Special aspects of coordination ability development of 7–8 year-old acrobatic rock'n'roll athletes

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Purpose: to determine the dynamics of development of coordination abilities of 7–8 years old acrobatic rock'n'roll athletes.

Material & Methods: following research methods were used: theoretical analysis and generalization of data from special scientific and methodological literature; pedagogical observation; pedagogical testing; methods of mathematical statistics.

Results: results of a pedagogical study of the development of the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes indicate a significant increase in the indicators of coordination abilities, which confirm that the use of special exercises is an effective approach in the training process.

Conclusion: comparison of the dynamics of statistical indicators of final testing of acrobatic rock'n'roll athletes showed an increase in all tested indicators.

Keywords: coordination ability; athletes; acrobatic rock'n'roll; testing.

Introduction

Acrobatic rock'n'roll – is a complex coordinated sport that is a synthesis of dance and acrobatics. In the performance of competition program is very important manifestation of coordination abilities of athletes [1; 3]. Coordination abilities can be defined as a set of human properties, manifested in the process of solving motor tasks of different coordination complexity and determine the success of controlling motor actions and their regulation. In connection with the complex character of coordination abilities, naturally, there is no generalized indicator of the level of their development [5]. For this, a number of criteria are used, the most important of which are:

– during the development of the new movement, or some combination – than it is shorter, the higher the coordination abilities;

– time required to rebuild their motor activities in accordance with the changing situation. Under these conditions, the ability to choose the most optimal plan for a successful solution of the motor task is considered a good indicator of coordination capabilities;

– biomechanical complexity of the motor actions performed or their complexes (combinations).

It is established that coordination abilities ensure economical expenditure of energy resources of young athletes, which affect the amount of their use, since the muscular force, precisely dosed in time, space and as it is filled, and the optimal use of the corresponding phases of relaxation lead to rational expenditure of forces [2; 4; 5].

Literary sources do not fully cover the development of the coordination abilities of 7–8 year-old acrobatic rock'n'roll athletes. In the training process with acrobatic rock'n'roll is not at the proper level, attention is paid to their development.

Despite this, our study of the specifics of the development of the coordination abilities of 7–8 year-old acrobatic rock'n'roll athletes is topical [5; 7].

The purpose of the research

To determine the dynamics of development of coordination abilities of 7–8 years old acrobatic rock'n'roll athletes.

Objectives of the study:

1. To study the problems of developing the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes.

2. Determine the content and features of the formation of coordination abilities among 7–8 years old acrobatic rock'n'roll athletes.

Material and Methods of the research

The study was conducted from september 2016 to march 2017, the study used the following research methods: theoretical analysis and generalization of data from special scientific and methodological literature; pedagogical observation; pedagogical testing; methods of mathematical statistics. 16 acrobatic rock'n'roll athletes were tested at the beginning and at the end of the study.

Results of the research and their discussion

At the beginning of the school year, in mid-september, the first testing of the development of the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes was conducted,

Table 1

The results of the initial testing of the development of the coordination abilities of 7−8 years old acrobatic rock'n'roll athletes (n=16)

№ c. u.	Indicators				
	Shuttle run (s)	Static equilibrium (s)	Throwing and catching the ball (number of times)	Reflection the ball from the floor (number of times)	Jumping rope (number of times)
1.	14,9	10,0	12	9	15
2.	15,7	9,3	14	9	14
3.	15,0	8,8	13	7	11
4.	15,6	9,5	9	8	16
5.	13,7	10,2	11	7	13
6.	16,4	8,9	10	10	12
7.	15,4	8,3	12	9	12
8.	14,6	9,4	11	9	11
9.	14,9	10,1	11	10	14
10.	14,7	9,4	13	9	15
11.	15,4	8,7	12	8	10
12.	15,7	9,6	10	7	15
13.	13,8	10,3	12	6	14
14.	16,5	9,0	9	11	11
15.	15,2	8,2	11	8	11
16.	14,5	9,6	12	10	12
$\overline{X}_1 \pm m$	15,12±0,19	9,33 ± 0,17	11,37 ± 0,35	9,18±0,35	12,87 ±0,53

which allowed to determine their initial level. Test results are presented in the table 1.

During pedagogical observation, the training process with acrobatic rock'n'roll was conducted in accordance with the curriculum.

In the study of the development of the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes, we used exercises in the training and educational process. The training process of rock'n'roll athletes was conducted according to the traditional method.

In mid-march, we conducted repeated testing on the same tests and in the same sequence. Test results are presented in the table 2.

To determine the changes in physical fitness indicators during the school year, we used Student's t-test to compare the indicators at the beginning and at the end of the study (table 3).

Comparison of the initial and final testing has shown growth in all tested parameters (figure 1–5). All changes in the indicators for all tests are statistically reliable (P<0,05).

Table 2

The results of the final testing of the development of the coordination abilities of 7−8 years old acrobatic rock'n'roll athletes (n=16)

№ c. u.	Indicators				
	Shuttle run (s)	Static equilibrium (s)	Throwing and catching the ball (number of times)	Reflection the ball from the floor (number of times)	Jumping rope (number of times)
1.	14,8	10,5	14	11	17
2.	15,5	9,9	16	12	15
3.	14,7	11,0	15	9	12
4.	15,5	10,0	13	10	18
5.	13,4	10,9	12	8	15
6.	16,0	9,5	10	13	13
7.	15,2	9,4	14	11	15
8.	14,2	10,1	13	11	13
9.	13,3	12,2	16	14	19
10.	14,1	10,4	17	15	17
11.	14,3	12,1	17	11	13
12.	14,2	11,4	15	13	19
13.	12,4	12,9	14	10	18
14.	15,0	11,5	13	15	15
15.	14,5	10,6	16	14	16
16.	13,2	12,3	15	13	17
$\overline{X}_2 \pm m$	14,39 ± 0,22	10,9 ± 0,23	14,37± 0,38	11,87± 0,49	15,75 ± 0,51

The dynamics of development of coordination abilities of 7–8 years old acrobatic rock'n'roll athletes (n=16)

№	Tests	At the beginning of the study $\overline{X}_1 \pm m$	At the end of the study $\overline{X}_2 \pm m$	Increase,%	t_p	t_{rp}	P
1.	Shuttle run, s	15,12±0,19	14,39 ± 0,22	4,8	2,51	2,12	<0,05
2.	Static equilibrium, s	9,33 ± 0,17	10,9 ± 0,23	14,4	5,48	2,12	<0,05
3.	Throwing and catching the ball (number of times)	11,3 ± 0,35	14,37± 0,38	21,3	5,81	2,12	<0,05
4.	Reflection the ball from the floor (number of times)	9,18±0,35	11,87± 0,49	22,6	4,46	2,12	<0,05
5.	Jumping rope (number of times)	12,87 ±0,53	15,75 ±0,51	18,3	3,91	2,12	<0,05

Considering the average changes, it can be noted that the increase in the indicators of development of coordination abilities among 7–8 years old acrobatic rock'n'roll athletes is uneven.

The smallest increase (4,8%) of the indicators was found in the shuttle race, characterizing the development of space-time parameters, where the following results were recorded: $\overline{X}_1 \pm m=15,12 \pm 0,19$; $\overline{X}_2 \pm m=14,39 \pm 0,22$.

In static equilibrium, characterizing the level of cessation of macroscopic mechanical systems and body movement, the increase was 14,4%, where the following results were recorded: $\overline{X}_1 \pm m=9,33 \pm 0,17$; $\overline{X}_2 \pm m=10,9 \pm 0,23$.

In throwing and catching the ball, characterizing the level of ori-entation in space, the growth rate – 21,3%, the following results were recorded: $\overline{X}_1 \pm m=11,3 \pm 0,35$; $\overline{X}_2 \pm m=14,37 \pm 0,38$.
The highest growth rates (22,6%) were recorded in the "reflection the ball from the floor" test, which characterize the level of orientation in the space, where the following results were recorded: $\overline{X}_1 \pm m=9,18 \pm 0,35$; $\overline{X}_2 \pm m=11,87 \pm 0,49$.

The indicators of jumps rope (18,3%), which characterize the level of development of coordination of movements, have changed in the direction of improving the results: $\overline{X}_1 \pm m=12,87 \pm 0,53$; $\overline{X}_2 \pm m=15,75 \pm 0,51$.

Conclusions

1. Analysis of scientific and methodological literature indicates an insufficient level of research on the development of
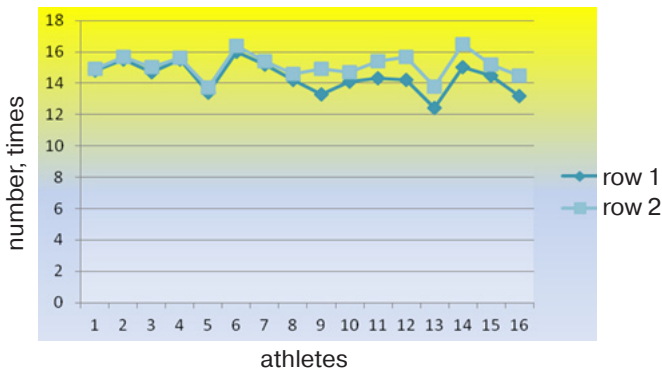

Fig. 1. Results of the test "shuttle run": *row 1 – indicators of initial testing of athletes; row 2 – indicators of final testing of athletes.*
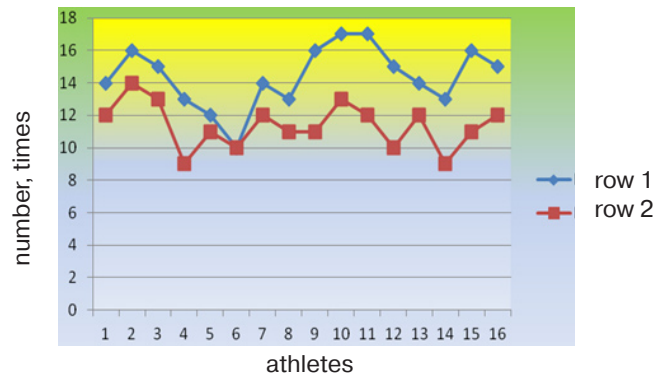

Fig. 3. Results of the test "throwing and catching the ball": *row 1 – indicators of initial testing of athletes; row 2 – indicators of final testing of athletes.*
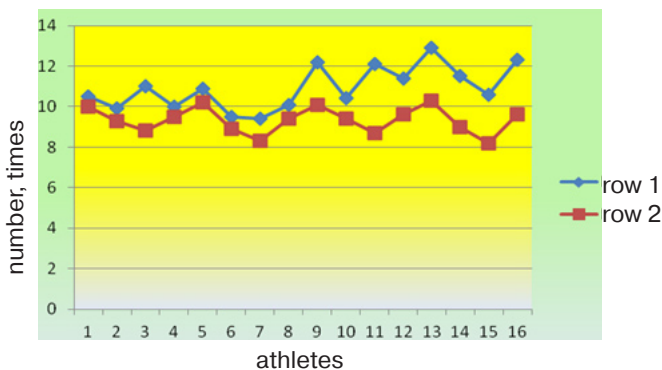

Fig. 2. Results of the test "static equilibrium": *row 1 – indicators of initial testing of athletes; row 2 – indicators of final testing of athletes.*
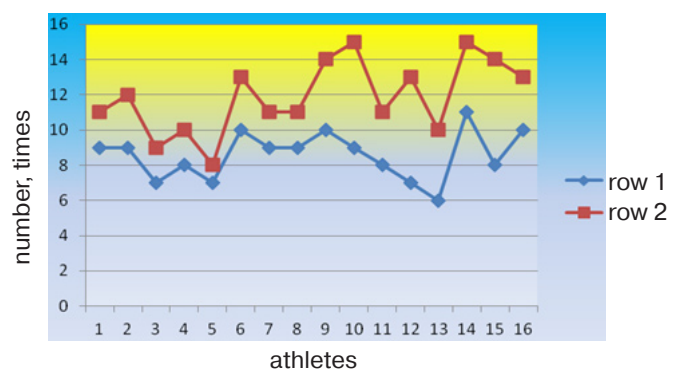

Fig. 4. Results of the test "reflection the ball from the floor": *row 1 – indicators of initial testing of athletes; row 2 – indicators of final testing of athletes.*
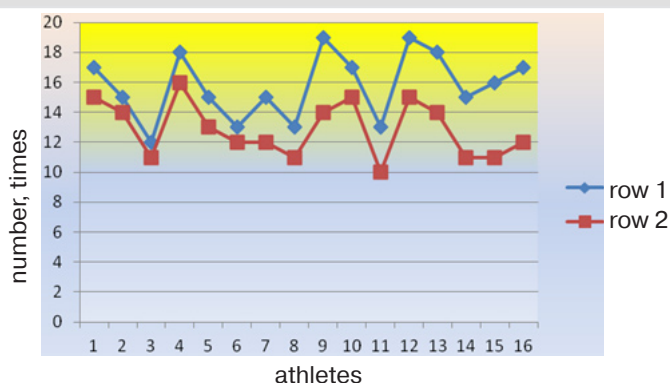
Fig. 5. Results of the test "jumps rope": *row 1 – indicators of initial testing of athletes; row 2 – indicators of final testing of athletes.*

the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes.

2. The developed content of the training process is aimed at developing the coordination abilities of acrobatic rock'n'roll athletes.

3. Considering the average changes, it can be noted that the increase in the indicators of development of coordination abilities among 7–8 years old acrobatic rock'n'roll athletes is uneven.

Revealed the smallest increase (4,8%) rates in the shuttle run: $\overline{X}_1 \pm m = 15,12 \pm 0,19$; $\overline{X}_2 \pm m = 14,39 \pm 0,22$.

In static equilibrium, the increase – 14,4%, the following results were determined: $\overline{X}_1 \pm m = 9,33 \pm 0,17$; $\overline{X}_2 \pm m = 10,9 \pm 0,23$.

In throwing and catching the ball, the growth rate was 21,3, the following results were noted: $\overline{X}_1 \pm m = 11,3 \pm 0,35$; $\overline{X}_2 \pm m = 14,37 \pm 0,38$.

The best possible growth rates (22,6%) were recorded in the test "reflection the ball from the floor", the following results were noted: $\overline{X}_1 \pm m = 9,18 \pm 0,35$; $\overline{X}_2 \pm m = 11,87 \pm 0,49$.

Jumping rope – the increase was 18,3%: $\overline{X}_1 \pm m = 12,87 \pm 0,53$; $\overline{X}_2 \pm m = 15,75 \pm 0,51$.

Prospects for further research will be directed to the search for new means and methods for developing the coordination abilities of 7–8 years old acrobatic rock'n'roll athletes.

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