

FEATURES OF DEVELOPMENT OF COORDINATION ABILITIES FEATURES OF ATHLETES IN SPORTS AEROBICS IN INITIAL TRAINING

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Annotation. *Purpose:* to develop theoretically and experimentally justify the methodology of development of coordination abilities of athletes aged 7-9 years involved in sports aerobics. *Material:* the study involved 20 participants (7-9 years). 8 athletes performed the test tasks. The choice of tests carried out on the basis of the analysis of the dominant motor mode competition exercises. *Results:* It was found that the coordination abilities are necessary in the development of speed, density, and the number of running technical elements. With more than a significant increase in performance test tasks that characterize: musicality, coordination, dynamic balance. The basic tools, methods, techniques, and requirements for the exercises. The level of development of coordination abilities. *Conclusions:* the author's method of development of coordination abilities include: rational choice of means and methods of training impact on their similarities and differences with the target competitive activity.

Keywords: coordination, ability, aerobics, training, young.

Introduction

Growth of sport aerobics' popularity, which is a new, non-traditional kind of sports, among different strata of Ukrainian population, increasing of international competition in this sphere require theoretical analysis and scientific-practical foundation of methodic of many years' training of different age sportsmen [1; 3; 11; 16 et al].

Sport aerobics is a kind of sports with complex coordination. Exercises of sport aerobics are fulfilled at rather high temp, under clear musical rhythm. By its character all movements are quick, accurate and require comprehensive coordination in time and space. Sportsmen fulfill many different complex elements, including steps in rotation, turns, jumps and so on.

Changes of trends in competitions' rules cause changes in structure of sportsmen's competition programs. This process is progressing partially by means of sportsmen's mastering of complexly coordinated elements and combinations. That is why one of specificities of exercises' fulfillment is dependence of sport results in this kind of sports on sportsmen's coordination. [4; 12; 19; 20 et al.].

In the opinion of authors [2; 5; 6; 14 et al.], it is necessary to start training human coordination abilities in junior school age. The older children are the longer is the process of their coordination abilities' training. In sport aerobics age of first significant success is earlier than in most other kinds of sports, but high results can be achieved only after intensive trainings. That is why, in connection with complicating of sport techniques, shortening of trainings terms even junior sportsmen face with high requirements to their coordination abilities. It is known that exactly stage of initial training is, to large extent, a determining one for further sport perfection [6; 9; 10; 17 et al.].

At present, practice of sport dancing supplies examples of mastering of rather complex elements in junior age. That is why, from first steps of training it is necessary for training process to ensure quick and qualified mastering of movements and was oriented on training of complex elements. However, in training process it is necessary to consider morphological and physiological characteristics of children's organism [2; 6], to avoid over-training, attempts to replace qualified construction of training process by excessive scope of trainings, repetitions and so on.

However, in spite of great number of scientific-research works [5; 7; 13; 15 et al.], devoted to development and improvement of junior sportsmen's coordination, the problem of the most purposeful training of the mentioned abilities of junior sportsmen at the stage of initial training has been insufficiently solved. All these make evident demand in studying of junior sportsmen's coordination abilities and in working out of purposeful trainings' methodic at stage of initial preparation for increasing of junior sportsmen's sportsmanship.

The research has been fulfilled in compliance with topic of combined plan of scientific and research works in sphere of physical culture and sports of Ministry of education and science of Ukraine for 2011-2015 by topic 2.2.4. "Improvement of mechanisms of sportsmen's motion functioning's control".

Purpose, tasks of the work, material and methods

The purpose of the work: to work out theoretically and prove experimentally methodic of improvement of 7-9 years old sport aerobic sportsmen's coordination abilities.

The tasks of the research:

1. Determination of coordination abilities' level of sport aerobics' junior sportsmen.
2. Fulfillment of comparative analysis of the received results.

Material and methods of the research: the researches were conducted on base CJSS No.3, Kharkov. In experimental part 20 sportsmen of 7-9 years old age participated. Pedagogic experiment, in which two groups (control – 10 children and experimental group – 10 children) took part was conducted during year. We used the following complex of scientific *methods of research:* pedagogic methods (analysis and generalization of scientific-methodic literature data, pedagogic observation, pedagogic testing); methods of mathematical statistic.

Results of the research and their discussion

In training process of junior sportsmen, who specialize in sport aerobics, we tested author's methodic. We applied systemic approach to using of training means, determined level of coordination abilities and conducted comparative analysis of results of control and experimental groups' sportsmen [8]. In combined training process we kept gradually increasing dynamic of training loads, used general training means, special physical training (special exercises, structurally close to main motion skills, required for fulfillment of competition compositions; complexes of preparatory exercises for technical elements; means of acrobatic and choreography).

At the beginning and at the end of experiment in main and control groups we conducted testing. We determined level of coordination abilities of sportsmen, specialized in sport aerobics. На початку і по завершенню експерименту в основній і контрольній групах було проведено тестування.

Selection of tests for evaluation of sportsmen's coordination abilities we carried out on the base of analysis of dominating motion regime of competition exercise and specificity of sport aerobics; on the base of age characteristics of junior sportsmen, requirements of competitions' rules; on the base of earlier conducted researches in kinds of sports with complex coordination (gymnastic and calisthenics, acrobatic and etc.), considering commonly accepted tests [18]. We offered the following tests:

1. Shuttle run 3x10 meters with moving around filled balls (sec.);
2. Running to filled balls with numbers (sec.);
3. Jump with turn (points);
4. Static balance by methodic of Bondarevskiy (sec.);
5. Dynamic balance with fulfillment of turns on gymnastic bench (sec);
6. Walk with clapping the certain rhythm (points);
7. Two forward tumbles, jump with 360° turn (points);
8. Exercises for determination of motion memory (sec).

Results of testing of junior sportsmen's coordination abilities are give in table 1.

Table 1

Indicators of coordination abilities of control and experimental groups ($\bar{X} \pm m$) (n=10; p<0.05)

№	Indicators of coordination abilities	Control group				Experimental group			
		ID*	FD	abs.	%	ID	FD	abs.	%
<i>Space-time and dynamic parameters of movements</i>									
1	Shuttle run 3x10 meters with moving around filled balls (sec.)	10.66±0.09	10.54±0.3	0.12	1.2	10.75±0.08	10.66±0.06	0.09	0.84
<i>Orientation in space</i>									
2	Running to filled balls with numbers (sec.)	23.31±1.02	22.91±0.2	0.4	1.7	23.41±1.06	23.22±1.3	0.19	0.81
3	Jump with turn (points)	1.68±1.72	1.73±1.02	0.05	2.8	1.87±1.2	1.89±0.02	0.02	1.05
<i>Static and dynamic balance</i>									
4	Static balance by methodic of Bondarevskiy (sec.)	1.78±0.38	1.82±0.8	0.04	2.2	1.83±0.82	1.85±0.02	0.02	1.08
5	Dynamic balance with fulfillment of turns on gymnastic bench (sec)	6.57±0.24	6.32±0.4	0.25	3.9	6.7±0.43	6.63±0.03	0.07	1.05
<i>Music abilities</i>									

№	Indicators of coordination abilities	Control group				Experimental group			
		ID*	FD	abs.	%	ID	FD	abs.	%
6	Walk with clapping the certain rhythm (points)	3.67±1.12	3.87±1.02	0.2	5.2	3.77±1.21	3.82±1.01	0.05	1.3
<i>Coordination of movements</i>									
7	Two forward tumbles, jump with 360° turn (points)	2.75±1.02	2,86±1,04	0.11	3.9	2.76±1.01	2.84±1.01	0.08	2.8
8	Exercises for determination of motion memory (sec)	18.84±0.6	18.97±0.7	0.13	0.7	18.43±0.75	18.55±0.05	0.12	0.6

*ID – initial data (at the beginning of experiment);

FD – final data (at the end of experiment).

The obtained results witness that in both groups there is increasing of coordination abilities' indicators. However, the most substantial changes took place in main group. Analysis of received data permits to say that implementation of author's experimental methodic in practice of training process shows that junior sportsmen, who were trained by author's methodic, reached higher level of coordination abilities, which effectively influence on training and perfection of technical elements of sport aerobics.

In fig. 1 we present changes of coordination abilities' level in groups.

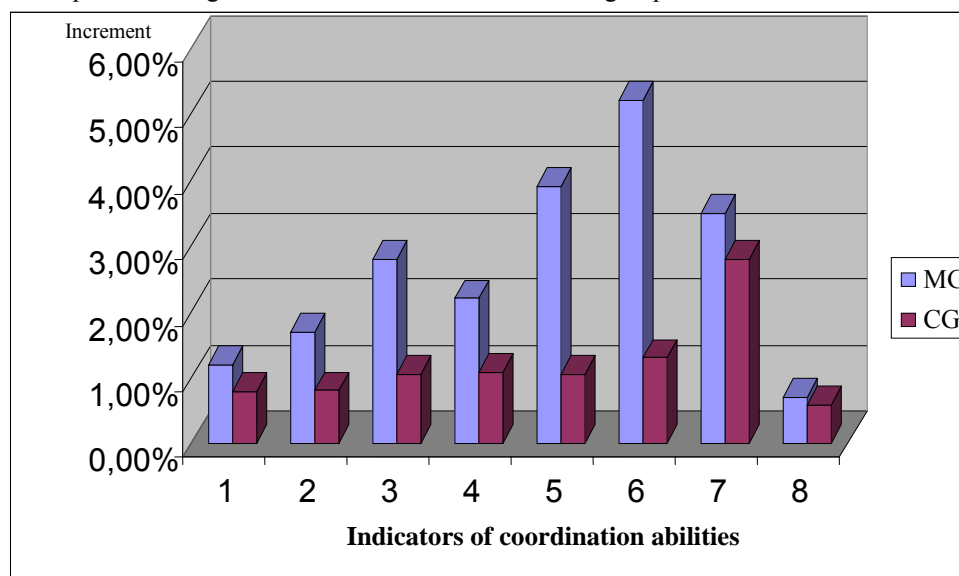


Fig. 1. Dynamic of increment of junior sportsmen's coordination abilities

The fulfilled comparative analysis of coordination abilities' indicators of main and control groups' junior sportsmen shows variability of indicators that evidently witnesses about complex motion functioning of sport aerobics and about importance of coordination abilities' development. Actual proof of it is increasing of indicators in both groups. But the most significant increment of indicators was registered in main groups in the following tests: №6 – music bents of junior sportsmen (5.2%), №7 – coordination (3.5%), №5 – dynamic balance (3.9%) and №3 – orientation in space (2.8%). Such dynamic is explained by the fact that sense of rhythm and coordination as abilities accurately reproduce and purposefully change speed-power and space-time parameters condition, to large extent, level of sport success in sport aerobics.

We also detected significant rates of increment in experimental group's sportsmen in indicators of tests №4 and №2 (static balance and ability to orient in space) – 2.2% and 1.7% accordingly. It is explained by the fact that in

sport aerobics ability to keep balance is manifested with quite different positions of body, in static and dynamic conditions, with and without support.

In the process of the research we noticed reducing of time for overcoming distance 3x10 meters (shuttle run with moving around filled balls) from 10.66 sec. to 10.54 sec. that was 1.2% of increment. Substantial changes took place with indicator №8 (control of movements' coordination) – 0.7%. All these indicators can be conditioned by specificity of sport aerobics, because all abilities are manifested with fulfillment of technical elements of this kind of sports.

The received results witness about rational application of training methods and means, naturally and reasonably introduced in general training process of junior sportsmen, who specialize in sport aerobics. It has been proved that the author's methodic facilitates effective development of coordination abilities at this stage of training.

Conclusions

We have determined level of coordination abilities. We also determined that coordination abilities are necessary for development of quickness, density and quantity of fulfilled techniques that set still higher requirements to physical condition of junior sportsmen – representatives of sport aerobics. Sportsmen of main and control groups showed improvement of indicators of coordination, music abilities, orientation in space, balance and ability to control space-time characteristics.

Comparative analysis of coordination abilities of both groups' sportsmen showed that as per indicators of all tested parameters sportsmen of main group had advantage over sportsmen of control group

The worked out author's methodic of coordination abilities' development includes rational choice of means and methods of training influence in the aspect of their similarity and difference form targeted competition functioning, in respect to which training of junior sport aerobics' sportsmen is built.

The prospects of further researches imply to study peculiarities of coordination abilities' training of qualified sportsmen at stage of sport perfection.

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Cite this article as: Bodrenkova I.A. Features of development of coordination abilities features of athletes in sports aerobics in initial training. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 2014, vol.12, pp. 13-17. doi:10.15561/18189172.2014.1203

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Received: 25.05.2014

Published: 15.06.2014