

### 30 - MOTOR DEVELOPMENT OF STUDENTS PRACTICING SWIMMING AND STUDENTS OF PHYSICAL EDUCATION SCHOOL

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#### INTRODUCTION

The Swimming is without doubt one of the most primitive sports we know today. Through him the man had an opportunity to have fun, to use it as a way to get food through the game, besides becoming a strategy for survival, fleeing by lakes and rivers of fierce animals. The man may have learned to swim by instinct or even by the observation of other animals. This act of self and self-sustaining in liquid medium may have contributed significantly in their fight evolutionary (MASSAUD, 2004)

From the perspective of motor development, swimming just winning a very important role, because to have a complete motor development is necessary that the child is involved with the largest possible number of activities in various environments, allowing it to accumulate experience in different situations. The liquid medium allows the implementation of different forms of movement. Through the water the child receives a large amount and quality of stimulation through games, games, visual stimuli, tactile and sinesthesia by the colors of the environment, materials, the sound of water, voices and stimuli of the teacher (ROSA et al, 2002)

This study aimed to examine the influence of swimming and physical education in school motor development of children 4 to 7 years; check on what stage of fundamental motor skills these children are and see if the children are in the stage of engine development that is advocated in the literature.

According Gallahue and Donelly (2008), the motor development involves continuous adaptation to changes in the capabilities of movement of an individual by means of continuous effort to achieve, maintain control engine and motor power.

The development engine is linked to the most diverse experiences and experiences of each individual child. The greater their experience, their performance will be increased in various daily activities (REZENDE and CARRATO, 2006).

Gallahue and Ozmun (2005) created a model very accepted by the scientific community in which the motor development is represented by an hourglass. Put sand in it, which is characterized as the filling of life and is derived from two separate reservoirs. The first is understood as the genetic cargo of container, which can not be changed because it is determined at birth. Already the container described as the environment is highly changeable, sand can be added according to the amount of stimuli that the individual will receive. It is worth emphasizing that the important thing is that the sand into the hourglass from both reservoirs (genetic and hereditary).

The hourglass is divided in phases, which are driving reflexive, rudimentary, fundamental (focus of this study) and specialized.

At the end of the second year of life rudimentary motor skills are already dominated by the child. She enters a period in which the skills already developed will provide support for the purchase of a basic standard engine. During this time she is highly involved with the exploration and experimentation of their motor skills. It is time for discovery, to seek what is new, which is challenging, to gain greater control engine to perform the tasks (GALLAHUE and OZMUN, 2005; milk and GOBBI, 2002).

To better understand the process of acquiring basic motor skills Gallahue and Ozmu (2005); LEITE and Gobbi (2002); Tani et al., (1988) to divide into three categories of moves:

1 - Stabilizers: It involves the maintenance of balance and posture in relation to the force of gravity. Axial movements, body spin, diversion, static balance, walking on the beam and support patterns are reversed engines stabilizers.

2 - locomotion: involves the displacement of the body in outer space. Hiking, running, jumping from a certain height, vertical jump, leap away, skipping, galloping and sliding, jumping and hopping patterns are mixed motor locomotion.

3 - manipulators: involves the relationship of the individual with the object and the application of force on objects. Roller ball, pitch, receiving, kick, trim, hit, who knows volleyball and motor patterns are manipulative.

Within each of these categories are the stages: initial, elementary and mature.

The initial stage is the child's first attempts aimed at implementing a fundamental skill. It was during this stage an excessive use of the body, disability in relation to the pace and coordination of the movement, which apparently seems to be a sequence with incomplete or missing parts. The elementary stage involves a more control, greater coordination and greater synchronicity between the temporal and spatial, but much of the movement is still in the process of improvement. The mature stage is characterized by efficiency in the conduct of some movements, moving the child to run them with greater coordination. But at this stage to get some movement, will require knocking down and hit an interception of some elements that constitute, as such movements will develop a little later depending on the requirements and visual motor (GALLAHUE and OZMUN, 2005).

#### METHODOLOGY

The sample was composed of 14 preschool children of both sexes, aged 4 to 7 years, being 7 of them students who make the Olympics at least 6 months and 7 students who only attended school of Physical Education at the School of Application.

We used a digital camera camcorder (2.5zoom, 3.2 megapixel, Sony-branded Handycam Vision), 1 Sony 8 mm tape, 1 tripod to support the camera, 1 child ball, 1 tennis ball, 1 crash low of balance (Artistic Gymnastics ). For the analysis of patterns of movement key was used to evaluate the protocol designed by McClenaghan and Gallahue in 1978.

The Instrument for Assessing Motor Fundamental Standards (FMPAI) is designed and McClenaghan by Gallahue in 1978 and expanded by Gallahue and Donnelly (2008). The movements were analyzed dynamic equilibrium, static balance, running, leaping in the distance, and perhaps throw.

#### RESULTS AND DISCUSSION

Table 1 shows the characteristics of the sample as gender and age, where Gap is the only group that participated in the School of Physical Education and Implementation of the NG group that practiced Swimming.

A2*	F*	5	GAp*	N2*	M	4	GN*
A5	F	6	GAp	N3	F	4	GN
A1	M*	7	GAp	N4	F	4	GN
A3	F	7	GAp	N6	F	6	GN
A4	F	7	GAp	N1	M	7	GN
A6	M	7	GAp	N5	M	7	GN
A7	M	7	GAp	N7	F	7	GN

TABLE 1 - Group Swimming and School of Application.

Legend:

1 = balance,

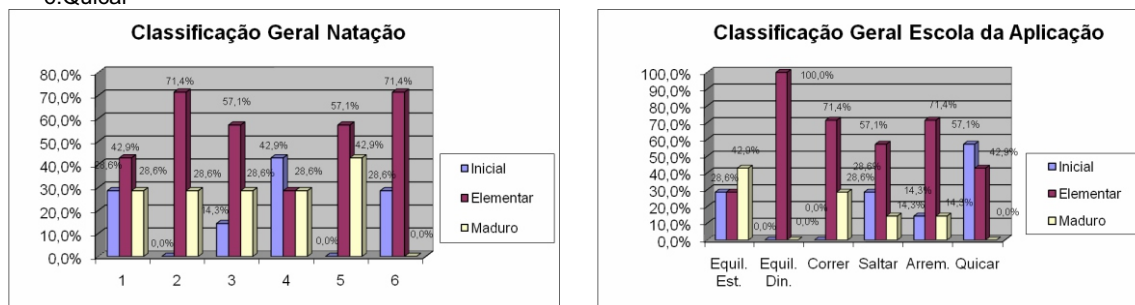
2 = Dynamic Balance,

3 = Running;

4: Jump;

5 = pitch;

6: Quicar



Graph 1 shows the general classification of the group and Swimming School of Application. We can see that children are in the group's Swimming mostly in the elementary stage, except in the movement jump, which showed a higher percentage in the initial stage. But the indexes mature stage in spite of not showing dominance, have significantly higher values. The results range from meeting with the Leite and Gobbi (2002) talk us, we can observe that in a certain task the child may be in the initial stage in elementary and elsewhere, even in mature into another because of changes not is uniform in all of them. Children from the School of Application Group, made up mostly of movements in the elementary stage. However, some data must be taken into consideration: the movement dynamic equilibrium 100% of the children had at the elementary stage, unlike swimming in the group that 28.6% were in the mature stage. Running in motion, jump, throw the percentage of children in mature stage was much lower than the Olympics. This may have occurred in terms of the various opportunities to practice for these children. Children's swimming group, and from the Physical Education in school is a possibility that more may have contributed to the improved overall performance. Please note also that were not taken into consideration the other activities undertaken by the child as soon as the day: playing in the street, at home, at the school during recreation and so on., Which in one way or another are environmental stimuli that will help for the development of the same engine (Anderson & Sullivan, 2004). And in this context Tani (2005); Paes & T (2005) talk that in the Physical Education and its various sports (swimming, soccer, volleyball, etc.) and recreational earn a vital role, because it offers the child a huge range of experiences that will contribute significantly in buying patterns more improved motor.

### CONCLUSION

The results of this study show that children of the group that practiced swimming in two movements (jump and static balance) had lower results for children of the group School of Application. But when observed in general the other four movements, we showed that in the elementary stage and mature as literature. By contrast, children who participated only school of Physical Education at the School of Application, but they had more significant results in two movements (jump and static balance), are the vast majority in the elementary stage and some movements like jumping and perhaps indices high in the initial stage when they should submit to the mature stage.

So see a trend that children who practice swimming at the present stage of development advocated by the motor literature and in some cases at a stage above. But we can not say with complete certainty that was the only swimming responsible for such evidence, since not been taken into consideration the daily activities carried out by children (playing in the street, at home, club, etc.). The level of incentives and encouragement and adequate nutrition.

### REFERÊNCIAS

- GALLAHUE, D. L.; DONNELLY, F. C. **Educação física desenvolvimentista para todas as crianças**. 4 ed. São Paulo: Phorte, 2008. il. 725p.
- GALLAHUE, D. L.; OZMUN, J. C. **Compreendendo o desenvolvimento motor: bebês, crianças, adolescentes e adultos**. 3.ed. São Paulo: Phorte, 2005. 520p.
- LEITE, H. de S. F.; GOBBI, L. T. B. **Crescimento somático e padrões Fundamentais de movimento: um estudo em escolares**. Rio Claro: [s.n.], 2002. 86 f. il. Disponível em: < [http://www.rc.unesp.br/lib/efisica/leplo/teses/dissert\\_helia.pdf](http://www.rc.unesp.br/lib/efisica/leplo/teses/dissert_helia.pdf) > Acesso em: 17 set. 2008.
- MASSAUD, M. G. **Natação 4 nados: aprendizado e aprimoramento**. 2. ed. Rio de Janeiro: Sprint, 2004. 211p.
- PAES, R. R.; BALBINO, H. F. **Pedagogia do Esporte: contextos e perspectivas**. Rio de Janeiro: Guanabara koogan, 2005. 161p.
- REZENDE, M. M.; CARRATO, M. F. **Estudo da habilidade motora em crianças indígenas terena da aldeia água branca o município de Nioaque/M.S.** [S.l]: [s.n.] 2006. Disponível em: < [http://www.neppi.org/anais/textos/pdf/estudo\\_habilidade\\_motora\\_crianca\\_indigena.pdf](http://www.neppi.org/anais/textos/pdf/estudo_habilidade_motora_crianca_indigena.pdf) >. Acesso em: 17 set. 2008
- ROSA, M. R. R. et al. **Desenvolvimento de habilidades motoras e capacidades físicas em crianças através da natação: dados preliminares**. [S.l ], [s.n.] 2002. Disponível em:< [http://www.fafibe.br/revistaonline/arquivos/033-morgana-desenvolvimento\\_atividades\\_motoras.pdf](http://www.fafibe.br/revistaonline/arquivos/033-morgana-desenvolvimento_atividades_motoras.pdf) > Acesso em: 17 set. 2008.
- SULLIVAN, J. A.; ANDERSON, S. J. **Cuidados com o jovem atleta: enfoque interdisciplinar na iniciação no treinamento esportivo**. Barueri: Manole, 2004. 524p.
- TANI, G. **Comportamento motor: aprendizagem e desenvolvimento**. Rio de Janeiro: Guanabara Koogan, 2005. 327p.
- TANI, G. et al. **Educação Física Escolar: fundamentos de uma abordagem desenvolvimentista**. São Paulo: EPU: Editora da Universidade de São Paulo, 1988. 150p.

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**ABSTRACT**

Swimming is undoubtedly one of sports most primitive and which currently has been gaining ever more adherents. Currently on the basis of results from major Brazilian swimmers and the benefits it provides the practitioner the number of fans is growing every day. In view of the development engine it becomes a very important strategy, because through the liquid medium, the child receives a variety of different stimuli both the water itself but also the activities and materials used. And when we talk about motor development the child needs to be involved with the largest possible number of experiments for developing all their genetic potential. So the purpose of this study was to analyze the influence of swimming in the motor development of children from 4 to 7 years old age group that understands the fundamental motor skills. The sample consisted of 14 children of both sexes being 7 practicing swimming at least 6 months and 7 participants only school Physical Education at the School of Application. We performed a shooting of six fundamental motor skills, which are analyzed using the protocol for assessing FMPAI. The results show us that children who had practiced swimming in the vast majority of the movement in elementary and mature stages. By contrast the only participating school of Physical Education school showed up in the vast majority in the elementary stage, but the movements jump and perhaps there was a predominance in the early stage. We therefore a trend that children who practice swimming at the present stage of development advocated in the literature and in some cases at a stage above.

Key words: Swimming, motor development, fundamental motor skills.

**RESUMEN**

La natación es, sin duda, uno de los deportes más primitivos y que en la actualidad ha ido ganando cada vez más adeptos. Actualmente, sobre la base de los resultados de los grandes nadadores de Brasil y los beneficios que proporciona el médico el número de fans crece cada día. En vista de la evolución del motor se convierte en una estrategia muy importante, porque a través del medio líquido, el niño recibe una variedad de diferentes estímulos, tanto el agua en sí, sino también las actividades y los materiales utilizados. Y cuando hablamos de motor de desarrollo el niño necesita estar involucrado con el mayor número posible de experimentos para el desarrollo de todos sus potencial genético. Por lo tanto, el objetivo de este estudio fue analizar la influencia de la natación en el desarrollo motor de niños de 4 a 7 años de edad grupo de edad que comprende las habilidades motoras fundamentales. La muestra estuvo constituida por 14 niños de ambos sexos que practican la natación 7, al menos, 6 meses y 7 participantes sólo la escuela la Educación Física en la Escuela de Aplicación. Hemos realizado un rodaje de seis habilidades motoras fundamentales, que son analizados utilizando el protocolo para la evaluación de FMPAI. Los resultados nos muestran que los niños que han practicado la natación en la gran mayoría de los movimientos elementales y en etapas maduras. Por el contrario la única escuela participante de la Educación Física escolar puso de manifiesto en la gran mayoría en la etapa elemental, pero los movimientos de salto y tal vez hubo un predominio en la primera etapa. Por lo tanto, una tendencia que los niños que practican la natación en la etapa actual de desarrollo propugnado en la literatura y, en algunos casos en una etapa anterior.

Palabras clave: Natación, el desarrollo motor, habilidades motoras fundamentales

**RÉSUMÉ**

La baignade est sans doute l'un des sports les plus primitifs et qui a gagné de plus en plus d'adhérents. Actuellement, sur la base des résultats des grands nageurs brésiliens et les avantages qu'il offre au praticien le nombre de fans est de plus en plus chaque jour. Compte tenu de l'évolution moteur, il devient une stratégie très importante, parce que par le biais du milieu liquide, l'enfant reçoit une variété de stimuli fois l'eau elle-même mais aussi les activités et les matériaux utilisés. Et lorsque nous parlons de moteur de développement de l'enfant doit être associé avec le plus grand nombre possible d'expériences pour le développement de l'ensemble de leurs potentiel génétique. Donc, le but de cette étude était de analyser l'influence de la natation dans le développement moteur des enfants de 4 à 7 ans d'âge qui comprend le moteur fondamental de compétences. L'échantillon était constitué de 14 enfants des deux sexes de 7 pratiquer la natation au moins 6 mois et 7 participants seule école de l'éducation physique à l'École de la demande. Nous avons effectué un tir de six habiletés motrices fondamentales, qui sont analysés à l'aide du protocole pour l'évaluation de FMPAI. Les résultats nous montrent que les enfants qui avaient pratiqué la natation dans la grande majorité du mouvement dans l'enseignement élémentaire et mature étapes. En revanche, la seule école participante de l'éducation physique scolaire a montré dans la grande majorité dans le stade primaire, mais les mouvements de saut et peut-être il y avait une prédominance dans le stade précoce. Nous avons donc une tendance que les enfants qui pratique la natation au stade actuel de développement, préconisée dans la littérature et, dans certains cas à un stade i-dessus.

Mots clés: Natation, le développement moteur, les habiletés motrices fondamentales.

**RESUMO**

A natação é sem dúvida um dos esportes mais primitivos e que atualmente vem ganhando cada vez mais adeptos. Atualmente em função de grandes resultados de nadadores brasileiros e dos benefícios que ela proporciona ao praticante o número de adeptos vem crescendo a cada dia. Na perspectiva do desenvolvimento motor ela torna-se uma estratégia muito importante, porque através do meio líquido, a criança recebe uma grande variedade de estímulos diferentes tanto da própria água como também das atividades e materiais utilizados. E quando falamos em desenvolvimento motor a criança necessita estar envolvida com o maior número de experiências possíveis para desenvolver todo seu potencial genético. Assim o objetivo do presente estudo foi analisar a influência da natação e da educação física escolar no desenvolvimento motor de crianças de 4 a 7 anos, faixa etária que compreende as habilidades motoras fundamentais. A amostra foi constituída de 14 crianças de ambos os sexos sendo 7 praticantes de natação a pelo menos 6 meses e 7 participantes apenas das aulas Educação Física da Escola de Aplicação. Foi realizada uma filmagem de seis habilidades motoras fundamentais, as quais foram analisadas utilizando o protocolo de avaliação FMPAI. Os resultados nos mostram que as crianças que praticavam natação apresentaram-se na grande maioria dos movimentos nos estágios elementar e maduro. Em contrapartida as que participavam apenas das aulas de Educação Física escolar apresentaram-se na grande maioria no estágio elementar, porém nos movimentos saltar e quicar houve uma predominância no estágio inicial. Constatamos assim uma tendência de que as crianças que praticam natação apresentam-se no estágio de desenvolvimento preconizado pela literatura e em alguns casos em um estágio acima.

**Palavras-chave:** Natação, desenvolvimento motor, habilidade motoras fundamentais.