put the present potential into practice and have a considerable effect on the rehabilitation processes of the organism.

As a consequence of the performed analysis of the interindependences between indicators characterizing the main physical and technical qualities of football players aged 11 and under, the following conclusions can be drawn:

**CONCLUSION**

1. No differences of vital importance have been observed between the physical preparedness of forwards and defenders in the researched age group.
2. It has been clearly settled that the priority in physical and technical development has to be the complex improvement of these qualities, prior to the specialized preparation of the further age categories
3. The priority of high importance is the preparation aimed mainly at improving the anaerobic alactate abilities of the human body ,increasing the level of swiftness, speed-strength,as well as speed endurance
4. The preparation in defenders has to be aimed at improving the aerobic anaerobic lactate abilities,speed-strength qualities and swiftness

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