

MOTOR DEVELOPMENT AND COACHING YOUNG ATHLETES

How hard can it be?

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How do humans develop their motor skills? What is the impact of childhood maturation and environmental experiences in acquiring and increasing the complexity of the movements?

In this context, Gallahue (2005) proposes that childhood is understood as a period of great importance for the motor development, mainly because it is at this stage of life that one develops their fundamental motor skills that are the basis for the development of the specialized motor skills that one will use in their daily activities, leisure or sports activities.

Due to our great sport culture in the USA many families have been seeking sports for their children at an earlier age, especially in widely publicized and strongly mediated sports. Although sports initiation can provide positive experiences for the child's motor development, it is known that early specialization can also bring several complications to child development (FERRAZ, 2009).

Considering the importance of childhood for motor development and the possibilities of intervention of the sports coach in this phase, a few questions arise: how does the motor development of the child occur and what is the role of the sports coach regarding to that matter when coaching young athletes?

1. Understanding motor development in childhood

Motor development is understood as the "progressive changes in motor behavior, throughout the life cycle, achieved by the interaction between task demands, individual biology and environmental conditions" (GALLAHUE & OZMUN, 2005, p.25).

Although changes motor development related may occur throughout the life of an individual, it is in their childhood that the acquisition of motor repertoire takes place and that will serve as the basis for the following phases. It is during this period that the child acquires mastery of their body in various postures, learns to move around in different ways and to manipulate various types of objects (SANTOS et al., 2004).

The Gallahue Motor Development Model is based on a heuristic hourglass that represents the descriptive aspect of the typical motor development during one's life (GALLAHUE, 2005), and provides general guidelines for describing and explaining motor behavior. The model also stands that the level of acquisition of motor skills is alterable from birth to death (GALLAHUE & OZMUN, 2005).

The hourglass model is characterized as a descriptive two-dimensional model that prioritizes "the intentional function of the motion task as expressed in the three categories of movement *stability*,

locomotion and *manipulation* and the motor development phases expressed by their complexity" (GALLAHUE 2002) considering one's biological properties, the environment conditions and stimuli and the peculiarities of the performed task (KREBS et al., 2005).

This model is divided into four phases that present approximate ages to occur, being called: Reflexive Motor Phase (from the four months prenatal to age 1), Rudimentary Movements Phase (from ages 1 to 2), Fundamental Movements Phase (from ages 2 to 7) and Specialized Movements Stage (from age 7 on).

The initial phase of the motor development is when the child presents the reflexive movements, with the first forms of movement, which are involuntary movements, subcortically controlled and triggered in response to some stimulus (CAMPOS, 1998). Reflex movements are divided into primitive reflexes, which serve as information gatherers, food hunt and protection, and postural reflexes, which help babies to maintain an upright position on a surface and are similar to voluntary movements (HAYWOOD & GETCHELL, 2004).

The next phase is called the rudimentary movements phase, when the first voluntary movements of the child take place. Such movements involve stabilization activities, where the child begins to gain control of the head, neck and torso muscles, manipulative tasks such as reaching, grasping and releasing, and locomotion movements such as dragging, crawling, and walking (GALLAHUE & OZMUN, 2005).

It is in the fundamental movements phase that the child has the possibility to discover and explore even more their body and new forms of movement (PONTES, 2006). Since fundamental skills will be the basis for specialized motor skills (i.e. the ones we find in sports), this phase is considered critical for the child's development (ISAYAMA & GALLARDO, 1998).

The fundamental movements phase is divided into three stages: initial, elementary and mature stages. The initial stage represents the child's first attempt, between ages 0 and 2, to perform a fundamental skill. The movements are characterized by exaggerated use of the body, lack of rhythm and little coordination. After this stage, the child enters the elementary stage at ages 3 and 4, which is characterized by greater control, coordination and rhythm of the fundamental movements, with better spatial and temporal synchronization. The last stage of the fundamental motor phase is the mature stage between ages 5 and 7, in which the child performs more efficient, coordinated and controlled movements (GALLAHUE & OZMUN, 2005).

Children need motor activities that develop their ability to move at a mature level, since those kids who are frequently involved in games at their neighborhood, at school or participate in some sports initiation program have better motor performance when compared to children who spend hours in front of a television or computer (STABELINI, 2004).

At this age, the child should explore the environment through motor activities such as games, physical exercises or by performing motor skills, in order to obtain positive changes related to their physical, perceptive-motor, moral and affective development (FERREIRA NETO, 2004).

The last phase of the Hourglass Model is called specialized motor skills phase, in which the child goes through 3 stages: transient, application and permanent use. The transient stage occurs at around ages 7 or 8, when the child begins to combine and utilize basic motor skills to perform specialized skills with better form, accuracy and control. The application stage takes place between ages 11 and 13, when the child emphasizes the form, skill and precision of the motor performance, being this a propitious time to refine and utilize more complex abilities in games, leadership activities and chosen sports. The stage of permanent use begins at age 14 and extends throughout life, being characterized by a period of use of the movement repertoire that has been acquired during one's lifetime (GALLAHUE & OZMUN, 2005).

The specialized movements phase is a period when movement becomes a tool that will be useful for many complex motor activities present in daily life, recreation or sports games (GALLAHUE, 2005).

Thus, it is interesting to note that both maturation and environmental experiences are important for the process of acquisition and development of motor skills (SANTOS, 2002). However, acquiring a mature stage of fundamental and specialized motor skills will only be possible if the child has opportunities to experience diverse forms of movement (PAIM, 2003). Therefore, considering the possibilities of intervention of the sports coach with children and teenagers, a few considerations about sports initiation in childhood should be pointed out.

2. Considerations regarding sports initiation in childhood

The number of children engaged in some sport has grown to a large extent, whether in schools or sport clubs. Thus, sports initiation, understood as a period in which the child initiates the regular, oriented and planned practice of one or more sports modalities (SANTANA, 2004), has received much attention from the scientific area, especially regarding the age group ideal for the entrance of a child into a sports school/club and its consequences in their development (RAMOS & NEVES, 2008)

In this context, it seems a consensus that child sports initiation should emphasize children's overall motor development, since:

“(...)children and adolescents need plenty of opportunities in a variety of vigorous and daily motor activities, with the aim of developing their unique movement skills that will contribute to the formation of a citizen that is able to participate in sports programs and a critical consumer regarding sport spectacles and information conveyed by the media (KORSAKAS, 2009: 46)”.

Sports initiation programs can promote many benefits for the integral formation of the child, such as: development of body and motor performance capacities (FILGUEIRA, 2004), aspects related to cooperation, coexistence, participation, inclusion and satisfaction (OLIVEIRA & PAES, 2004), in addition to contributing to the bio-psycho-social development of the child in the later ages (ARENA & BOHME, 2000).

In order for sport initiation programs to contribute to the multilateral development of the child, certain circumstances must be respected, such as the development of activities that are

appropriate to the different age groups, the respect for each child's level of development, common sense (SAAD, 2006) and the greater number of child's life and motor experiences (BOMPA, 2002).

In this sense:

Sports initiation classes/practices should be composed of games/drills that are physically busy and easy to play, that will contribute to the child's motor development (DIEM, 1977). Coaches play a fundamental role in sports initiation programs, and must present a consistent pedagogical practice, getting to know their students/athletes, identifying their needs and interests and, later, using their creativity to provide, through different movements, the child's free expression of movement (APOLO, 1995).

In addition to the motor aspects, sports initiation teach ethical, social and moral values through various possibilities that sport itself involves, helps with the formation of an individual who is prepared for the different situations of daily life and allows the child to live well, no matter what is the sport they choose (SCAGLIA, 1996).

References

APOLO, A. Manual técnico didático de futsal. São Paulo: Scortecci, 1995.

ARENA, S. S.; BOHME, M. T. S. Programas de iniciação e especialização esportiva na grande São Paulo. Revista Paulista de Educação Física. São Paulo: 14(2), 184-195, jul/dez. 2000.

BOMPA, T. O. Periodização: teoria e metodologia do treinamento. São Paulo: Phorte Editora, 2002.

CAMPOS, W. Criança no esporte. Revista Treinamento Desportivo. Vol. 3(3), p.48-53, 1998.

DIEM, L. Esportes para crianças: uma abordagem pedagógica. Rio de Janeiro: Beta, 1977.

FERRAZ, O. L. O esporte, a criança e o adolescente: consensos e divergências. In: ROSE JR, D. et al. (Org). Esporte e atividade física na infância e na adolescência: uma abordagem multidisciplinar. Porto Alegre: Artmed, 2009.

FERREIRA NETO, C. A. Desenvolvimento da motricidade e as culturas da infância. In:

FILGUEIRA, F. M. Futebol – uma visão da iniciação esportiva. Ribeirão Preto, São Paulo: Ribergráfica, 2004.

GALLAHUE, D. L. A classificação das habilidades de movimento: um caso para modelos multidimensionais. Revista da Educação Física da UEM. Maringá, v.13, n.2, p.105-111, 2002.

GALLAHUE, D. L. Conceitos para maximizar o desenvolvimento da habilidade de movimento especializado. Revista de Educação Física da UEM. Maringá, v. 16, n.2, p.197-202, 2. sem. 2005.

GALLAHUE, D. L. e OZMUN, J. C. Compreendendo o desenvolvimento motor: bebês, crianças, adolescentes e adultos. São Paulo: Phorte Editora, 2005.

HAYWOOD, K. M. GETCHELL, N. Desenvolvimento motor ao longo da vida. Porto Alegre: Artmed, 2004.

ISAYAMA, Hélder F. e GALLARDO, Jorge S. P. Desenvolvimento motor: análise dos estudos brasileiros sobre habilidades motoras fundamentais. Revista da Educação Física/UEM. Vol.9, nº1, p.75-82, 1998.

KORSAKAS, P. O esporte infantil: as possibilidades de uma prática educativa. In: ROSE JR, D. et al. (Org). Esporte e atividade física na infância e na adolescência: uma abordagem multidisciplinar. Porto Alegre: Artmed, 2009.

KREBS et al. A medida do reflexo de preensão palmar como variável do desenvolvimento motor. Rev. de fisioterapia da FURB. Blumenau, v.1, n.1, 2005.

OLIVEIRA, V.; PAES, R. R. A pedagogia da iniciação esportiva: um estudo sobre o ensino dos jogos desportivos coletivos. www.efdeportes.com/. Revista Digital. Buenos Aires: ano 10, n. 71, abr. 2004.

PAIM, M. C. C. Desenvolvimento motor de crianças pré-escolares entre 5 e 6 anos. Revista Digital. Buenos Aires: 8(58): p.1-8, 2003.

PONTES, E. A. A inserção de atividades esportivas para crianças do pré-escolar no Programa Segundo Tempo. Brasília, 2006. 35p. Monografia (especialização), Universidade de Brasília.

RAMOS, A. M.; NEVES, R. L. R. A iniciação esportiva e a especialização precoce à luz da teoria da complexidade: notas introdutórias. Revista Pensar a Prática. Goiânia: 11/1, p.1-8, jan/jul. 2008.

SAAD, M. A. Iniciação nos jogos esportivos coletivos. www.efdeportes.com/. Revista Digital. Buenos Aires – ano 11, n. 95, abr. 2006.

SANTANA, W. C. de. Futsal: apontamentos pedagógicos na iniciação e na especialização. Campinas: Autores Associados, 2004. – Coleção educação física e esportes.

SANTOS, S. Desenvolvimento motor ao longo da vida. In: BARBANTI, V. J. (org) et al. Esporte e atividade física: interação entre rendimento e qualidade de vida. Barueri: Manole, 1ed, 2002.

SANTOS, S. et al. Desenvolvimento motor de crianças, de idosos e de pessoas com transtornos de coordenação. Revista Paulista de Educação Física. São Paulo, v.18, p.33-44, ago. 2004.

SCAGLIA, A. J. Escolinha de futebol: uma questão pedagógica. Revista Motriz. Rio Claro, v.2, n.1, p.36-43, jun. 1996.

STABELINI, N. et al. Relação entre fatores ambientais e habilidades motoras básicas em crianças de 6 e 7 anos. Revista Brasileira de Educação Física e Esporte. São Paulo: 3 (3), p.135-140, 2004.