Conclusions

Realizarea programului de calcul a vitezelor de înot de referință pentru niveluri diferite de impact metabolic şi a modelului corespondenței zonelor de efort în concordanță cu particularitățile de putere şi de capacitate ale sistemelor energetice permit, prin aplicarea lor, selectarea vitezei optime pentru fiecare zonă de efort de rezistență, în acord cu starea de antrenament.

Informațiile furnizate de studiile de caz, realizate pentru înotători cu specializări diferite, se pot constitui în date de referință pentru înotătorii specializați pe aceste probe. Totuşi, ele nu pot fi decât valori orientative deoarece reactivitatea biologică la stimulii de antrenament este individualizată.

Utilizarea programului LACTAT.PAS permite obținerea de informații utile în ceea ce priveşte:

- eficacitatea antrenamentului efectuat;
- calitatea şi structura stării de antrenament curente;
- prognoza potențialului de a realiza o performanță sportivă;
- concluzii necesare pentru pregătirea viitoare, în special în legătură cu scopurile pregătirii, intensitatea efortului şi succesiunea metodelor de antrenament care urmează a fi folosite.

Bibliografie

1. BĂDESCU, V., (2006), Monitorizarea antrenamentului înotătorilor prin repere biologice semnificative, Ed. Universitaria, Craiova.
2. BOMPA, T.O., (2002), Teoria şi metodologia antrenamentului – periodizarea, Editura EX PONTO CNFPA, Bucureşti.
3. GALERU, O., (1998), Studiu cu privire la dezvoltarea rezistenței aerobe în proba de 200m mixt la copii de 11-12 ani (nivel II), Revista „Studii şi cercetări ştiințifice în educație fizică şi sport", Bacău, nr.2, din 1998, pag. 84.
4. MADER, A., HECK, H., HOLLMANN, W., (1976), Evaluation of lactic acid anaerobic energy contribution by determination of post exercise lactic acid concentration of ear capillary blood in middle-distance runners and swimmers, Paper presented at the Proceedings - International Congress on Physical Activity Sciences, Quebec City.
5. MADSEN, O., LOHBERG, M., (1987), The lowdown on lactates: how two leading practitioners use lactate data in training their swimmers, Swimming Technique, 24, pg. 21-26
6. MAGLISCHO, E.W., (2003), Swimming fastest, Ed. Human Kinetics.
7. OLBRECHT, I., (2000), The science of winning, Ed. Luton, England.

OPTIMIZING THE PERFORMANCES OF SWIMMERS CHILDRENS, IN SWIMMING, BY EDUCATION OF COUPLING, COMBINING AND REGULATION OF THE SPECIFIC STROKES

Victor BĂDESCU[1]
Ovidiu GALERU[2]
[1]University of Pitești
[2] "Vasile Alecsandri" University of Bacău

Key words: swimming, butterfly stroke, coordination.

Abstract

The ability to combine and couple the movements makes possible the coordination of different motor structures. It confers the global movement fluency, removing the possible interferences, which can arise between the partial actions the complex activity is made up of[2,3,4,7]. The rhythmicity is a fundamental physiological phenomenon, expression of some specific characteristics of the nerve cell. Due to it, even the arrhythmic movements can become rhythmic actions. Based on this characteristic a gradual concentration of the stimulus in the active muscles is produced, which ensures the saving of effort.[3,4,7]

The purpose of research

The purpose of research lies with the improvement of the optimization method of the propellant movements in the swimming procedure, by introducing some training means which lead to the synergic action of these with a view to increasing swimming efficiency.

Organization and development of research

The subjects of the research are 9 year old swimmers, enrolled at the Piteşti Swimming Sports Club.

The experiment was developed between March 9th 2009 and July 26th 2009 and it was carried out over a period of 21 weeks.

The experimental training program, for the optimization of the propellant movements in the stroke procedure by improving the ability of combining and coupling of the movements and the ability to regularize the movements, involved the following analytical exercises for:

1. *The armstroke;*
2. *Exercises for the coordination of armstroke with the dolphin kick and with breathing.*

All the exercises related to the armstroke were achieved with the help of the float. The exercises for the coordination of the armstroke with dolphin kick were achieved at a ratio of 2 leg kicks at an arm cycle.

Within the weekly schedule the following exercises have been included[1,5,6,8]*:*

- Daily, for the warming-up (1000 m), analytical exercises for technique and awareness of movements.
- Three times a week (1500 – 2000 m), exercises of movement regulation (exercises of acceleration, deceleration, alternative acceleration and deceleration, alternation of tempo);
- Three times a week (400 – 600 m), speed exercises.

Also, it must be specified that the largest part of the swimming volume of this training process was achieved by using the left arm (all the subjects are right-handed), which, following the tests, proved to have a reduced efficiency.

The tests were done in three phases:

- Test 1 - March 9th - 15th 2009;
- Test 2 - May 18th - 24th 2009;
- Test 3 - July 20th - 26th 2009;

All the swimming tests applied were done starting in the water by pushing into the wall.

The following tests have been applied:

1. Butterfly stroke, on 50 m;
2. Dolphin kick, with float, on 50 m;
3. Butterfly armstroke, with float, on 50 m;
4. Butterfly left armstroke, on 50 m, with float;
5. Butterfly right armstroke, on 50 m, with float;

Results

The analysis of the statistical significance of the difference between the averages of the results indicates the fact that these are not significant for the butterfly left and also for right armstroke, with float, on 50 m event within the test $T_{12.}$

All the other results are significant for a threshold which is over 99 percent, so it is significant for the Physical Education and Sports field.

Event	t and p	Test 1	Test 2	Test 3
Dolphin kick, on 50 m	$t_{12\,/}$ p	2,703 / p < 0.01		
	$t_{23\,/}$ p		5,582 / p < 0.01	
Butterfly armstroke, on 50 m	$t_{12\,/}$ p	2,426 / p < 0.01		
	$t_{23\,/}$ p		4,305 / p > 0.05	
Butterfly left armstroke, with float, on 50 m	$t_{12\,/}$ p	1,935 / p > 0.05		
	$t_{23\,/}$ p		4,918 / p < 0.01	
Butterfly right armstroke, with float, on 50 m	$t_{12\,/}$ p	2,092 / p > 0.05		
	$t_{23\,/}$ p		4,203 / p < 0.01	
Butterfly stroke, on 50 m	$t_{12\,/}$ p	5,284 / p < 0.01		
	$t_{23\,/}$ p		5,369 / p < 0.01	

Chart no. 1 – The results of the "t" test

The coefficients of correlation existent between different rows of values have also been calculated, for a series of events, in order to appreciate the way in which the final results from the 50 m butterfly stroke have been influenced by the ability of coupling, combining and regulation of the specific movements of this stroke.

Test	Dolphin kick/ Armstroke	Dolphin kick / Butterfly stroke	Left armstroke/ Right armstroke	Armstroke/ Butterfly stroke
1	0,426	0,439	0,419	**0,934**
2	0,278	0,362	**0,528**	**0,912**
3	**0,544**	**0,723**	**0,634**	**0,979**

Chart no. 2 – The results of the Spearman correlation

The analysis of the correlation coefficients indicates that the existent relations between the dolphin kick and the armstroke and, also, the butterfly stroke are almost the same following the training process, but for the test T_{23} the correlation coefficients indicates significant relations.

The force of the relations between armstroke and butterfly stroke is significant for T_{21} and T_{23} tests, upper than 0,5.

It was noticed that the relation between the armstroke and the butterfly stroke has maintained its strength, the values varying around 0,9.

It was noticed that the relation between the action of the left arm and the right arm has had an upward evolution, reaching a value of 0,634.

Conclusions

1. The upward evolution of the correlation coefficient between the actions of the arms in the butterfly swimming (0,419 - 0,528 – 0,634) indicated the efficiency of the training program oriented mostly towards the training of the arm less efficient.
2. We believe that the training of the ability to combine and couple the movements makes possible the coordination of different motor structures and thus, the increase of performance is obtained also in the absence of the effort ability increase by increasing the efficiency of the motor actions.
3. We believe that the study of the psychomotor components which define swimming will lead to the efficiency of the swimming technique and implicitly to the increase of performance under the conditions of saving time and energy.
4. We believe that it is necessary that the implementation of the present training ideas at the level of child swimmers be achieved with care taking into consideration the biological risks of some inadequate demands.
5. Taking into consideration the insufficiency of the scientific and methodical literature concerning the training of children, we believe that it is necessary that the scientific research get involved in this aspect too, being acknowledged the fact that of the multitude of valuable children and juniors very few reach the senior level, maybe on account of the above-mentioned reasons.

CREŞTEREA PERFORMANŢELOR, PRIN OPTIMIZAREA CAPACITĂŢII DE COMBINARE, CUPLARE ŞI RITMICIZARE A MIŞCĂRILOR SPECIFICE PROCEDEULUI FLUTURE, LA ÎNOTĂTORII COPII

Victor BĂDESCU[1]
Ovidiu GALERU[2]
[1]Universitatea din Piteşti
[2]Universitatea ”Vasile Alecsandri” din Bacău

Cuvinte cheie: Înot, procedeul future, coordonare.

Abstract

Capacitatea de combinare şi cuplare a mişcărilor face posibilă coordonarea diverselor structuri motrice. Ea conferă mişcării globale cursivitate, înlăturând eventualele interferenţe, ce pot apărea între acţiunile parţiale din care este constituită activitatea complexă [2,3.4.7].

Ritmicitatea este un fenomen fiziologic fundamental, expresie a unor proprietăţi specifice celulei nervoase. Pe baza acestei proprietăţi se produce o concentrare treptată a excitaţiei în muşchii activi, lucru ce asigură economia în efort.[3,4,7]