

Features of the improved methodology of pedagogical control of physical preparedness of athletes in aesthetic gymnastics

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Purpose: determine the most effective method of pedagogical control of physical preparedness of athletes 12–14 years old, engaged in aesthetic gymnastics.

Material & Methods: in the experiment involved twenty athletes 12–14 years old, engaged in aesthetic gymnastics. Theoretical analysis and generalization of scientific and methodical literature was carried out, pedagogical methods of research, medical and biological methods of research, methods of mathematical statistics.

Results: the complex of exercises of pedagogical control of physical preparedness of gymnasts at the stage of basic specialized training in aesthetic gymnastics is developed, theoretically and experimentally proved.

Conclusions: advanced complex is a rational systematization of the means of pedagogical control in aesthetic gymnastics, which will allow gymnasts to progress and have high results in the sport of higher achievements.

Keywords: pedagogical control, physical readiness, aesthetic gymnastics, physical qualities, female athletes.

Introduction

The basis for the management of the training process is pedagogical control. With its help, they receive information about the training of athletes, the correctness or mistakenness of pedagogical reception, which ultimately enhances the quality of the training work [1; 7; 8].

Pedagogical control is carried out by the method of control tests with the help of special exercises or tests. The main criteria for assessing the level of development of physical fitness athletes in aesthetic gymnastics are:

- simplicity and accessibility of control exercises for all those involved;
- testing should be conducted under the same conditions for all gymnasts;
- it is necessary to adhere to a certain order of carrying out of control tests, such as exercises on flexibility, an estimation of speed-strength qualities, coordination, function of balance and vestibular stability, force, endurance [5].

Aesthetic gymnastics is a relatively new and very entertaining sport, based on stylized, natural movements of the whole body. This sport is little studied [9].

For successful development and quality performance of exercises it is necessary to develop and improve physical qualities [2]. In the aesthetic gymnastics the following physical qualities are distinguished: coordination, flexibility, strength, speed, jumping, balance, endurance. This is described in detail in the international rules for aesthetic gymnastics. The disadvantage of at least one of the above physical qualities is punished by the judging panel [9]. Control over the development of physical qualities will improve the level of sports

training for gymnasts, apply more advanced training systems and, as a result, improve athletic performance. The relevance of the chosen topic is determined by the requirements of the practice of sports associated with improving the effectiveness of the training process in aesthetic gymnastics [2–4].

Purpose of the study: to determine the most effective method of teaching pedagogical control of physical preparedness athletes 12–14 years engaged in aesthetic gymnastics.

Material and Methods of the research

The following research methods were used in writing the work and carrying out the research: theoretical analysis and generalization of scientific and methodological literature, pedagogical methods of research (pedagogical observation, special pedagogical testing, pedagogical experiment), medical and biological research methods (morphological parameters: body length, mass body, chest circumference, respiratory system parameters: VC, cardiovascular parameters: heart rate, blood pressure), mathematical methods statistics.

Studies were conducted during the 2016–2018 academic year in Kharkov. The main experiment was attended by 20 female athletes of 12–14 years of age who are engaged in groups of specialized basic training in children's sports gymnastics. As a result of the preliminary testing, the gymnasts were divided into two groups of 10 people: control and experimental.

At the initial stage of the studies, it was necessary to carry out a comparative analysis of the morphological parameters (body length, body weight, chest circumference) of the gymnasts, as well as functional indices (VC, HR, SBP, DBP) for the selected age category. Given the difference between some gymnasts in two years (12 and 14 years), this stage was mandatory to determine the feasibility of further research. Student's t-test was used for this analysis. The data obtained by the gymnasts

aged 12–14 years did not exceed the maximum value of the t-test index – 2,04 (according to S. V. Nachinsky) [6], that is, their morphological indices have no significant differences. This proves the possibility of using the same pedagogical control tools for gymnasts of this age group.

Next, a traditional set of control standards was chosen to determine the physical preparedness of gymnasts – 14 test exercises, which are conducted on one training day and are aimed at determining the level of physical preparedness. The selected tests are held annually in the Youth College of Rhythmic Gymnastics and generally accepted. When testing the group, a statistical analysis of the test results was carried out, which showed a high level of variability. This fact is explained by the congenital data of the gymnasts and indicates the need to take into account the individuality factor of athletes and apply individual approaches to physical activity planning and when setting technical elements. Thus, a correlation analysis was carried out to determine the level of interconnection of elements performed by gymnasts, which allowed for more detailed statistical information on the physical fitness of gymnasts. The range of values of the correlation relationships between the indicators of motor qualities and capabilities is as follows: [0,60; 0,97]. This analysis showed that all exercises should be included in the gymnasts physical training program at the stage of specialized basic training, since the correlation matrix has a close, positive and direct proportional relationship, that is, they are directly related to each other [2].

Results of the research and their discussion

For the main study, it was decided to divide a group of gymnasts into two equal groups of 10 girls each. For the reliability of the further experiment, a comparative analysis of the primary indices of physical preparedness of the gymnasts of the control and experimental groups was carried out according to the Fisher criterion. Figure 1 shows the distribution curves of the results of the primary study to the gymnasts of the control and experimental groups.

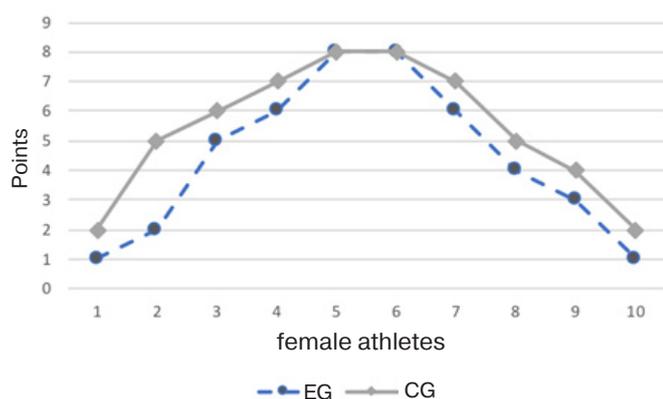


Fig. 1. Distribution of the results of primary studies of the observational experiment of gymnasts CG (n=10) and EG (n=10)

This analysis showed that the control and experimental groups are homogeneous. After previous studies gymnasts continued to train in their usual mode.

At the end of the initial stages of the research, it was decided to finalize and improve the traditional complex of control exercises, taking into account the received indices of the previous

testing of gymnasts and taking into account the specificity of aesthetic group gymnastics.

During the experiment, the volume of loads in the control and experimental groups was the same, but the physical training program in the EG was experimental.

The next pedagogical control of physical preparedness of gymnasts was held after 6 months. The control group of gymnasts, as in the previous testing, performed 14 test standards. The experimental group performed an advanced set of exercises, in which 18 control standards were proposed, divided into 9 exercises a day. That is, the gymnasts of this group surrendered the specifications for two days.

A set of tools for pedagogical control of physical fitness of gymnasts, based on a combination of exercises aimed at determining the level of development of physical qualities.

The complex offered 18 control exercises, which are performed by gymnasts for two days.

On the first day athletes perform 9 test tasks aimed at revealing the level of development of flexibility and strength:

1. Bridge stand. P.P. – stand, legs apart, hands up. Run cities with the maximum deflection. Measure the distance from the heels to the end of the third finger, cm.

2. "Tilt forward, standing on the bench." P.P. – the main counter on the gym bench. Tilt down, trying to reach the floor with your hands. Measure the distance from the plane of the bench to the end of the third finger, cm.

3. "Twine from a support". Run the twine on the right (left) leg and the transverse twine from the support. Measure the distance from the groin area to the floor, cm.

4. "Translation of the stick". P.P. – Stand the legs apart, gymnastic stick down. Translation gymnastic stick with centimeter markings from front to back and back. Measure the distance between the hands by twisting the stick with straight hands, cm

5. "Angle in the ordinary hang". P.P. – on the Swedish wall. Angle content. It is counted as the content in seconds before the point of lowering the legs below the right angle, s.

6. "Lifting the trunk back". P.P. – lying on the stomach, legs are fixed on the width of the shoulders, hands behind the head. Raising the trunk to the vertical. The number of correctly executed in 20 s, counts is counted, number of times.

7. "Pistols". P.P. – standing right (left) sideways to the Swedish wall, grip at the level of the belt, left (right) hand to the side.

1–2. Squat on the right (left), left (right) forward.

3–4. Climbing jump up.

5–8. Same.

Counts the number of jumps by 10 cm and return to full sitting, number of times.

8. "Push-ups". P.P. – Lying on the knees. Bending and bending of the hands. The number of correctly executed movements, number of times is taken into account.

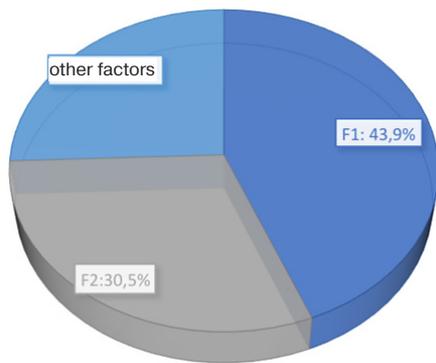


Fig. 2. Factor structure of traditional control exercises to determine the physical preparedness of the gymnasts of the control group

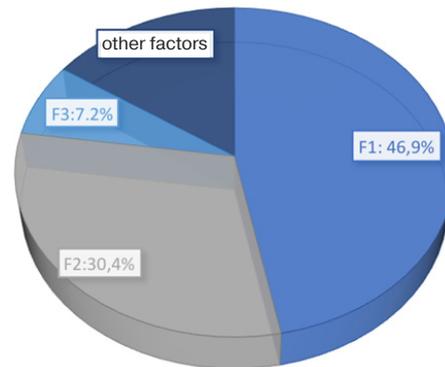


Fig. 3. Factor structure of the proposed complex of control exercises, aimed at determining the level of physical preparedness of gymnasts

On the second day, gymnasts also perform 9 test assignments that provide information on the level of development of speed, speed-strength abilities, coordination abilities, balance and endurance functions:

1. "Running 30 m". Running from a high start to 30 m (acceleration), s.
2. "Leap in length". Leap from the place with a push of two feet. Measures the distance from the socks in the starting position to the heels after landing, cm.
3. "Leap in height". Leap in height (Abalakova) – the gymnast wears a belt with a centimeter tape, which, going down, passes through a bracket attached to the floor. By extracting a centimeter tape in the jump by a jerk of two with a semicircle, the height of the jump is determined, cm.
4. "Slopes". P.P. – handstand up. 10 bends forward until the fingers touch the floor. The execution time is fixed, s.
5. "The emphasis is squatting – emphasis is lying". P.P. – The main rack. The emphasis is on sitting down, the rest resting, the emphasis is sitting down, P.P. Counts the number of repetitions in 20 seconds, the number of times.
6. "Roll Back". P.P. – main rack. 5 somersaults forward, 5 jumps without leaving the place. The quality of leaflets, jumps, and scores is assessed.
7. "Extraction back". P.P. – Stand on the right (left) leg. Left (right) straight leg from behind grab with hands. The time is fixed, without going off and changing the posture, s.
8. Passet. P.P. – Stand on the right (left) leg. Left (right) bend forward, pressing the foot to the knee joint of the supporting leg, arms up, eyes closed. Measures the time content without going off and changing the posture, s.
9. "Double". Jumping rope with a double turn on two legs with straight legs in the air. The number of times without regard to time, the number of times.

To prove the effectiveness of the pedagogical control tools used and the degree of informativeness of both the traditional complex and the complex proposed by us, factor analysis was carried out. According to the results of factor analysis, the tra-

ditional set of exercises was 74,4% (Figure 2).

The complex developed by us is informative and effective at 84,5%. The results of the factor analysis of the developed complex of control exercises are shown in Figure 3.

Thus, we can conclude that the developed set of exercises is 10,1% more informative than the traditional approach of pedagogical control of the physical preparedness of athletes, is used in the Youth Artistic Gymnastics.

Conclusions

Assessment of the level of development of physical preparedness of athletes is important for determining the effectiveness of the training process, objectively demonstrates the indicators of physical development, and also provides an opportunity to adjust training programs in a timely manner.

A set of pedagogical control tools has been developed that includes both traditional physical exercises and exercises proposed for the first time.

The difference between the two complexes is the rational systematization of the means of pedagogical control. On the first day, the gymnasts do strength exercises after the exercises for flexibility, is rational in terms of physical fitness. On the second day gymnasts consistently perform exercises that allow to determine the level of development of speed, speed-strength abilities, coordination abilities, equilibrium functions and endurance.

Control of physical readiness at the stage of specialized basic training is the main component of the training process, which will allow gymnasts to progress successfully and have high results in the sport of higher achievements.

To date, a set of exercises has been successfully introduced into the system of training gymnasts of the Youth College of Rhythmic Gymnastics and is actively used in practice.

Prospects for further research. In further studies, it is planned to experimentally investigate the effectiveness of the program, according to which the experimental group was preparing for tests of an improved method of pedagogical control of physical readiness.

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