The Development of the Ability to Equilibrium Football players 10-11 years with different Nervous System

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ABSTRACT

The purpose of this article is to summarize the data obtained in the new research study, namely the change indicators capacity to balance the young players that have different typological peculiarities of nervous system properties. The main method of studying of the problem is pedagogical experiment; we also used a theoretical analysis of the methodological literature and the method of mathematical statistics. The result of the study is change indicators capacity to balance football players 10-11 years, after the application of experimental and differential methodic aimed at enhancing technical skills of young football players. Conclusion - the article can be useful for coaches and teachers who are training young athletes in football and other sports. The relevance of the topic due to the fact that you need to look for new ways to improve the training process of young footballers who would be able to effective increase their technical readiness.

Keywords: Ability to balance; typology; the football players; the nervous system;

INTRODUCTION

Football is the most entertaining sport. Thousands of spectators attend football matches. Football interesting by many aspects, one of which is technical skill and the mindset of the players. In order to have a high level of technical skill, you must work hard from childhood.

Technical training of the player are coordination abilities. Coordination can be common and specific to the chosen sport. General coordination abilities are the Foundation in the development of specific coordination abilities, and specific coordination abilities are the Foundation of technical training of the athlete1,2,3. One of the most important coordination abilities of the player is the ability to balance4,5,6.

Under the ability to balance in dynamic and static conditions is meant the preservation of stability poses in different static body positions or during motions1.

In modern football requires players the ability to navigate in space and to maintain balance in different game situations, the ability to fight for the ball and the position in confrontation with opponents and the ability to maintain balance on the supporting leg. Age 8-12 years favorable for the development of all coordination abilities. Their natural growth at this age is 56%. The balance occurs at 9-12 years7,8.

The most favorable period for the development of the ability to equilibrium is the age of 10-11 years9.

One of the directions of perfection of process of development of coordination abilities of the players in the initial stages of sports training is the implementation of a differentiated approach. A differentiated approach is a method of combining athletes in the training group with regard to their sports and important qualities and usage for each group of certain methods of training adequate to their typical characteristics, such as gender, age, properties of temperament, level of fitness, and others11,12.

Individually differentiated approach is implemented in the selection process of teaching content, means, methods and forms of organization of educational-training process13.

In the training process, the division of players into sub-groups can be quite varied. One of the little-studied and progressive methods is the separation of players into groups based on their typology. That is, given the typological features of display properties of the nervous system, the strength and weakness of the nervous system on the initiation process. The efficiency of this approach is confirmed by many studies14,15,16.

However, we failed to find studies that are dedicated to training young footballers taking into account typological peculiarities of manifestations of properties of the nervous system.

The aim of the study is to increase the technical training of football players at the expense of the development of the ability to equilibrium using a differentiated approach, which is based on the typology of athletes 10-11 years.

The hypothesis of the research is the assumption that the experimental method of differential development of the ability to equilibrium, based on the type of nervous system football players will allow us to improve the technical training of young football...
players. Objectives of the study were to:
1) determine the level of development of the ability to equilibrium the football players 10-11 years;
2) develop an experimental methodology for the development of the ability to equilibrium, based on the typology of the nervous system of athletes;
3) to study the effect of experimental procedure on the level of technical training and a competitive result football players 10-11 years.

METHODS

To address the aim and objectives, implementation, hypotheses were used theoretical and empirical methods.
1. Theoretical methods – the analysis and generalization of literary sources, the study of materials on the issue, the study of the system of training young football players.
2. Empirical methods:
   - pedagogical experiment - determination of strength of the nervous system in the initiation process\(^{17}\) assessment of the level of development of the ability to equilibrium\(^{1}\)
   - statistical Methods\(^{18}\)
   - The basis for this study was children and youth sports school №5 of Kirov. The study was conducted in six stages:
3. Analysis and summarizing of literature.
4. The definition of the methodology and defining the main indicators presented in the study.
5. Development of experimental methodic based on typological characteristics of the nervous system football players 10-11 years.
6. Conducting the pedagogical experiment.
7. Processing of the obtained results.

The strength of the nervous system of the football players was determined by the method “Tapping-test”. A sheet of A4 paper divided into 6 square located on three in a row. On the signal the players begin to put the dots in each square. The allotted time for each square (5 s) you need to put as many points as possible. Go to another square only on command. Work is performed at maximum speed after the sixth square exercise ends. The result: counting the number of dots in each square, draw the graph of health. Based on the analysis of curve shape to determine the type of the nervous system.\(^{17}\)

The ability to equilibrium was determined by the method “Turns on gymnastic bench”. Standing on the narrow side (10 cm) gymnastic benches, one foot in front of the other, the player must within 20 to do as many turns 360° turns - once left, once right, without losing balance. Result: the number of rotations in 20 s (with accuracy to 0.5 of a turn). Considered the best result of the two repetitions. In case of loss of balance should as soon as possible to take the previous position and continue the test\(^{1}\).

In addition, at the beginning and at the end of the pedagogical experiment was played friendly match between the groups who worked on different techniques. Friendly match allows you to visual evaluate many performance athletes, including and technical indicators.

The essence of the experiment was to apply the different components of the loads, the development of the ability to equilibrium the football players 10-11 years with different strength of the nervous system.

Description of the experiment: In total, the experiment involved 32 football player age 10-11 years. Before the start of the experiment, the players were divided into experimental group (EG) and control group (CG) which were randomly selected. Each group had the same number of players with strong and weak nervous system excitation process\(^{19}\).

During the year, the players of CG were engaged in the standard curriculum for sports schools,\(^{20}\) and the players of EG were engaged in experimental methodic. In the EG used a differentiated approach based on typological features of display properties of the nervous system. In the course of the experiment was conducted 138 training.

In mathematical and statistical processing of results of pedagogical experiment was used the criterion of parametric (t-student) [ironstone] and Microsoft Excel 2007. Correlation analysis was performed using Bio Stat 2009. The result was significant at the value P>0.05.

Features of the experimental methodic:
1. Warm-up for 20 minutes. After a warm-up used set of exercises to develop the ability to balance in different sub-groups with strong and weak nervous system excitation process.
2. Tools development of the ability to equilibrium the players 10-11 years: juggling with feet, standing on one leg, or move to another position, juggling head while standing on one leg, juggling with the added exercise (rotation). Exercises on the gymnastic bench, stand on your head and hands, dribbling in a circle, exercises not sustainable support (ball), jump with a turn on 180 and 360 degree other exercises.
3. Methods of developing the ability for balance of young soccer players: repeated, variable, games, competitions\(^{18}\).
4. Instructional techniques for developing the ability to balance the introduction of new exercises, complication of old exercises, the introduction of
new subjects and goals and others. The load components for the development of the ability to balance in children 10-11 years:

- the intensity of the exercise 150-170 beats/min.
- the duration of the exercise the players with a strong nervous system for 20-30 seconds, and weak – 30-40 sec.
- rest period to full recovery, the nature of recreation – passive.
- the number of repetitions of one exercise football players with a strong nervous system 3-5 times, and weak – 4-6 times. The number of series a strong 6-8, and 7-10 from the weak.

The intensity of the players with a strong nervous system was increased by increasing the amount of exercise and decrease rest. The amount of load the players with a weak nervous system was increased by increasing the number of repetitions and rest intervals.

RESULTS

After it was formed EG and KG between them was played a friendly match, which showed an objective level of technical training. The meeting consisted of two halves, 25 minutes and ended with the score 1-1. Objectively it was clear that the players of both groups technically poorly trained, athletes did not hold the balance in moments of receiving the ball, dribbling and other technical elements. Also before the experiment, all the players passed the test "Turns on gymnastic bench", which shows the level of development of the ability to equilibrium. Significant differences between the performance of young football players of EG and CG and within groups was not detected (P> 0.05). Indicators in the test "Turns on gymnastic bench" (from 9.1 to 10.1 times) correspond to the average level of development of the ability to equilibrium. Indicators ability to balance players 10-11 is present in table 1.

The players in the EG with a strong nervous system indicators have improved from 10.1±0,6 12,0±0,4 times(P<0.01) and players with a weak nervous system–from 9,1±0,3 10,1±0,4 times (P<0.05), which corresponds to the development of the ability to balance in children "above average".

KG has also seen positive changes, but they were not significant (P> 0.05). After the pedagogical experiment the team of EG and team of KG played a friendly match. This time the game ended with a confident victory of football players of EG 4-0. In the game the children are from the EG was more technical, working with the ball faster than football players from KG. Thus, we can speak about the effectiveness of the experimental methodic.

Table 1: Indicators of ability to balance football players 10-11 years old (M±m)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>KG Before</th>
<th>KG After</th>
<th>EG Before</th>
<th>EG After</th>
<th>P (2-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Turns on gymnastic bench</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong</td>
<td>10,1±0,6</td>
<td>12,0±0,4</td>
<td>9,9±0,4</td>
<td>10,2±0,4</td>
<td>0,58</td>
</tr>
<tr>
<td>Weak</td>
<td>9,1±0,3</td>
<td>10,1±0,4</td>
<td>9,4±0,6</td>
<td>9,6±0,6</td>
<td>0,35</td>
</tr>
<tr>
<td></td>
<td>1=1,55</td>
<td>3=3,36</td>
<td>1=0,7</td>
<td>1=0,7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P&gt;0,05</td>
<td>P&lt;0,05</td>
<td>P&gt;0,05</td>
<td>P&gt;0,05</td>
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</tbody>
</table>

DISCUSSION

The importance of coordination abilities in the training of players is very large. For the players one of the most important coordination abilities is the ability of the player in terms of games to keep static and dynamic balance.

In training with children often used a differentiated approach, which is based on the individual characteristics of the groups of athletes, it allows efficient use of the hidden reserves of the organism.

One of the methods of differentiation of children into groups is a typological criterion. The essence of which is determined by the separation into subgroups of children with different typological features of display properties of the nervous system. The efficiency of this method is fully proven in previously conducted studies and confirmed by our research on the players 10-11 years, which was not done before.

For the first time described in detail the methodic of development of the ability to equilibrium the football players 10-11 years with different typologies, namely the provided tools, methods, and tests, components of load when performing physical exercises for young football players with different nervous system.

The football players with a strong nervous system to effective carry out the loading of high intensity, while athletes with a weak nervous system is better to give exercises with a bulk load. These
conclusions are supported by previous studies\textsuperscript{21,22,23}.

CONCLUSION

Experimental and differential methodic development of the ability to equilibrium football players 10-11 years old with different type of nervous system have had a positive impact on the players of EG (P <0.01). In the performance of players in KG, who were engaged in the usual manner, results in the ability to balance have improved, but not significantly (P >0.01).

Confirmation of the effectiveness of the experimental procedure can be the outcome of the friendly match that was played at the end of the pedagogical experiment. Victory over EG KG 4-0 says that the players of the EG surpassed players KG all technical indicators, including the level of development of ability to balance.

Recommendations: The study is of practical interest for coaches and teachers of schools and higher educational institutions. The study describes in detail the tools, method, components of load, tests to use with the football players 10-11 years.

REFERENCES