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Strategies Used in the Stage of Learning to Swim

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Abstract:
Introduction: The reasons that determined me to approach the topic of this paper is the importance of the correct mastery of swimming from an early age, the formation of the mentality of practicing sports in general and swimming in particular and the maintenance of optimal fitness. **Purpose**: The present study aims at theoretical and experimental research on the very important role of swimming means used in the initiation stage in children aged 5-7 years. Thus, we tried to achieve a systematization of the most effective means of learning to swim, Increasing the efficiency of the preparation of the educational instructional process requires the establishment of precise finalities, of a well-objectified and optimized action system as well as the choice of the most efficient methods and means of action. **Methodology**: The establishment of training models as well as the judicious use of the most efficient methods and means specific and non-specific to swimming must lead to the following tasks: - appropriate mastery of the basic technical elements of swimming (floating, sliding, breathing) as well as the craul swimming process, - increasing the minimum motor qualities, - demonstration of the validity of the methods used and the applicability of some tests in order to follow the qualitative development of the motor qualities. **Results**. I consider that the focus on the technical component of sports training, especially at this age, when the psycho-physiological peculiarities of the subjects allow motor acquisitions, high receptivity, plasticity of the nervous system. the basic technical elements of swimming and the craul swimming process over a distance of 25m. Following the evolution of the arithmetic mean, we can interpret it as follows: the arithmetic mean of the sample included in the research has 3.93

points in the initial test, increasing it to 5.07 points in the intermediate test. There is a progress of 1.14 points. At the final test the average of the sample is 6.91 points, so we can see an improvement in performance by 2.88 points from the initial test. Following the evolution of amplitude (W), the simplest statistical indicator, we can see that if at the beginning of the experiment, the difference between the subjects' scores was 2.70 points, it is reduced to 2.30 points in the intermediate test, that in the end it reaches 2.11 points. **Conclusion**. These results show that the value differences between the subjects fade, the subjects mastering the basic elements in swimming and the craul swimming process. Following the evolution of the standard deviation, we observe the same homogenization of the results in the investigated sample. Analyzing the evolution of the variability coefficient, we observe in this case the tendency to homogenize the value of the subjects from the point of view of recorded performances.

Keywords: learning, technical elements, systematization, models, swimming

Introduction

Swimming as a sport has become a major concern, improving as a technique and gaining more and more popularity. At the same time, the hygienic and recreational character, the need for movement of the contemporary man, educational valences, explain the interest they enjoy all over the world, being spread equally among children and mature citizens (Silviu Salgau, 2005).

I approached this topic because I consider it very important to learn to swim correctly from an early age, to form the mentality of playing sports in general and swimming in particular, and to maintain optimal fitness throughout life. I thought it would be useful to make a systematization of the most effective means of learning on the influence of technique on the acquisition of the basic elements and swimming in the craul process, (Silviu Salgau, Gheorghe Marinescu, 2005).

Increasing the efficiency of the preparation of the educational instructional process requires the establishment of precise finalities, of a well objectified and optimized action system as well as the choice of the most efficient methods and means of action (Dick Hannula, Nort Thornton, 2001).

We started to develop this system from the observation that some coaches neglect in the training of athletes the technical component of small swimmers, paying attention only to specific physical training in the water, (David Thomas 1996).

By systematically applying over three months a system of specialized algorithms for learning and consolidating the basic technical elements of swimming and the technique of the swimming process, I believe that the correct mastery of the basic technical elements can be obtained (floating, sliding, breathing), as well as the movements of the legs and arms, as well as a very good coordination of them, (Tudor, Bompa, 2003).

The importance of the paper lies in the special value of a methodical material that has the quality of synthesizing a vast problem that if it were to be observed directly in the practical process would require a long time spent on the edge of the swimming pool.

Through this paper, I provide a material that includes a series of theoretical, practical and methodical knowledge, regarding the efficiency of the means of swimming used in the initiation stage.

Methods

The experiment on the efficiency of the means of swimming used in the initiation stage of the children took place over three months, between September and November 2019, in this way I consider that the results obtained can bring conclusive conclusions.

The experiment consisted in the application of some methods, means in order to learn and consolidate the basic technical elements of learning to swim in the craul process.

For the good development of the experiment we applied three tests: initial testing, intermediate testing, final testing.

The initial testing took place on September 1, 2019. We chose this date, being one week after the start of the experiment, because we considered that the accommodation with water took place, and the children are ready to learn the basics.

The intermediate test was on October 1, 2019, considering it necessary to test in the middle of the experiment.

The final testing took place on December 1, 2019.

On the occasion of these tests we followed and noted with grades from 1-10 the evolution of the children in mastering the technique of the basic elements and the technique of the craul procedure and the completion towards the end of 25m in the craul swimming process.

The experiment was conducted with 16 children over a period of 3 months. The courses took place 3 times a week, from Monday to Friday. The age of the subjects is between 5-7 years. Based on lesson plans, their swimming skills were assessed. Throughout the experiment, children were individually corrected using exercises that were applied in the training plans.

To carry out the experiment, selected children were selected from children born between 2013-2014, in the preschool cycle and in grades 0-1 at kindergartens and schools in Arad.

The choice of subjects was made according to the following criteria:

- to be a disciplined group, to have a rhythmic presence in class
- to work according to a common plan, so that all subjects use the same means, training methods, exercises dosed differently depending on the morpho-physiological features.
- to measure progress, the statistical indicators recommended by specialized manuals were used in the initial and final tests.

Usual statistical indicators were used:

1. Arithmetic mean: $X = \frac{\sum x}{n}$

2. Amplitude: $W = X_{max} - X_{min}$

3. Standard deviation: $S = \pm\sqrt{\frac{\sum d^2}{n-1}}$

4. Coefficient of variability: $Cv = \frac{s}{x} \cdot 100$

Although the indicators used represent the minimum of the parameters used in the statistics, they can give us conclusive data on the experiment carried out.

Experimental conclusions:

The expression of the conclusions was made after quantifying the differences between the tests performed. The experiment was performed on a single group that at the initial test was considered a control sample, and at the final one was considered an experimental sample. (Horghidan Valentina 1997).

During the experiment the children were subjected to the following tests:

- horizontal buoyancy test in apnea on water
- chest slip test
- aquatic respiration test
- test on the movement of the legs in the craul swimming procedure
- test on the movement of the arms in the craul swimming procedure
- test on the coordination of arm movements with breathing
- test on coordinating the movement of the legs with the movement of the arms
- test on the coordination of the movements of the arms, legs, breathing
- test regarding the start in the craul procedure

Results

The subjects included in the research are born between 2013-2014. The distribution by sex is as follows: 12 boys and 4 girls. Considering that at this age the differences between boys and girls, from a sexual point of view are insignificant and also due to the level of training (beginners) we can consider that the investigated subjects are part of the same statistical sample.

The experimental results were ordered in tables, taken statistically and interpreted according to the methodology of physical activity science research. In order to validate the research hypothesis, the data are analyzed from a statistical point of view and of the specialized literature in the field. The evolution in learning and consolidating the basic elements of swimming and learning to swim in the craul procedure, obtained by the subjects included in the study are those in the following tables:

Table no. 1 - Scoring the technical execution

Sub-jects	The year birth	Sex (f/m)	Initial testing									
			Floa-ting	Glide	Aquatic respiration	Leg movement	The movement of the arms	Coordinating leg movement with hands	Coordination of arm movement with breathing	Coordinating legs, arms and breathing	Jum-ping	Final grade 1
1	2013	m	4	3	3	3	3	3	3	1	3	2,89
2	2013	m	5	5	4	4	5	5	3	2	5	4,22
3	2014	m	6	6	6	5	4	5	4	3	6	5,00
4	2013	m	6	5	6	5	4	4	5	3	6	4,89
5	2014	m	7	5	6	5	5	5	5	2	7	5,22
6	2014	f	4	3	4	3	4	4	3	2	5	3,56
7	2013	m	5	4	4	4	4	4	3	2	5	3,89
8	2014	f	6	5	5	4	5	4	3	3	6	4,56
9	2013	m	6	6	6	5	4	4	4	3	6	4,89
10	2014	m	3	3	3	4	3	3	3	1	5	3,11
11	2014	f	5	4	4	4	4	4	3	2	5	3,89
12	2013	f	5	5	5	4	4	4	3	2	5	4,11
13	2014	m	7	7	6	5	5	5	4	3	7	5,44
14	2014	m	4	4	4	4	3	4	4	2	6	3,89
15	2013	m	4	3	3	4	4	4	3	1	4	3,33
16	2013	m	4	3	3	3	4	4	3	1	3	3,11
Arithmetic mean												**3.93**
Amplitude												**2,70**
Standard deviation												**0,78**
Coefficient of variability												**19,08**

Table no. 2 - Scoring the technical execution.

Sub-jects	The year birth	Sex (f/m)	Intermediate testing									
			Floa-ting	Glide	Aquatic respi-ration	Leg move-ment	The move-ment of the arms	Coordi-nating leg movement with hands	Coordi-nation of arm movement with breathing	Coordi-nating legs, arms and breathing	Jum-ping	Final grade 2
1	2013	m	6	6	5	5	6	6	5	4	6	5,44
2	2013	m	7	7	7	6	5	6	6	5	7	6,22
3	2014	m	7	6	6	6	5	5	6	5	7	5,89
4	2013	m	8	6	7	6	6	6	6	4	7	6,22
5	2014	m	5	4	5	4	5	5	4	4	6	4,67
6	2014	f	6	4	6	6	6	6	5	4	6	5,44
7	2013	m	7	6	6	6	5	5	4	4	6	5,44
8	2014	f	7	6	7	6	5	5	5	4	7	5,78
9	2013	m	5	4	5	4	5	5	4	4	6	4,67
10	2014	m	6	5	5	5	6	5	4	4	6	5,11
11	2014	f	6	6	6	5	5	5	4	4	6	5,22
12	2013	f	8	7	7	6	6	6	5	5	7	6,33
13	2014	m	6	5	5	6	5	5	5	4	6	5,22
14	2014	m	5	4	4	5	5	5	4	4	5	4,56
15	2013	m	5	4	4	4	4	4	5	4	4	4,33
16	2013	m	6	4	4	6	6	5	5	5	5	5,11
Arithmetic mean												**5,078**
Amplitude												**2,30**
Standard deviation												**0,62**
Coefficient of variability												**11,90**

Table no. 3 - Scoring the technical execution

Subjects	The year birth	Sex (f/m)	Final testing									
			Floating	Glide	Aquatic respi-ration	Leg move-ment	The move-ment of the arms	Coordi-nating leg movement with hands	Coordi-nation of arm movement with breathing	Coordi-nating legs, arms and breathing	Jum-ping	Final grade 3
1	2013	m	8	7	7	7	7	7	6	6	8	7,00
2	2013	m	9	8	8	7	7	7	7	7	8	7,56
3	2014	m	8	7	7	7	6	6	7	7	8	7,00
4	2013	m	9	8	8	8	8	7	7	7	9	7,89
5	2014	f	7	6	6	5	6	6	6	6	7	6,11
6	2014	m	8	7	8	8	8	8	7	7	8	7,67
7	2013	f	9	8	8	8	7	7	7	7	8	7,67
8	2014	m	9	8	9	8	8	8	8	7	9	8,22
9	2013	m	7	7	7	6	6	6	6	6	8	6,56
10	2014	f	8	7	8	8	7	7	7	7	8	7,44
11	2014	f	7	7	7	6	6	6	5	5	7	6,22
12	2013	m	9	8	9	8	8	8	9	7	8	8,22
13	2014	m	8	8	8	7	7	7	7	7	8	7,44
14	2014	m	8	7	7	7	6	6	6	6	7	6,67
15	2013	m	7	5	5	6	5	5	5	5	6	5,44
16	2013	m	9	8	7	8	7	7	7	7	7	7,44
Arithmetic mean												**6,81**
Amplitude												**2,11**
Standard deviation												**0,59**
Coefficient of variability												**8,89**

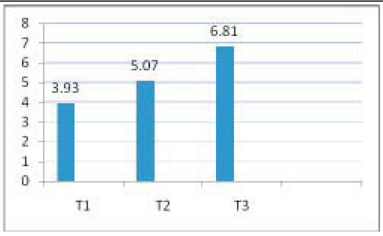	**Initial testing** **T 1**	**Intermediate Testing** **T 2**	**Final testing** **T 3**
Arithmetic mean	3,93	5,07	6,81

Figure no. 1 - Representing the arithmetic mean of the researched sample.

Following the evolution of the arithmetic mean from table 4 and figure no. 1, we can interpret it as follows: the arithmetic mean of the sample included in the research has 3.93 points in the initial test, increasing it to 5.07 points in the intermediate test. There is a progress of 1.14 points. At the final test the average of the sample is 6.91 points, so we can see an improvement in performance by 2.88 points from the initial test.

Overall, analyzing the entire period covered by the research, it is revealed that the biggest jump in results is between the second and third testing.

This fact can be interpreted as follows:

- after mastering the basic elements, the subjects improve their technique in learning and consolidating swimming in the crawl stroke
- the means used for the technical training were chosen and used judiciously

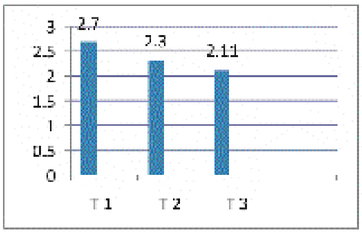	**Initial testing** **T 1**	**Intermediate Testing** **T 2**	**Final testing** **T 3**
Amplitude W	2,70	2,30	2,11

Figure no. 2 - Representing the amplitude W of the researched extension.

Following the evolution of the amplitude (W) from table 4 and figure no. 2, the simplest statistical indicator, we can see the following:

If at the beginning of the experiment, the difference between the subjects' marks was 2.70 points, it is reduced to 2.30 points in the intermediate test, that in the end it reaches 2.11 points. These results show that the value differences between the subjects fade, the subjects mastering the basic elements in swimming and the crawl swimming process.

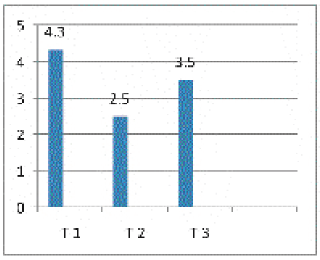	**Initial testing** **T 1**	**Intermediate Testing** **T 2**	**Final testing** **T 3**
Standard deviation	0,78	0,62	0,59

Figure no. 3 - Representing the standard deviation of the researched extension.

Following the table no. 4 and figure no.3, we observe the same homogenization of the results in the investigated sample and in the case of the standard deviation, as in the case of the amplitude. At the final measurement, this statistical indicator changes by 0.19 points.

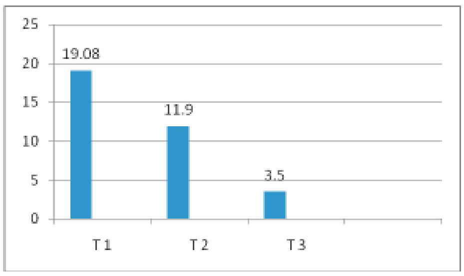	**Initial testing** **T 1**	**Intermediate Testing** **T 2**	**Final testing** **T 3**
Coefficient of variability	19,08	11,90	8,89

Figure no. 4 - Representing the coefficient of variability of the researched sample.

Analyzing the evolution of the variability coefficient (table 4 and figure no. 4), it is also observed in this case the tendency to homogenize the value of the subjects from the point of view of the registered performances. Thus, although the statistics state that between 0 and 10%, the sample is very homogeneous, except for the first and second tests, the results obtained fall within these limits. Between the first and the last test there is a decrease of the distribution by approx. 10 percent.

The homogenization of the experimental sample, detached from the analysis of the other statistical indicators used in the paper, is specific to the teams trained in a correctly directed instructive-educational process.

The analysis of the distribution indicators shows the homogenization of the experimental sample, through the prism of the quality of the swimming motor act. Progress can be seen in terms of mastering the technique of swimming.

Due to the means used in training considered as effects, both their sports evolution and the qualitative level of manifestation of the motor act of swimming are improved. This is perfectly explicable, if we take into account that technical training has a great importance in mastering the basic elements of swimming.

Finally, we can state as a result of the analysis of the collected data, that the research hypothesis is confirmed, the differences between the control sample (considered as such in the initial testing) and the experimental one (considered as such in the final testing), being significant. This is reinforced by the fact that the research period is quite short, during which there are not too many changes in the children's body.

Conclusion

Following the data recorded and statistically processed we can summarize the following:

- the results obtained from the tests performed were continuously improved, in the end the progress being obvious. The other statistical indicators considered had values specific to well-established and prepared teams.

- the appreciation of the technique, although more difficult to achieve but in our case based on a rigorous algorithm, demonstrated an improvement of the basic technical skills, which can be put on the judicious choice of independent variables.

I consider that the focus on the technical component of sports training, especially at this age, when the psycho-physiological peculiarities of the subjects allow motor acquisitions, high receptivity, plasticity of the nervous system. basic technical elements of swimming and the process of swimming in a distance of 25m (Luciela Cirla, 1999).

Of course, the rigorous quantification of the influence of technique and obtaining sports performance is difficult to achieve, but referring to the literature we consider that at this age the efficiency of the means used in the initiation stage, in learning the basics and swimming technique in the craul process must take precedence over physical, tactical and psychological training. The obtained results, both on the motor level and on the one with technical accuracy, confirm the experimental hypothesis statistically.

Finally, the means used in the initiation stage and in the technical preparation for learning to swim in the craul process consider that they have reached their goal.

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