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SWIMMING INITIATION THROUGH GAMED OF MOVEMENT

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Summary: *the research was based on using games within the swimming initiation process in preschool pupils; thus, one has accomplished more efficiently the accommodation with the water and the development of the motile ability in the water. The research comprised 2 groups: control and experiment, each of 12 children and has been done during the months of March-June 2016. The results of the research regarding motile abilities have been statistically significant in favor of the experiment group for the following tests, for $\alpha=0.05$. The most important progress between the two groups has been done in the following aspects: the number of rings taken from the bottom of the pool 2750, the distance done through sliding on the chest 1195 m, the distance done through sliding on the back 1500 m, the height from where the jump was done 74583 cm, the number of respiratory cycles done 3583. The results confirm the hypothesis highlighting the fact that the dynamic games contribute significantly to the initiation process of swimming in preschool pupils.*
Key words: *games of movement, initiation, preschool children, swimming*

Introduction

The specific of swimming training, determined mostly by doing an organized activity in a totally unusual environment, water, as well the characteristics that the physical and psychological development can imply, all impose quite a great attention on the way in which the teacher, coach or instructor selects the exercises, leads and conducts a swimming lesson.

Swimming requires a good physical condition, a correct technique and certain moral and willed characteristics such as: courage, perseverance, etc., all being done by respecting the basic physical rules adapted to the environment (Badau A. et all, 2016, p.14).

In conformity with the principle of active and conscious participation, the initiation presumes the existence of a certain conscious attitude of the children towards the instruction process, overcoming the fear of water, which represents a limitative element in learning to swim.

In conformity with the physical and psychological characteristics of the preschool children, the specialists recommend that in the swimming lesson one introduces more dynamic games adapted to the water environment that can be done on land as well, thus contributing to the body's training both on land and in water. Games with a competitional character will regard: the accommodation with the water and executing certain varied forms of the specific technique elements of swimming styles.

Badau D. (2006, p. 20) states that" the human motile behavior appears as a complex chaining of movements, attitudes or postures through which man adapts to the environment's always changing conditions.

Ervilha et all (2001, p. 292) say that there is an even greater preoccupation in understanding the behavior of human biological systems in the water, because the making of exercises and programs in this environment is increasing. Thus, understanding the influences of the physical properties of the aquatic environment becomes important in effectuating physical exercises and physiological adaptations that lie at the basis of the latter.

Referring to the motile and functional ability, as a result of the undergone studies, the identified advantages have regarded the improvement of the cardio and respiratory ability and the corporal composition as well as improving the motile qualities as strength and suppleness (Badau D. et all. 2015; Tekedhima N., et all., 2002).

To what physiological alterations are concerned, several researchers have noticed that after a program of aquatic training, the cardiac rhythm in repose has decreased keeping in the same time a blood pressure value unchanged (Badau A. et all, 2011; Broman G et all. 2006, Bocalini D.S. et all 2008).

For an efficient projection of lessons within the aquatic physical activities, the main variables that directly influence the elaboration are: "the body postures, the movement directions, the movement dynamics, the effort size, the pool's characteristics, the specialist's craftsmanship, the objects and materials, the sensations and emotions, the segmentary mobility" to which we would add the physiological, motile and somatic characteristics of the subjects and the water temperature (Badau A et all, 2016, p 47).

The increased complexity of the exercise by implicating several body segments can trigger a significant increase, in the exercised responses, explained through "the effectuated mechanical thing, increases the force of moving the arms, therefore the subjective perception to effort (YU, E. et all. 1994, quoted by Teixeira G. et all. 2010, p. 27) as well as through the number of active muscles involved in movement, all of these requiring a greater need for oxygen and nutritive substances through metabolic solicitations and through increasing cardiac frequency (Barbosa T.M. et all., 2009 quoted by Teixeira G., et all., 2010, p. 27).

Within the aquatic physical activities, the specific motile abilities require more time of execution, because the doing the movements permanently requires rebalancing the body, overcoming the environment's forces and a permanent adaptation to the instable environment (Badau A. et all., 2016, p. 12).

Material and method

The purpose of the research regarded identifying the action means from the category of dynamic games adaptable to the aquatic environment in order to optimize the swimming initiation process and to improve the preschool children's motile ability.

The paper's hypothesis presumes that by using games specific to swimming within the initiation process of swimming in preschool children, one can produce the increase of efficiency in accommodating with thr water and the development of the water movement.

The research has been done during the months of March-June 2016 at the Olympic Swimming Pool Brasov. The research included two groups of 12 subjects each, with age 6. Dividing the children on groups has been accidental. The group members were at their first swimming initiation.

On the experiment group one has applied an integrated program of classical means and dynamic aquatic games in initiating swimming and two styles of swimming. The control group has followed a program of classical means of initiating without dynamic aquatic games. Both groups have followed a program of 12 lessons, 90 minutes each per lesson, once a week. The anthropometrical and morphological tests have been applied at the beginning of the research and the ones for specific abilities after the imposed swimming initiation program.

The anthropometrical and morphological trials have regarded the general and segmentary body aspects (body-build and harmony) and health.

- *Stature.* Stature, waist or height is a anthropometric value through which all the other indicators are interpreted. It is measured while standing, with the heels, buttocks and blade bones glues to a wall, chin in the chest so that the superior margin of the external hearing conduct and the external eye angle are all on the horizontal.
- *Nutrition state*. The nutrition state reflects the subject's health and the way in which the nutritional contribution corresponds to the energetic spending. The weight is measured in the morning, on an empty stomach, undressed.
- *Thoracic perimeter*. It is measured with the meter, placed in the back under the inferior angle of the blade bones and in front under the mammal areole. The values are registered in profound forced inhaling and exhaling.
- *Evaluating physical deficiencies.* This exam visually examines the subject (undressed) from the front, profile and the back, allowing the establishment of attitude or posture, the global nutrition state, the development of muscularity (shape, volume, repartition, its symmetry or disharmony), the presence and shape of the repartition of the adipose system and the physical deficiencies.

The technical trials have been complex and have pointed out to several specific attitudes adapted to the preschool children swimming initiation.

- *Diving ability*. This trial is important because diving contributes to the feeling of being safe in the water. The child has learned to move and orientate in the water and has realized the effects of its pressure noticing that it keeps bringing him to the surface. The child accustomed to the body's vertical position on land has been put in the presence of a new element in the water – the horizontal position. Due to the fact that in general the child keeps his breathing reflex while diving, here one produces an excitation of the respiratory apparatus, fact which makes him come to surface and breathe. The children have been taught to hold their breath and exhale the air gradually. In the same time they have been accustomed to open their eyes under water. The trial consists of picking up 4 rings from the bottom of the pool, in deep water up to the neck. The rings have been at a 0.5 m distance of one another.
- *The distance done by the children in sliding on the chest and back*. It is common knowledge that the specific weight of the human body, in the case f the lungs being filled with air, is smaller than that of water. Thus the body floats without doing any movement at all. The children, due to the fact that they have a very light skeleton, float on the surface of the water even when they have exhaled their lungs of air. The trial consists of pushing and sliding on the chest and back in deep water up to the neck, measuring the distance in sliding. In order to set the performance one will measure the distance from the pool's wall to the soles of the feet so that the height of the body doesn't influence the appreciation of the sliding distance.
- *The height from which one can execute the jump in deep water*. Jumps allow children to feel the effect of water pressure on the body. Moreover, they contribute to the development of courage, decision and the moral and willed qualities in general. The level of learning of this specific skill has been tested through the height from which the jump has been made in deep water.

- *The distance done by children by effectuating freestyle leg movements on the chest and back*. The purpose of swimming is forming the ability to move through water, fast and secure on a longer distance. The feet movements are the ones that are learned first in order to set the basis of assimilation. The trial consists of effectuating as longer distances as possible only by doing freestyle leg movements. It is the choice of the children if they want to use the float or not.
- *Effectuating certain respiratory cycles*. In swimming, breathing has an important role and thus a correct assimilation of the latter becomes also important. The biggest difficulty is the breathing under water, though the pressure of the water on the thorax helps the swimmer to eliminate the air. While inhaling, the pressure of the water opposes the resistance of dilating the thorax and solicits the abdominal muscularity. This trial consists of effectuating certain respiratory cycles. A cycle is formed of inhaling and exhaling. The norm is doing 8 respiratory cycles.
- *The number of assimilated proceedings*. In the first stage of swimming initiation one does not highlight the correctness of the swimming styles and thus within this trial one will evaluate the number of proceedings the child has assimilated. He/she wil do 10 m in every known proceeding.

The results of the research

Table nr. 1. The results of the somatic measurements for the control group

Initials	Height (m)	Weight (kg)	Thoracic perimeter (cm)	Skull perimete (cm)	Physical deficiencies
A.B.	125	30	68	56	no
B.B.	112	17	53	53	shoulder asymmetry
C.S.	123,7	22	59	53	no
M.E.	123,2	23,5	61	53	no
N.S.	123,2	23,5	61	53	no
U.Fl.	122,5	23	60	52	atripped blade bones
C.D.	119,8	20,5	59	52	pronounced hyperextension in the arms
C.L.	117,5	21	58	50	no
D.E.	121	20	53	50	no
R.D.	120,8	28	63	52	shoulder asymmetry
C.C.	105	16	53	50	no
H.I.	130	30	64	55	valgus leg

Tabel nr. 2 The results of the somatic measurements for the experiment group

Initials	Height (m)	Weight (kg)	Thoracic perimeter (cm)	Skull perimeter (cm)	Physical deficiencies
B.N.	127,5	25	60	52	no
G.I	117,5	21	57	52	flat foot
G.D.	119	21	60	51	no
K.B.	122	24	61	52	no
M.T.	127	25	62	53	no
M.D.	124	30	65	52	shoulder asymmetry

S.I.	122,4	23	60	52	no
S.A.	120,9	23	60	52	no
C.A.	118	20,5	59	51	no
D. A.	119,1	31	73	51	cifotic attitude
H.N.	111	17,5	55	49	no
S.A.	114,5	19,5	55	49	flat foot

Table nr. 3 Centralizing the average values of the somatic measurements

Groups	Height (m)	Weight (kg)	Thoracic perimeter (cm)	Skull perimeter (cm)
Control group	758.3	73.50	59.33	52.42
Experiment group	661.7	66.50	60.58	51.33
X difference between the groups	96.6	7	1.25	1.09
P value (two tailed)	0.0019	0.0113	< 0.0001	< 0.0001

Significant threshold $\alpha=0.05$

Tabel nr. 4 The results of the technical tests for the control group

Initials	The number of rings taken from the bottom of the pool	The distance done by sliding on chest/back	The distance dont by sliding on chest/back	The height from which they have jumped	The distance done by freestyle leg movements on chest/back	The distance done by freestyle leg movements on chest/back	The nunber of effectuated respiratory cycles	The swimming proceedings in which the 10 m distance has been done
A.B.	1	1,50 m	1,70 m	10cm	21 m	34 m	2	freestyle/backstroke
B.B.	2	1,25 m	0 m	10cm	15 m	47 m	1	freestyle
C.S.	4	4 m	3,9 m	50 cm	50 m	50 m	8	freestyle/backstroke
M.E.	2	2,10 m	2,25 m	10 cm	43 m	40 m	8	freestyle/backstroke
N.S.	0	2,05 m	2,30 m	5 cm	45 m	38 m	5	freestyle
U.Fl.	0	2.35 m	2,75 m	5 cm	50 m	50 m	3	freestyle/backstroke
C.D.	1	4 m	4,05 m	100 cm	40 m	20 m	4	freestyle/backstroke
C.L.	0	3,5 m	0 m	5 cm	35 m	0 m	4	freestyle
D.E.	0	1,60 m	0 m	0 cm	29 m	26 m	0	freestyle
R.D.	0	2,7 m	3,2 m	10 cm	33 m	35 m	2	freestyle/backstroke
C.C.	4	4,3 m	4,40 m	50 cm	50 m	50 m	8	freestyle/backstroke
H.I.	0	3,15 m	0 m	0 cm	35 m	22 m	1	freestyle

Tabel nr. 5 The results of the technical tests for the experiment group

Initials	The number of rings taken from the bottom of the pool	The distance done by sliding on chest/back	The distance dont by sliding on chest/back	The height from which they have jumped	The distance done by freestyle leg movements on chest/back	The distance done by freestyle leg movements on chest/back	The nunber of effectuated respiratory cycles	The swimming proceedings in which the 10 m distance has been done
B.N.	4	3,6 m	3,5 m	1oo cm	30 m	18 m	8	freestyle/backstroke
G.I	3	3,8 m	3,4 m	100 cm	25 m	20 m	8	freestyle/backstroke
G.D.	4	4,5 m	4,5 m	100 cm	50 m	50 m	8	freestyle/backstroke
K.B.	4	3,9 m	2,5 m	100 cm	20 m	21 m	8	freestyle
M.T.	4	4,6 m	4,2 m	100 cm	40 m	35 m	6	freestyle
M.D.	4	3,25 m	3 m	100 cm	32 m	26 m	8	freestyle/backstroke
S.I.	4	4 m	3,80 m	100 cm	18 m	12 m	7	freestyle/backstroke
S.A.	4	4.3 m	4,15 m	100 cm	42 m	35 m	8	freestyle/backstroke
C.A.	4	2,8 m	3,05 m	100 cm	47 m	35 m	8	freestyle/backstroke
D. A.	4	4,6 m	4,25 m	100 cm	50 m	50 m	8	freestyle/backstroke
H.N.	4	2,5 m	2,3 m	50 cm	15 m	12 m	5	freestyle
S.A.	4	4 m	3,9 m	100 cm	27 m	28 m	7	freestyle/backstroke

Tabel nr. 6 Centralizing the average values of the technical tests

	The number of rings taken from the bottom of the pool	The distance done by sliding on chest/back	The distance dont by sliding on chest/back	The height from which they have jumped	The distance done by freestyle leg movements on chest/back	The distance done by freestyle leg movements on chest/back	The nunber of effectuated respiratory cycles
Control group	1.166	2.625 m	2.045 m	21,250 cm	37.166 m	34,333 m	3,833
Experiment group	3.916	3.820 m	3.545 m	95.833 cm	33,000 m	28,500 m	7.416

X difference between groups	2,750	1,195 m	1,500 m	74,583 cm	-4,166 m	5,833 m	3,583
P value (two tailed)	0.0228	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Discussions

Doing the experiment, at the final testing, we have noticed the following results. The deficiencies that have come up while doing the anthropometric examination have been in general the following: shoulder asymmetry, atripped blade bones, and arms too short or in pronounced hyperextension, deviations of the spine in the sagittal plan, cifotic and lordotic attitudes, valgus legs and flat feet.

In the first trial, picking up 4 rings from the bottom of the ocean, the control group obtained an average of 1.16 rings in comparison to the experiment group with an average of 3.916 rings. Preschool children that have been initiated in swimming through games didn't have problems diving and orientating under water, while the majority of the control group hesitated diving and picking only one ring. Therefore, through games one has overcome the fear of diving. Involving themselves in the game the children didn't become aware of the action they were doing thus actively participating and reaching the proposed goals.

For the second trial, the control group obtained an average of 2.625 in comparison to the experiment group with an average of 3.820833, in sliding on the chest. In sliding on the back the control group obtained an average of 2.045833 in comparison to the experiment group with an average of 3.545833. One has noticed that both groups effectuated a longer distance sliding on the chest.

While jumping from a big a height as possible the control group obtained an average of 21.21 cm in comparison to the experiment group with an average of 95.83 cm. A single child did not jump from a height of 1m while only 1 child from the control group jumped from this height. In order to effectuate jumps from 1 m the children experienced courage, decision and well developed moral and willed qualities. It is a very good result of preschool children that have been initiated in swimming through games because in this first stage of initiation one accentuates overcoming the fear, using the factors which contribute to improving and strengthen health and physical development and notwithstanding the preparation for learning the proposed technique.

For the fourth trial the control group obtained an average of 37.16667 in freestyle leg movements on the chest and 34.333 in freestyle leg movements in the back in comparison to the experiment group that obtained averages of 33 m and 28.5 m. This was the only trial in which the control group obtained better results than the experiment group. This is due to the fact that initiation thought the classical method one has insisted on effectuating longer distances in time while through the game method one has insisted on getting accustomed with the water and forming the ability of moving in the water.

For the fifth trial, the respiratory cycle, the control group obtained an average of 3.833 while the experiment group obtained an average of 7.41666. The difference between the two groups is significant. Preschool children from the experiment group have used breathing even in the games in which the main themes were diving and jumping.

The last trial, effectuating 10 m distances in the known proceeding, has showed that from the control group 11 swam freestyle and 7 backstroke and from the experiment group 10 swam freestyle and 11 backstroke. The majority of children from the two groups swam in both proceedings confirming the fact that even this objective of the initiation was achieved.

Conclusions

Undergoing the experiment has led to the following conclusions:

- the diving ability has improved significantly to the experiment group thus contributing to the feeling of being safe in the water;
- the water accommodation of preschool children from the experiment group has been done quickly, pleasantly and more efficiently than the one done through the classical method;
- learning to breath in the initiation cycle has been done much easier and more correct in the experiment group;
- the height from which they jumped in the water has been considerably higher to the experiment group thus proving that through games they have developed their moral and willed qualities;
- the number of children that have swam in broth proceedings has been greater in the experiment group.

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ICE HOCKEY: IMPORTANCE OF FACE-OFF

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Summary. *This paper presents some considerations on the importance of faceoff to play ice hockey;they may take place in all areas of land in numerical superiority and inferiority.*