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Peculiarities of a backstroke swimming technique acceleration in elementary education

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Purpose*: to research the possibility of intensification and improvement of the efficiency of swimming training for adults by use of accelerated learning backstroke swimming techniques.*

Material & Methods: *the study involved a total of 43 people aged 30–40 years. Applied: analysis and generalization of scientific and methodological literature; analysis of the learning process of swimming training for adults; development and approbation of an accelerated backstroke swimming technique on the base of the recreational sports complex LLC «Technocom» (Kharkiv, Author's swimming school of U. Blyzniuk), teacher observation, experiment.*

Results*: a study shows that developing of swimming skills of people tested occurs faster and more effectively if the accelerated procedure is used. Backstroke swimming skill formation time for examinees: check group had 26 to 36 lessons, there were 25 to 32 exercises with and without use of supporting means; the experimental group had12 to 24 lessons with use of 15 exercises without supporting means.*

Conclusions*: as a result of the experiment, it was found that the use of the proposed accelerated training method allows to intensify backstroke swimming learning process for people aged 30–40, due to training course total duration reduction (2 times) and number of exercises used, and also allows to master quicker the main improving distance according to age of the engaged.*

Keywords: *recreational swimming, training, terms, adults, accelerated method.*

Introduction

Swimming – one of the most widespread, the favourite and constantly developing sports in our country. Today swimming it also a fine mean of active recreation. In many countries of the world swimming is recognized as one of mass and improving means along with such cyclic exercises as walking, run, skies. The increasing role of swimming in comparison with other types of physical activities is in the versatile impact of water on a human body, which is connected with physical, thermal, chemical and mechanical properties of water. During swimming human overcomes water resistance, and it imposes considerable requirements to function of breath, blood circulation, trains physiological mechanisms of thermal control, develops muscles force. In water the metabolism in an organism becomes more active and more energy spends and that is successfully used for decrease in body weight [1; 4; 6–7; 9; 12].

Swimming – an effective remedy of prevention and treatment of cardiovascular and respiratory systems diseases. It is shown also for bearing violations, consequences of the musculoskeletal system injuries. Swimming includes a number of cyclic exercises. All main of muscle groups take part in work, load of them is distributed evenly. In water exercise are carried out smoothly, with a big amplitude, without the body weight pressure upon the musculoskeletal system. It reduces a static stress of muscles and excludes risk of injuries receiving. Swimming increases human body resistance to impact of air temperature fluctuations, tempers the person, develops resistance of an organism to catarrhal diseases [1; 7; 9; 12].

Perfection of biomechanical structure of swimming, availability of mastering its technique, opportunity to dose loading, favorable psychological effect do this type of physical exercises especially valuable to adults.

Among forms of purposeful application of physical culture means for strengthening of health and preservation of active longevity of adults classes in training in swimming in groups of improving swimming gain round [1; 6; 9; 11].

The subject offered for consideration is caused by that quite large number of the adults wishing to visit such groups, but badly swimming or who aren't able to swim annually meets. Mass training in groups of improving swimming has the features since it is necessary to teach adults. The trainer needs to consider anatomical, physiological and psychological features of this contingent. Besides, as a result of numerous and unsuccessful attempts to learn to float, at one a peculiar physiological barrier was already developed, others have hydrophobia, aren't sure of the forces and opportunities. All these factors can affect terms and quality of swimming training of this contingent [1; 2; 4; 6–9; 11].

The intensive rhythm of modern life, numerous duties and cares of the person aged 30-40 leads to that he seeks to seize skill and to gain improving effect from swimming lessons in the shortest time. Publications analysis shows that traditionally created and applied training technique adapts and improves taking into account features of the persons trained. Various sequence of swimming styles training and various terms of their development are offered in practice. Taking into account

variability of trainings terms, one of the priority and actual directions of the theory and practice of swimming training of this contingent are questions of optimization of terms and training technique acceleration [2–6; 8; 9].

The purpose of the research

To research the possibility of intensification and improvement of the efficiency of swimming training for adults by use of accelerated learning backstroke swimming techniques.

Main objectives of research:

1. To generalize experience on training in swimming of adults.

2. To analyze the training methods used to swim and to develop an improved methodology.

3. To reveal a positive effect in formation of swimming skill as a result of accelerated training technique application.

Material & Methods

For solving the main objectives we used the following methods of researches: analysis and generalization of scientific and methodical literature; analysis of educational process of swimming training of adults; approbation of the offered and developed methods of training in swimming with the of the lessons conducted on the basis of a Tekhnokom LLC sports complex in Kharkov (Author's swimming school Y. Bliznuk) organization; pedagogical supervision, experiment, mathematical statistics.

Results and discussion

People who aren't able to swim (i. e. don't float independently 15–25 m) are enlisted on swimming trainings. The program for training of the adults who aren't able to swim is based on a breast stroke and front crawl swimming techniques. Persons aged 30–40 years more often choose a front crawl, and more senior – a breast stroke (since he doesn't demand very high mobility in shoulder and ankle joints). It is best of all to study both ways. When you've already learned swim front crawl and brest stroke (on a breast and on a back), it is possible to alternate them, raising thereby a versatility of influence on the organism. However the final choice of a way remains for engaged since many people have a coordination predisposition to certain movements – in particular, to more effective performing feet movements in front crawl or breast stroke. When determining a way of swimming, age and individual abilities to assimilation of any one way are considered (since adult and elderly people are more capable to assimilation of one swimming way). To establish which way of swimming will easier master a task to try to swim in the known ways is given. Observations and fixation of various hands and feet movements of in original ways of swimming are made, thus, special attention is paid on what feet movements examinees are carrying out. When carrying out our researches, as the main way of swimming skill instilling we used swimming on a back. There are many kinds of such swimming which don't have sports value, however their applicability is indisputable. After long and tiresome stay in water a person can lay down on a back and have a rest. Way of swimming on a back is very economic, and his technical bases are easily transferred to other sports ways [1; 2; 4; 6–10].

Research was conducted during the period from September, 2014 to June, 2015 on the basis of a sports complex of LLC «Tekhnokom» in Kharkov (Author's swimming school of Y. Bliznuk). 43 persons aged 30–40 years which aren't able to swim took part in experiment. Those, who have the initial swimming preparation (ISP) equal from 0 to 5 m – 24 persons. Trainees with IPP of equal 0 m – the 19 persons. Not a one of examinees had skills in back crawl swimming. All trainees were divided into control and experimental groups with 21–22 people in each. Classes in the swimming pool with both of groups were given by same trainer-teacher. Classes frequency – 3 times a week, duration – 45 minutes. Process of training in control and experimental groups consisted of three stages: introductory, initial and the main.

In control group a back crawl swimming technique was studied in traditional way For development of swimming skill at an introductory stage, the preparatory exercises were offered for development with water allowing trainees to examine physical properties of water, to develop feeling of water support, ability to find orientation on water. Trainees got used to feeling of water by walking on swimming pools bottom, knee-bends in water, using of a prone position on a breast and on a back with the supporting means and without ones (poles, noodles, swimming plates were used as the supporting means), lowering of the person in water with closed, and then with opened eyes, sliding.

The introductory stage consisted of 4 lessons, 10–12 exercises were used. At the initial stage started studying back crawl swimming technique and mastered moving in water on a distance of 25 m. This stage was divided into two steps. At first there was a training in movement on a water surface: the engaged were trained in back swimming with the help of feet on shallow part of the pool with and without support; then the movements with support and without it on deep part of the pool were carried out. At the second step of this level the movements of hands with breath were studied; the movements of feet, hands with breath; back crawl swimming in full coordination. Duration of the elementary stage made 12 lessons, 15–20 exercises were used. The main stage began after all trainees could independently, without supporting means, overcome distance of 15–25 meters with back crawl swimming. This stage intended for improvement of the studied way of swimming, and also for preparation for the main health-improving distance overcoming, according to age (for this age category length of an health-improving distance makes 600–800 m). Duration of the main stage made 10 lessons. On the last lesson of this stage there was a test of 30-minute swimming for range of the floated distance, which helped to define the stability of the examinees acquired skill. Duration of all three studying stages for the control group amounted to 26 lessons [2,4,5].

Development of floating skills and acceleration of the learning process are possible both with the help of auxiliary technical means (pole, "noodles", rubber rings and other supporting means), and without any of those [2-5,8-11]. For the purpose of acquiring swimming skills a method of accelerated teaching of backstroke swim was applied to the control group. This method had been successfully used for teaching students [8]. The most effective exercises were selected out of many different suggested in handbooks [2-6, 8], according

to the experience of many years of teaching. The main criterion was to avoid using any kind of supporting means. During the introductory stage the control group was given following exercises:

– "Float on the back", hands "locked" (slowly lay back, with hands joined. Keep this position for a while, then relax hands, dis-join and place along the body. Joining hands behind the back provides stability due to a lower center of gravity.)

– Figure-eight loops with one or two hands (draw eights horizontally. Breathing should be in sync with hands)

– Figure-eight loops with both hands over deep water (legs down, not touching the bottom. Inhale on diverging hands, exhale on converging)

– Bottom push gliding, hands along the body (arbitrary breathing. Advanced option: starting position with hands stretched above the head)

– Side push gliding on the back, hands along the body (inhale, hold breath; push with the legs and glide until stop, use mouth breathing. Advanced option: starting position – straight hands over the head)

– Bottom push gliding + figure-eight loops.

Using these exercises, in just 2 days students were able to float in horizontal position by themselves and breathe normally, as well as perform various gliding exercises on their back

During the elementary stage following exercises were given:

– Figure-eight loops with translation ("float on the back", hands "locked"; perform figure-eight loops at the level of hips, swimming several meters. Rhythmic breathing, in sync with hands movement; legs strait and relaxed)

– Movements of legs (perform "float on the back", hands "locked", alternating movements of legs in the vertical plain)

– Figure-eight loops and movements of legs (perform "float on the back", hands "locked"; perform figure-eight loops at the level of hips, swimming several meters with strait legs; then swim several meters working with legs like when swimming crawl. Rhythmic breathing, in sync with hands movement)

– "Torpedo" on the back

– Gliding, figure-eight loops and legs movements as in crawl stroke (push, glide 1-2 meters, perform "eights" with hands, then add legs movement. Rhythmic breathing, in sync with hands movement

– Back stroke without taking hands out of the water (lay back, perform several figure eight loops with hands, add legs movement. Bend hands in water and reach up above the head, with palms facing up, after that perform the stroke down to the hips)

– Back stroke swimming with a simultaneous stroke to hips

– Faking alternating stroke on shallow water

– Swimming crawl on the back with full body control

The elementary stage was over after 5 lessons, since every student could confidently cover the distance of 25 meters swimming on their back, and could stay afloat for more than 20 minutes. For both experimental and control groups the

Table 1

Comparison of the results of traditional back stroke crawl training (with the help of supporting means) and the accelerated training methodology (without any supporting means) applied to adults (30-40 years old)

Metrics	Groups		t	p
	CG (n=22)	EG (n=21)		
Initial swimming ability (m)	0–5	0–5		
Initial stage				
Lessons	4	2		
Exercises	10–12	6		
Elementary stage (distance 25m)				
Lessons	12	5		
Exercises	15–20	9		
Кол-во метров	17±1,65	27±2,38	3,46	<0,01
Main stage (recreational distance 600-800m)				
Lessons	10	5		
Exercises	10	10		
Distance covered during a 30 minute test (m)	657±17	747±9	4,68	<0,001
Total number of lessons	26	12		

main stage has started, when students had to improve their swimming technique to cover the main recreational distance according to their age. In the experimental group the duration of the main stage was 5 lessons. Just like in the control group, a 30 minute swimming test was conducted to determine the quality of acquired skills.

The test has shown that students of both control and experimental groups have acquired the necessary skills for back stroke crawl swimming (see Table 1).

As can be seen from the Table 1, the experimental group had much more success at acquiring skills of back stroke crawl swimming. The total duration of the course for the control group was 26 lessons, 35–42 exercises were used - both with and without supporting means. In the experimental group much less time was needed to gain the skill of back stroke crawl swimming. The three stages were covered in 12 lessons, 25 exercises without supporting means were used. The elementary stage test of swimming 25 meters with back stroke crawl showed unsatisfactory results in the control group of 17 m in average, while in the experimental group the result was 27 m (avg). The average result of the final 30 minute testing in experimental group was 747 m, 90 m more than in the control group (675 m).

Conclusions

As a result of the experiment, it was found that the use of the proposed accelerated training method allows to intensify backstroke swimming learning process for people aged 30–40, due to training course total duration reduction (2 times) and number of exercises used, and also allows to master quicker the main improving distance according to age of the engaged.

Prospects for further research

It is necessary to develop detailed practical guidance for coaches working with the contingent that will speed up the process of teaching adults to swim and improve the course efficiency.

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