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TECHNICAL TRAINING OF GYMNASTS-ARTISTS AT THE STAGE OF SPORTS IMPROVEMENT

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ABSTRACT
The following article discusses the problem of organizing and monitoring the special-physical and technical training of young gymnasts at the stage of sports improvement. It is shown that the main advantage achieved during the training session with objects is the regulation of the number of repetitions at high work intensity.

Relevance of the research: The increasing competition on the world gymnastics board assumes that the championship will be maintained for those athletes who will be able to combine the multi-structural complexity with virtuoso technical performance along with a special expressiveness, emotionality, artistry. Therefore, an even better approach is required for the special motor training, based on the principles of individualization and advanced development in ever-changing conditions in which any modern gymnastics operates (1, 2, 5, 6, 7, 8).

The aim of the research – the improvement of the level of sports and technical training of young gymnasts through the use of rational means and training methods.

The task of the research - experimental justification of the program of special-physical and technical training of gymnasts-artists at the stage of sports improvement.

Organization of research. The study involved 34 young gymnasts, including 16 gymnasts of the 1st class and 18 – CMS, divided into two groups of 17 people each. One of them was conditionally named experimental (EG), while the second one was named control (CG). The research was conducted in two stages.

The realization of experimental method was designed for 12 months and included two stages. The first stage of gymnasts’ training for exercises with objects lasted from September 2018 to April 2019. This stage involved the development of special-technical skill (STS) only through the means of special-physical (SPhT) and dynamic training. The training process provided performance of exercises, directed towards the development of dynamic and static equilibrium, the ability of speed and accuracy of reaction, differentiating the parameters of movements, the reproduction of rhythm.

The second stage of preparation was held from June to September 2019. According to the results obtained on the basis of intermediate testing, the coaching staff was asked to continue the directional development of SPhT and STS in the process of forming the technique of performing competitive elements and connections, combinations with objects in general.
The program of the experiment also included elements of self-competitive exercises with objects relevant for rhythmic gymnastics, which were performed by gymnasts using the right and the left sides of the musculoskeletal apparatus (MS) at the same time. The work with the object involved a symmetrical or asymmetrical nature of execution. Implementation of the proposed exercises was carried out in pairs, groups. Successful perception in the process of training sessions was ensured in compliance with all theoretical norms of educational activity. (2, 5, 7)

**Study results.** The peculiarity of the experimental technique was observed in the following:
- purposeful improvement of the development mechanisms of special-physical and technical preparedness by the means of summing-up and preparatory exercises;
- technically correct, unmistakable performance of basic and profiling elements, as well as competitive exercises with objects;
- execution of competitive exercises with objects began after establishing a reliable increase in the level of development of special physical qualities;
- performance of all exercises by the gymnasts of the SPhT and SMT leading and non-leading sides of the MS.

The pre-learned complex is performed by a group of gymnasts to the music, without pauses and stops. Synchronicity, consistency and a complete accuracy of movements are necessary in terms of the assessment of quality. In addition to the level of mastery of basic skills the complex allows to check the degree of functional motor asymmetry, stability and variability of the technique, compliance with the standards, ability to work in group exercises, ability to use small space of the site, ability to catch rhythmic accents.

To assess the performance, it is enough to use a 5-scale system, "+" and "-", added to the main assessment allow to make it more subtle, as well as to note even minor differences between the performers.

Complexes with all other objects are compiled using the same principle basis (L.A. Karpenko 2003).

Comprehensive special-physical training was carried out in two forms (3, 4, 7):
- SPhT complexes;
- circuit training on the SPhT.

Special-physical training is mainly carried out in different parts of training sessions:
- at the beginning of the training session;
- at the end of the training session;
- as fragments throughout the whole training session.

With the purpose of control, development and further improvement of the motor abilities of athletes, the complexes of special physical exercise recommended by L.A. Karpenko (2003) were used.

Special physical exercise complexes were recommended for performing at the end of the training session. All exercises include an average dosage (number of repetitions in the set, number of sets). Gymnasts who are lagging behind in any indicators were advised to increase the number of performed exercises, aimed at the development of this particular motor ability; and vice versa, it was possible to exclude the exercises or reduce their dosage to a minimum, if the level of development of this motor ability was high enough.

At the same time, the effectiveness of the experimental method of training of young gymnasts for exercises with objects was determined by three criteria:
- degree of development of SPhT (Figure 1);
- quality of performing competitive exercises with objects (Figure 2);
- effectiveness of competitive performance.

The degree of development of SPhT and SMT was determined by testing conducted before and after the pedagogical experiment. In accordance with the results of preliminary testing of the special-motor qualities, it was found that there are no significant differences between the results of control exercises performed by EG and CG gymnasts (Figure 1, Table 1).

Comparative analysis of the data obtained from preliminary and final testing shows a reliable increase in the results in all control exercises of EG and CG gymnasts.
Fig. 1. The results of 4 control tests of SPhT for the gymnasts of experimental and control groups.

Table 1. The results of preliminary and final control tests on the SPhT of experimental (EG) and control (KG) group gymnasts (M±δ)

| №  | Control Tests (score)                        | EG        | CG        | t   | P    |
|----|--------------------------------------------|-----------|-----------|-----|------|
| 1  | Jump rope twist                            | 5.5±0.20  | 8.10±0.21 | 2.95| <0.01|
| 2  | Split between two chairs                    | 7.0±0.27  | 8.7±0.32  | 2.65| <0.05|
| 3  | Holding legs without gripping: forward, to side | 8.1±0.32  | 8.6±0.4  | 1.7 | >0.05|
| 4  | 180° equilibrium with grip: forward, side, backward | 7.8±0.22  | 8.8±0.22  | 1.8 | >0.05|
| 5  | 90° leg raises on gymnastic wall for 30 sec. | 7.7±0.17  | 9.2±0.21  | 1.65| >0.05|
| 6  | Double under jump rope drills for 30 sec.    | 8.1±0.32  | 9.7±0.23  | 2.5 | <0.05|
| 7  | Backward tilt with grip (score)             | 7.4±0.21  | 9.7±0.27  | 2.7 | <0.05|
| 8  | Forward tilt with a bench                   | 7.0±0.19  | 8.7±0.21  | 2.1 | <0.05|
| 9  | Running 30m.                               | 7.35±0.2  | 8.27±0.2  | 1.75| >0.05|
| 10 | SPhT Average                               | 7.32±0.2  | 8.87±0.2  | 2.45| <0.05|

At the same time, at the final stage of scientific research, the absolute result of experimental group gymnasts exceeds the control data by an average of 10.8%.

To determine the quality of competitive exercises with objects at the end of the pedagogical experiment, a method of expert assessments is used. Signs of the standard technique proposed by L.A. Karpenko (2003) were used along with the scale of errors for each element, which allowed agreement on the opinion of experts. As a result the following was concluded:

1. Regarding all the control exercises and official competitions, the results of EG gymnasts are reliably increased and most significantly exceed the data of the control group by the end of the experiment (Figure 2).

2. With an equal number of technical errors, CG gymnasts made significantly more errors of coordination nature (Table 2, Figure 3).

3. EG gymnasts mostly make insignificant technical errors, while CG gymnasts make significant ones, mainly in terms of technique itself (1, 2, 7).

Since the main task in preparing young gymnasts for exercises with objects is the quality of their performance at the competitions, the results of the championship of the Specialized Children's Youth Sports School of the Olympic Reserve were analyzed at the end of the experiment. The CMS standard was met by 8, MS standard by 9 EG gymnasts, while only 4 CG gymnasts met the requirements of CMS and 3 CG gymnasts met the requirements of MS. This fact also confirms the effectiveness of the developed method.
Fig. 2. The results of the 4th rhythmic gymnastics competition for both examined groups of gymnasts.

Table 2. Results of preliminary (X-2009) and final (X - 2010) competitions of Experimental (EG) and Control (CG) gymnasts groups

| №  | Types of all-around | EG          |                  | CG          |                  | t   | P     |
|----|--------------------|-------------|-----------------|-------------|-----------------|-----|-------|
|    |                    | X-2018      | X - 2019        | X-2018      | X - 2019        |     |       |
| 1  | Ribbon             | 19.21       | 21.81           | 18.95       | 20.81           | 2.2 | <0,05 |
| 2  | Hoop               | 19.08       | 21.81           | 19.15       | 20.24           | 2.6 | <0,05 |
| 3  | Ball               | 19.23       | 22.30           | 19.35       | 20.91           | 2.8 | <0,05 |
| 4  | Mace               | 19.97       | 22.53           | 19.10       | 20.81           | 3.2 | <0,01 |
| 5  | Average            | 19.04       | 22.11           | 19.13       | 20.71           | 2.1 | <0,05 |

Conclusions. In accordance with the result of the work done, special physical qualities were determined and the level of technical skill required for gymnasts to successfully work with objects was revealed:

- it is proposed to classify errors in the manipulation of objects made by gymnasts during exercises with them;
- the disadvantages of the existing training method of gymnasts were identified; an experimental method of training 12-14 year old gymnasts for exercising with objects was developed;
- the high effectiveness of the application of the experimental method was proved in comparison with the method that is widely used today.

Fig. 3. The results of concluding (main) all-around competitions for both examined groups (September 2019)
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