DEVELOPMENT OF MOTIVE SKILLS OF STUDENTS WHILE MAKING UNDERARM PASS DURING PLAYING VOLLEYBALL

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Annotation. 

Purpose: The effect of the experimental procedure on the development of motor abilities of students in the course of employment volleyball. 

Material: The experiment involved 80 students of the Faculty of Physical Education. 

Results: Studies have shown that when passing the ball with two hands at the bottom of the students there is a certain dynamic changes in the structure of support interactions, which is expressed by the increase of biodynamic and time indicators on 8.19% of the students in the control group and 16.17% of the students in the experimental group. The technique allowed tenzodynamometry qualitatively assess the level of development of motor abilities of students in performing the ball with two hands at the bottom. Determine the validity of the growth of average indicators support reactions of the body of students in the experimental group when the transfer of the ball with two hands at the bottom. 

Conclusions: Recommended every lesson during warmup volleyball include special exercises, tasks are executed sequentially, with a gradual increase in load as the assimilation of motor actions, use the methods of biomechanical control.

Keywords: students, biomechanical, tenzodynamometry, volleyball, physical education.
Organization of the research: experimental researches were conducted on the base of Chernigov National pedagogic university, named after T.G. Shevchenko, in laboratory of bio-mechanics with participation of 1st and 2nd year students of faculty of physical education (n=80).

Results of the research
Training of elements of volleyball technique is the basis of game, as far as no tactic idea can be realized without perfect mastering of techniques. The more various technical fitness of players is the more tactical possibilities exist for a team [3, 7].

Passing of ball is a targeted action, which is connected with taking of ball and re-directing of it to one of partners. Taking of ball (for example taking of ball from adversary’s service) does not reflect actual position because in this case main aim is targeted pass to attacking player. Term “taking” is connected with time, when many players could not handle served ball correctly.

Success of ball pass’s training depends on level of players’ physical fitness. They shall be able to stand on half bent legs for long time, to quickly move on site.

We worked out special methodic of development of students’ motion skills in process of volleyball trainings with ball’s passing by two hands from below, which included 30 special exercises with certain tasks. The tasks were realized consequently, with gradual increasing of loads in the course of mastering of movements. At every training during warming up we fulfilled special volleyball exercises and used method of repetition. General group (GG) of physical education faculty students was divided into control group (CG) (n=40), which was trained by traditional methodic and experimental group (n=40), which was trained by special methodic.

Control over development of motion skills was conducted with the help of bio-mechanical methods, videlicet: method of strain gauge dynamometry that permitted to promptly correct training and perfection process.

Influence of methodic of motion skills’ development on bio-mechanical indicators of support responses when fulfilling ball’s passing with two hands from below

Mean statistic indicators of support responses of body of physical education faculty students when fulfilling ball’s passing with two hands from below

<table>
<thead>
<tr>
<th>№</th>
<th>Description of characteristics</th>
<th>GG (n=80)</th>
<th>CG (n=40)</th>
<th>Increment, %</th>
<th>EG (n=40)</th>
<th>Increment, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(F_z) (_{max})</td>
<td>1614.5±397.5</td>
<td>1645.8±53.12</td>
<td>1.94</td>
<td>1678.6±41.16</td>
<td>3.97</td>
</tr>
<tr>
<td>2</td>
<td>(F_x) (_{max})</td>
<td>56.15±8.29</td>
<td>58.97±9.91</td>
<td>5.02</td>
<td>93.51±19.88</td>
<td>66.54</td>
</tr>
<tr>
<td>3</td>
<td>(F_y) (_{max})</td>
<td>57.54±20.12</td>
<td>61.23±19.87</td>
<td>7.35</td>
<td>66.14±22.13</td>
<td>14.95</td>
</tr>
<tr>
<td>4</td>
<td>(F) (_{max})</td>
<td>1615.1±398.1</td>
<td>1643.2±53.31</td>
<td>1.74</td>
<td>1881.2±54.78</td>
<td>16.48</td>
</tr>
<tr>
<td>5</td>
<td>(F_{max}/P)</td>
<td>2.31±0.42</td>
<td>2.26±0.09</td>
<td>-2.16</td>
<td>2.33±0.21</td>
<td>0.87</td>
</tr>
<tr>
<td>6</td>
<td>GRAD</td>
<td>3384.1±947.4</td>
<td>3711.1±239.1</td>
<td>9.66</td>
<td>4359.7±166.5</td>
<td>28.66</td>
</tr>
<tr>
<td>7</td>
<td>I</td>
<td>99.39±23.35</td>
<td>112.64±15.31</td>
<td>13.33</td>
<td>139.12±25.22</td>
<td>39.94</td>
</tr>
<tr>
<td>8</td>
<td>P</td>
<td>693.67±50.22</td>
<td>727.15±8.23</td>
<td>5.01</td>
<td>739.12±25.23</td>
<td>6.57</td>
</tr>
<tr>
<td>9</td>
<td>(T_{ps})</td>
<td>0.22±0.04</td>
<td>0.21±0.03</td>
<td>-4.55</td>
<td>0.18±0.05</td>
<td>-18.18</td>
</tr>
<tr>
<td>10</td>
<td>(T_{max})</td>
<td>0.33±0.09</td>
<td>0.32±0.04</td>
<td>-3.03</td>
<td>0.31±0.02</td>
<td>-6.06</td>
</tr>
<tr>
<td>11</td>
<td>(T_o)</td>
<td>0.12±0.04</td>
<td>0.08±0.09</td>
<td>-33.33</td>
<td>0.11±0.02</td>
<td>-8.33</td>
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<tr>
<td>12</td>
<td>(T_{max}+T_o)</td>
<td>0.45±0.13</td>
<td>0.42±0.03</td>
<td>-6.66</td>
<td>0.43±0.01</td>
<td>-4.44</td>
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<tr>
<td>13</td>
<td>(T_h)</td>
<td>0.51±0.18</td>
<td>0.39±0.03</td>
<td>-23.53</td>
<td>0.46±0.11</td>
<td>-9.81</td>
</tr>
</tbody>
</table>
Indicators of maximal force of pushing in respect to vertical and frontal axes had lower increment – 1.94 % and 5.02 % respectively, of maximal value of support response’ components– 1.74 %, of body mass– 5.01 %. Indicator of correlation of support responses force indicators’ maximal value to body mass reduced by 2.16 % (P>0.05). As a result of experiment mean increment of bio-dynamic indicators in control group was 10.85 %.

Time characteristics of support responses with ball’s passing by two hands from below reduced values from 3.03 % to 33.33 %. Mean increment of time indicators of control group was 8.19 %.

In experimental group we found great quantity of confident changes of our methodic influence on bio-mechanical characteristics of ball’s passing with two hands from below. All bio-mechanical characteristics changed confidently (P<0.05). Increasing of changes was in mean range from 0.87 % to 66.54 %. Time characteristics changed confidently (P<0.05). Increment of percentage of their values was within from 2.81 % to 18.18 %. Mean increment of experimental group’s indicators was 16.17 % (see table 1).

Therefore approximate schema of training and development of motion skills implies understanding of sense of a technique, imagining of movements’ structure during practical actions with ball, finding of the most rational solution and fixing of skills with multiple repetitions.

Conclusions:
On the base of obtained by us results we can affirm that the offered experimental methodic is effective for development of students’ motion skills in process of volleyball trainings. Application of the offered methodic in combination with bio-mechanical methods of control in process of volleyball training permits to achieve better indicators of support responses of body that is witnessed by increment of percentage of mean statistic indicators of support responses on experimental group in comparison with control one by 7.98 %.

The prospects of further researches in this direction imply offering of new ways of motion skills’ development on the base of experimental data in the process of volleyball trainings in sphere of HEEs physical education.

References:
2. Bernshtejn N.A. Ocherki po fiziologii dvizhenij i fiziologii aktivnosti [Essays on the physiology of movements and physiology of activity], Moscow, Medicine, 1966, 349 p.