SCIENTIFIC AND METHODOLOGICAL STUDY IN TRAINING YOUNG SWIMMERS AT THE INITIAL STAGE

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Abstract

An important role in the sports training of some qualities belongs to the effective way that presents a complex, well-organized process, which includes pedagogical, psychological, sociological, medico-biological research methodology, based on which we highlight prices and individual skills related to gender requirements of chosen sport.
The selection uses a complex system of criteria to identify the subjects that are closest to this ideal model. Sports selection is a long-term mixed process, which can be effective only if at all stages of training the athlete will be respected his individuality, using various research methods.

Key words: *stages of preparation, selection, testing, motor skills, coordination abilities*

1. Introduction

At the current stage, when the sports results in the swimming tests already exceed the human capacity as a species, it is very current to monitor, correct and rectify the functional status of the swimming athletes. The evolution of national and international achievements in swimming, inevitably, creates the need to develop existing methods, as well as creating new information techniques to guide the process of sports training (Platonov, 2000; Potdevin & Pelayo, 2012).

The **object of the research** is the completion of the scientific-methodical aspects of sports selection of young swimmers at the initial stage of training.

The **purpose of the research** consists in the scientific-practical study, systematization and concretization of the sports selection methodology for swimming at the preliminary stage of preparation.

Assumption. It was assumed that based on the multilateral study of the given problem will increase the efficiency of determining the most informative tests for qualitative selection in sports swimming and, thus, will improve the training of performance athletes.

Research objectives:

- Studying the literature on the selection of young athletes at the initial stage of training in various sports.
- Researching the most important selection criteria in sports swimming during the preliminary stage of preparation.
- Determining the most adequate tests for assessing the predispositions of movement for practicing sports swimming at the initial stage of preparation.

2. Material and method

In order to achieve these objectives, the following research methods were applied: the study and analysis of the specialized literature, the interview with the specialists, the anthropometry, the testing, the testing of the predispositions for sports swimming, the pedagogical experiment.

3. Results and Discussions

Sports selection is a complex process that takes place over a long period of time. The process lasts from the initial stage of training young athletes to the final stage of improvement and achievement of high sports performance (Barynina & Vaitsekhovskii, 1992). The methodological and theoretical bases of the problem of orientation and selection in sports are analyzed in the works of world-class researchers: Balsevich V.K., 1980; Bril M.S., 1983; Gujalovskiy A.A., 1986; Bulgakova N.J., 1986; Platonov V.N., 1986 etc.

The determination of the athlete's endowment is made up of the following general visions. The endowment is hereditarily determined by the innate aptitudes, referring to the structural, functional and psychological differences, which determine the human activity and behavior. Hereditary skills differ by a small change, but their training and education lead to a certain goal.

It should be mentioned that the human body is under the control determined by the genetic structure, and under the influence of learning and education, the predispositions turn into skills (Arden, Trzaskowski, Garfield, & Plomin, 2014).

It is recommended that the selection and completion of learning-training groups be carried out in 3 stages: initial, basic and concluding (Maglischo, 2003; Platonov, 2000).

During the experiment, methodological-pedagogical research was carried out in order to study the practical experience of coaches in organizing and promoting the instructive-educational process of young athletes. To perform this experiment were used: anthropometry to assess physical development based on measuring height, body mass, lung volume, breathing retention on inspiration and expiration.

In this context, the sociological survey of coaches from the sports schools of Municipality of Chisinau in the Republic of Moldova was undertaken, where 25 people took part in this action.

Based on the results of the sociological survey conducted among the coaches and athletes of the above-mentioned schools, it was determined that in the first stage of selection in the preliminary training groups priority is given to children with highlighted anthropometric symptoms, reflecting their morphology: body length upper and lower back, torso, shoulder and forearm, thigh and calf and the size of the sole and palm.

The data presented in Table 1 reflect the physical development of swimmers that differ depending on age and sexual development.

Table 1 *Indices of physical development of young swimmers of both sexes at the age of 7-15 years (average data)*

Physical development parameter	***Sex***	***Age (years)***								
		7	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***
Height (cm)	***M***	130	135	140	144	148	153	160	170	176
	F	131	135	139	142	145	154	161	163	167
Weight (kg)	***M***	28	31	34	36	39	39	43	50	59
	F	28	30	31	33	38	43	49	51	57
Chest excursion (cm)	***M***	62	64	69	71	73	76	81	88	92
	F	61	62	64	68	71	76	81	84	87
Lung volume (ml)	***M***	1400	1500	2400	2500	2800	3200	3600	4600	5300
	F	1200	1370	2000	2300	2600	3000	3400	4100	4200
Hand dynamometer (kg)	***M***	12	14	19	22	24	28	33	39	44
	F	12	13	16	18	21	24	28	31	33

Girls start training earlier than boys, most sports girls - at the age of 7-9, and sports boys - at the age of 9-11.

At the initial stage of sports training, when the components of sports availability of children and adolescents are established, the basic method applied by the coach is the visual appreciation of the individual. For this, the 3-point system is used (Table 2). The effect of studying and perfecting the technique of sport swimming style largely depends on strength, speed, flexibility, endurance and other abilities.

Table 2 ***Assessment of somatic features, points***

Features	***1 point***	***2 points***	***3 points***
Muscles	poorly pronounce	average	developed
Tone	poorly developed	medium	well developed
Fat deposits	small	average	large
Bone structure	narrow	average	solid
The shape of the back	normal	normal	straight
The shape of the thoracic cage	flat shape	cylindrical	conical
The shape of the legs	normal	in the shape of the letter "X"	in the shape of the letter "O"
The shape of the sole	normal	flat shape	straight

Table 3 presents the results of testing the beginner level of motor skills for swimming.

Table 3 *Results of testing the motor skills of swimmers of both sexes, determining the usefulness of sports swimming occupations (average data)*

No. crit.	*Control test*	*Sex*	*Age (years)*				
			7-8	*9-10*	*11-12*	*13-14*	*15-16*
1	*Running 30m (sec)*	*M*	5.8-6.1	5.6-59	5.4-5.6	5.2-5.4	5.1-5.1
		F	6.0-6.2	5.7-6.1	5.5-59	5.4-5.7	5.3-5.6
2	*High jump (cm)*	*M*	30-32	34-39	41-45	46-48	50-54
		F	28-30	32-35	37-40	41-43	45-47
3	*Standing long jump (cm)*	*M*	130-142	145-155	160-175	170-185	185-208
		F	115-130	135-140	145-155	160-170	170-185
4	*Throwing the medicine ball (3kg) behind the head in a sitting position (cm)*	*M*	160-190	235-260	270-320	340-385	390-425
		F	155-180	190-210	215-250	275-310	320-350
5	*Flexion and extension of the trunk (no.)*	*M*	10-12	15-25	30-35	36-40	45-52
		F	8-10	10-15	20-25	25-30	35-41
6	*Appreciation of flexibility (bending forward, mm)*	*M*	10-15	15-25	20-30	35-50	51-60
		F	15-20	25-40	30-50	50-75	75-85
7	*Appreciation of the flexibility of the humeral joint (rotation with the stick, cm)*	*M*	70	65	63	62	64
		F	70	65	60	60	62
8	*Running 300m (sec)*	*M*	78-74	66-70	64-68	60-64	58-60
		F	82-88	70-75	68-70	60-68	58-61

Based on research, we determined that the maximum relative strength in girls after 15 years decreases slightly, and in boys it continues to progress. This criterion can be explained in terms of early genital maturation.

4. Conclusions

1. In swimming sports schools in the Municipality of Chisinau, the assessment of sports skills of children and adolescents is made by coaches based on the use of pedagogical, medical-biological, psychological and social research methods, which allow highlighting indices of quality, abilities and possibilities to deal with sports swimming until performance results are obtained.

2. In assessing the aptitudes of children and pre-adolescents for enrollment in initial training groups, special attention shall be paid to movement skills and the possibilities of coordinating movements.

3. In general physical training, in addition to strengthening health, complex education of movement skills is achieved as a result of very successful swimming activity.

4. The coaches of the sports schools from Chisinau mentioned in the paper pay

special attention to the initial training, to the preparatory exercises for the efficient acquisition of swimming procedures.

5. In the initial training groups are included first of all children who have hereditary predispositions of rapid movement, flexibility, endurance and coordination. Body height should be higher than average and high if there is proportionality between the upper and lower limbs, maximum oxygen utilization, body resistance to flexure. It was found that at the initial stage of training in sports swimming, students who achieved high results characterized by general development demonstrate special skills they possess for 2-3 years of training, compared to their peers who had low initial results.

6. A special importance in the initial selection of the groups, is given to the health, the general training according to the indices of hydrodynamics, morphofunctional and the individual psychic possibilities.

7. According to basic research on the peculiarities of the nervous system, coaches take into account that the power of movement, dynamism and balance of nervous processes allow the mastery of high-level sports swimming procedures, resistance to overweight and motivation to achieve the goal and objectives, during the training activity of young swimmers.

8. During training, coaches use various methods and means to form individual qualities that together determine the achievement of performance results.

Bibliography

1. Arden, R., Trzaskowski, M., Garfield, V., and Plomin, R. (2014). Genes influence young children's human figure drawings and their association with intelligence a decade later. *Psychol. Sci.* 25, 1843–1850. doi: 10.1177/0956797614540686
2. Barynina I.I., Vaitsekhovskii S.M. (1992). The aftermath of early sports specialization for highly qualified swimmers. *Fitness Sports Rev Int*.; 27: 132-133.
3. Maglischo, E. W. (2003). *Swimming Fastest*. Champaign, IL; Leeds: Human Kinetics.
4. Platonov V.N. (2000). Tehnicheskoe sovershenstvovanie plovcov. V: Plavanie. Kiev: Olimpijskaja literatura, s. 103-115. (Platonov V.N. 2000. Technical improvement of swimmers. In: *Swimming*. Kiev: Olympic Literature, p. 103-115)
5. Potdevin F., Pelayo P. (2012). *Manuel de natation(s). Developper ses connaissances*. Paris: Amphora, p. 286.