102 - ACQUISITION OF STANDARD MOTOR DIRECTED TO WALK IN CHILDREN WITH AUTISM: A CASE STUDY

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INTRODUCTION:

According to studies of Gallahue and Ozmun (2005) it is in the first two years of the child that is observed the manifestation of primitive reflexes. The march, for example, understood as pre-stage movement and directed the initial stage of human walking, consists of a logical sequence of movements. The dynamics requires: alternate positioning of lower limbs to the forward, the moment when one leg is in the aerial phase, and the other with his foot in a support position, creating a balance between trunk and arms allowing to propel the body in locomotion.

According to Tani (2008), a collective of authors defend three basics aspects about the sequence of motor development. They are: (1) the sequence of motor development is the same for all children by simply changing its speed, (2) basic skills are essential for more complex motor skills. (3) the sequence of learning indicates what can be done and what needs to learn.

Studies related to the field of motor development, reveal a large gap in seeking to understand the mechanism of acquisition, retention and transfer of motor skills in children with autism. In this study it will be used the definition of autism offered by the DSM-IV. According to the document:

"A person with autism manifests a wide range of behavioral symptoms, which includes hyperactivity, attentional areas very brief, impulsivity, aggression, and self-injurious behavior, particularly in children, tantrums. There may be strange responses to sensory stimuli. For example, high levels of pain, hypersensitivity to sounds or being touched, exaggerated reactions to light and odors, fascination with certain stimuli" (American Psychiatric Association, 1994, p.67-68).

According to Mota (2008) and the Myer (1980) Autism causes motor's delay that lead individuals to major disabilities in their ability to perceive the body. These individuals also have limitations related to the ability to perceive and respond to different stimuli engines offered by the environment. Manzar Ashtari (2005) present in their studies that people with autism have low scores in motor tasks. According to the authors, from the point of view of motor development, the formula in normal development pace slowed down does not apply, as they progress at different speeds and some motor behaviors are unrelated to any stage of normal development. Reid (1981, p.32) suggested that "decreased motor can be a misleading term for what in reality, is a low perceptual processing."

With these theoretical assumptions can be select the study objectives: evaluate the motor pattern of walking in children with autism directed and identify effective instructional procedures to facilitate the acquisition, retention and transfer of locomotor ability during the variability of motor action.

METHODOLOGY

CHARACTERISTICS OF THE STUDY

It was a case study of the Extension in Motor Activity Project to children and teenagers with autism (PREMAUT) from the physical education course of Federal University of Alagoas in the period of February 2010 to July 2011.

SAMPLE:

The sample consisted of five (5) male children who had the following profile:

a)Clinical diagnosis of autism (ICD F.84.0);

b)Chronological age (IC) 60 to 132 months;

c)Motor Profile: General Motor Age (IMG) of less than 24 months, General Motor Quotient (MGQ) from 20 to 40 months, full-handed laterality.

d)Frequency systematic project for a minimum period of 18 months.

INSTRUMENTS AND PROCEDURES:

At first the research was conducted: (1) document analysis of the file of the Extension in Motor Activity Project to children and teenagers with autism for sample selection. (2) Semi-structured interviews with parents and guardians to authorize the child's participation in the research by signing the Consent and identification of the child's locomotor difficulties in carrying out tasks of daily living. (3) application of motor tests, before and after inclusion of children in motor intervention program lasting 18 months to evaluate the pattern of locomotor ability (directed motion).

The testing was performed from three locomotor tasks following the patterns of motor development of Gallahue and Ozmun (2005, p. 276). On the first phase, low-complexity task, the child moved in a straight line of 2.5 meters in length and 20 centimeters in width drawn on the ground. On the second phase, a task of medium complexity, a hope was used to move straight from 2.5 meters long and 20 inches wide attached to the ground. On the third phase, a task of high complexity, a wood beam of 2.5 meters long and 20 centimeters wide was used tied for two sets of 15 centimeters each, the child walked from one side to the other side of the beam. The evaluation of the fundamental pattern of walking directed, respected the stages of development described by Gallahue and Ozmun (2005).

The motor action in each task was classified as:

Initial stage when the child:

Early stage when the child:

1. Balances with support;
2. Walk forward while looking for support;
3. Dominant foot leads, followed by the other foot;
4. Eyes focus on the feet;

5.Corpo disk
6. No motion compensation.

Elementary stage when the child:
1. Can walk in a width of 5 centimeters but not 2.5 cm.
2. Dominant foot leads, followed by the other foot;
3. Eyes focus on the surface;
4. Can press one arm against the body while trying to balance with the other;
5. Loses his balance easily;
6. Motion compensation limited;
7. Can move forward, backward and sideways but requires considerable concentration and effort.

Mature stage when the child:
1. Can walk in a width of 2.5 cm.
2. Use action steps alternate.
3. Eyes focus on the surface;
4. Both arms are used to assist with awareness in the balance;
5. Can move forward, backward and sideways safely and easily;
6. Movements are flowing, relaxed and in control;
7. Can lose balance occasionally.

In the second phase of research, an intervention program was developed consisting of 80 sections of 50 minutes each according to the studies of Sá (2007). On the first phase of the program, the children underwent the challenges motors, with variability of locomotor plans through structured circuits and semi-structured aiming at the acquisition of motor action directed walk. On the second phase, children underwent structured circuits without locomotor variability of plans aimed at retaining directed motor task of walking. On the third phase, the children underwent the challenges motors, with variability of locomotor plans and teaching resources through structured circuits aiming to transfer the motor task of walking directed.

Each section of the program was recorded on video camera aimed at detailed analysis of the acquisition, retention and transfer of skill targeted locomotive journey. The results were analyzed based on the frequency of motor behavior described from qualitative observations.

RESULTS AND DISCUSSION:

The sample in this study refers to a group of five (5) children diagnosed with autism (ICD F.84.0), Chronological age (CA) 60 to 132 months attended at the Extension in Motor Activity Project to children and teenagers with autism (PREMAUT). From the interviews held with parents of children could be identified that 80% of the sample has difficulties in carrying out with visuomotor tasks, global motricity, balance, body scheme, spatial organization and temporal organization. According to testimony, the child with autism presents serious difficulties to coordinate the handling of the object with the same visual exploration. In most motor actions they do not feel attracted to objects even when they have vibrant colors, shapes and different sounds. According to reports, the children look for objects out of context to make the balancing movements and spins even when there is a mediating adult who insists on presenting the object for exploitation. The other testimonials, 20% of the sample indicated that visual fixation of their children is usually directed to their own fingers, shoe laces, seeds of fallen trees on the ground, small pieces of paper, leaves of trees.

As regards the area of the Global Movement, even though the pace of each child is unique, can be identify with the statements that 90% of the sample shows no spontaneous motor control. There is a gap in the use of motor mechanisms needed to solve the problems presented engines. Simple daily applications such as: “Let's run, let's take a shower, let's play, are not understood” (Entrevista, 2010). According to reports, "The child can move but can not make its motor action functional" (Entrevista, 2010). In 10% of the sample, according to reports, "there is a different way of moving the default". (Entrevista, 2010). It's like the child does not understand the world around him as a space filled movements and their meanings.

Balance was the one of the areas mentioned by respondents as one that presents problems. In 100% of the reports was possible to record the following statements: "I have a problem with my son when I go into and get off the public transportation" (Entrevista, 2010). "Keep my son standing in the public transportation is a big problem because it seems that he has no control over his own body" (Entrevista, 2010). "I had a very bad experience with my son. There was a hole and he needed to jump. Even I talking, holding his hand tightly, I could not prevent he from falling. It was like he could not brake in time" (Entrevista, 2010).

About the perception of the body, testimonials of parents showed that 100% of the sample has not yet discovered his body. They report that their children in different situations do not recognize the parts that make up the body, they have not yet experienced the sensations and the possibilities of movement of these parts.

Aspects related to spatial and temporal organization reports showed that 100% of the samples still experience the first spatial and temporal experiences. According to parents, "although we are adapting the construction of daily routines to assist in the development of these areas" (Entrevista, 2010). It also points the statement that “now, my son knows the day of the project and the clothing and shoes that he needs to use. I believe this is an improvement over the way I'm sure will be long "(Entrevista, 2010).

The results related to motor assessment, based on the postulates of Gallahue and Ozmun (2005), indicate in the pre-test, that: 20% of the sample was unable to perform the tasks of low, medium and high complexity motor direct related walking. In 60% of the sample shown in the tasks of low and medium complexity characterizing their direct walk with necessary support to keep balanced on the surfaces of the tasks of low and medium complexity, dominant foot following the other foot leading to the displacement of the body drive is presented. There was no demonstration in this group, the ability to execute the motor task of high complexity. In 20% of the sample showed elementary training in performing the tasks of low, medium and high complexity and motor movement, directed walk, characterized by the harmony of action between the equilibrium (static, dynamic and recovered). Focused look at the surface, movement of support arm with side opening.

The program of motor activity comprises two phases, in the period from February 2010 to July 201, a total of 120 sections of 50 minutes each. The first phase, aimed to adapt the research subjects to the context of the Project. Prioritized if the holding of free spaces of educational interventions and resources required during the development of the Project. Were dispensed, the first phase, 40 sections considering the difficulties founded in the process of interaction of children with the new environment and people involved in the process. At this stage, could be identified in 80% of the sample, increasing the

appearance of aggressive external behavior patterns and self-aggressive (hitting, biting, and kicking butt) and stereotyped movements (jumps, bumps and shook hands) justified the specific characteristic of individuals with autism when they undergo major changes related to their environment and his group contributed to the studies of Reid and Morin (1994).

On the second phase of the program, called Training of Motor Skills (THM) consists of 80 sections, the children underwent the challenges related to the different possibilities locomotor. The tasks are organized into circuits structured and semi structured made, each for 40 sections of the motor with variable motor task. The teaching strategy adopted allowed the modification of the type of motor circuit structured to semi-structured, with each cycle of 8 sections recorded on video camera aimed at a more detailed analysis of the acquisition, retention and transfer of locomotor ability.

The teaching strategy used in all sections of the circuits, followed the sequence: (1) free trial of each child in each of the three tasks of the circuit, (2) introduction to each child's motor task from a model desired action performed by the mediator of the intervention, (3) testing the child with direct assistance, mediate presentation of the model's motor action, the mediator, (4) testing the child with oral advice of the mediator.

The analysis of visual records identified that: four (4) of five children observed through the motor action in 70% of the sections, complete understanding of the locomotor demands when subjected to structured circuits with variability of the task regardless of their chronological age. There was only one child who showed no understanding of the motor task in 90% of the sections, even when the model was presented in the sequence of locomotor action (3) and (4) of the teaching strategy.

At the trial of semi-structured circuits with variability of the task, could be seen that all five (5) children demonstrated by locomotor action in less than 20% of the sections, complete understanding of the requirement of a motor task. One can also see that the variability of educational resources (bows, strings, balls, mattresses, exercise equipment and horse mat) did not interfere with the development of the task when we used a strategy of resource exploitation before the presentation of the infant motor task.

In the results of the post-test showed that 40% of the sample, the tasks of low, medium and high complexity characterizing early directed their walk with necessary support to keep balanced on the surfaces of the tasks of low and medium complexity, following the dominant foot other foot leading the displacement of the body that has drive.

In 40% of the sample showed elementary training in performing the tasks of low, medium and high complexity and motor movement, directed walk, characterized by the harmony of action between the equilibrium (static, dynamic and recovered). Focused look at the surface, movement of support arm with side opening. In 20% of the sample showed mature stage in the execution of the tasks of low, medium and high complexity characterizing his journey as a movement directed balanced with the use of alternate steps, eyes focused on the surface, as an auxiliary arm of the balance, flowing movements with control demo body.

CONCLUSION:

From the results, can be concluded that the motor learning of locomotor ability, walking directed, and the training is effective when adopted as a strategy structured circuits. The variability of the locomotor task and their level of complexity and variability of learning resources do not interfere in learning. Taking into consideration that such a walk is a variable of locomotion, can be said that through the structured circuits performed during interventions, there was a refinement of this ability, allowing a greater functional independence of individuals.

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ACQUISITION OF STANDARD MOTOR DIRECTED TO WALK IN CHILDREN WITH AUTISM: A CASE STUDY

ABSTRACT:

The aim of this study is to evaluate the motor pattern in directed walk in children with autism and identify effective instructional procedures to facilitate the acquisition, retention and transfer the locomotor ability during the variability of motor action, It was a case study. The sample was consisted of Five male children with a clinical diagnosis of autism (CID F.84.0) assisted by the Extension in Motor Activity Project to children and teenagers with autism (PREMAUT) from the physical education course of Federal University of Alagoas in Maceió. The materials and methods used were: documentary analysis, semi – structed interviews with parents and guardians and the application of motor tests based in the development of the Gallahue and Ozmun's

motor (2005). The results showed that 80% of the sample has difficulties in performing visuomotor tasks, global motor, balance, body scheme, spatial organization and temporal organization of daily actions. The pre – test showed that 20% of the sample was unable to perfom the tasks of low, medium and high complexity motor, 60% demonstrated in the tasks of low and medium complexity initial stage and 20% demonstrated elementary stage in performing the tasks of low, medium and high motor complexity. The program showed that the structured circuits are more efficient in locomotor skills training. The post – test showed that 40% of the sample in the tasks of low, medium and high complexity are in initial stage, 40% of the sample showed elementary stage and 20% of the sample showed mature stage in implementing the direct walk. It is concluded that the motor learning of locomotor ability, directed walk, is effective when the training is adopted as a strategy structured circuits, regardless of variability of the task and its level complexity.

KEYWORDS: Motor Learning, Walking Directed, Autism

ACQUISITION DE STANDARD MOTEUR DIRIGÉ PROMENADECHEZ LES ENFANTS UTISTES: UNE ÉTUDE DE CAS.

SOMMAIRE

Le but de cette étude était d'évaluer le schéma moteur de la marche dirige chez les enfants atteints d'autisme et d'identifier les procédures pour faciliter l'enseignement efficace l'acquisition, la conservation et le transfert de la capacité de locomotion la variabilité au cours de l`action motrice. Il était une étude de cas. Échantillon se composait de cinq enfants atteints d'autisme, assisté par le Projet d'extension dans les activités motrices destiné aux personnes atteintes d'autisme (PREMAUT) Cours d'éducation physique, Université Fédérale d'Alagoas à Maceió. Matériel et méthodes: L'analyse des documents, des entrevues et des tests d'applications basées sur les modèles de développement moteur Gallahue moteur et Ozmun (2005). Les résultats ont montré 80% de l'échantillon a des difficultés à accomplir des tâches visuo-motrice, Global du moteur, l'équilibre, schéma corporel, l'organisation spatiale et l'organisation temporelle des actions quotidiennes. Le pré-test a montré que 20% de l'échantillon a été incapable d'accomplir les tâches de faible, le motrice de complexité moyenne et haute, 60% ont démontré dans les tâches de l'étape de faible complexité et moyennes tôt et 20% ont démontré dans l'exécution des tâches de base de basse, motrice de complexité moyenne et élevée. Le programme a montré que les circuits structurés sont plus efficaces dans la formation des compétences locomotrices. Le post-test a montré que 40% de l'échantillon représenté sur les tâches d'une complexité faible, moyenne et haute au début, 40% de l'échantillon a montré stade élémentaire et 20% de l'échantillon a montré stade de maturité dans la mise en œuvre de la promenade dirigé. Nous concluons que l'apprentissage motrice de la capacité de locomotion, la marche dirigée, votre formation est efficace lorsqu'il est adopté comme une stratégie structurée indépendamment des circuits de la variabilité de la tâche et leur niveau de complexité.

MOT-CLÉ: l'apprentissage moteur, marche dirige, d'autisme

ADQUISICIÓN DEL ESTÁNDAR MOTOR DE LA MARCHA DIRECCIONADA EN NIÑOS CON AUTISMO UN ESTUDIO DE CASO.

RESUMEN

El propósito de este estudio fue evaluar el estándar motor de la marcha direccionada en niños con autismo e identificar los procedimientos de instrucción eficaces para facilitar la adquisición, retención y transferencia de habilidad locomotora en la variabilidad de la acción motora. Se trata de un estudio de caso. La muestra fue de cinco niños con autismo (CIE F.84.0), asistidos por el Proyecto de Extensión en Actividades Motoras direccionadas a los niños con autismo (PREMAUT) del Curso de Educación Física de la Universidad Federal de Alagoas, en Maceió. Los materiales y métodos fueron: análisis documental, entrevistas con los padres y tutores y la aplicación de testes motores embazados en Gallahue y Ozmun (2005). Los resultados mostraron que el 80% de la muestra tiene dificultades para llevar a cabo tareas visomotoras, la motricidad global, el equilibrio, esquema corporal, organización espacial y temporal de acciones diarias. El pre-test mostró que el 20% fue incapaz de realizar las tareas del motor de baja, mediana y alta complejidad, el 60% se muestra en las tareas de baja y mediana complejidad etapa inicial y el 20% se mostró en la ejecución de las tareas básicas de baja, y la alta complejidad etapa primaria. El programa mostró que los circuitos estructurados son más eficientes en la formación de las habilidades del aparato locomotor. El post-test mostró que el 40% de la muestra obtuvieran resultado en las tareas de complejidad baja y mediana etapa inicial, el 40% de la muestra en un estadio de primaria y el 20% de la muestra presentó etapa de madurez en la implementación de la marcha direccionada. Llegamos a la conclusión de que el aprendizaje motor de la marcha direccionada, fue eficaz cuando su entrenamiento adoptó una estrategia de circuitos estructurados con variabilidad de la tarea y su nivel de complejidad.

PALABRAS CLAVE: aprendizaje motor, marcha direccionada, autismo.

AQUISIÇÃO DO PADRÃO MOTOR DA CAMINHADA DIRECIONADA EM CRIANÇAS COM AUTISMO: UM ESTUDO DE CASO.

RESUMO:

O objetivo do presente estudo foi avaliar o padrão motor da caminhada direcionada em crianças com autismo e identificar procedimentos didáticos eficientes para favorecer a aquisição, retenção e transferência da habilidade locomotora durante a variabilidade da ação motora. Tratou-se de um estudo de caso. A amostra foi constituída por cinco crianças do gênero masculino com diagnóstico clínico de autismo (CID F.84.0) assistidas pelo Projeto de Extensão em Atividade Motora dirigido a crianças e adolescentes com autismo (PREMAUT) do Curso de Educação Física da Universidade Federal de Alagoas na cidade de Maceió. Materiais e métodos utilizados foram: Análise documental, entrevista semi-estruturada com pais e responsáveis e a aplicação dos testes motores baseados nos padrões de desenvolvimento motor de Gallahue e Ozmun (2005). Os resultados demonstraram que 80% da amostra apresenta dificuldades para realizar tarefas visuomotoras, motricidade global, equilíbrio, esquema corporal, organização espacial e organização temporal em ações cotidianas. O pré-teste apontou que 20% da amostra não conseguiu realizar as tarefas de baixa, média e alta complexidade motora, 60% demonstrou nas tarefas de baixa e média complexidade estágio inicial e 20% demonstrou estágio elementar na execução das tarefas de baixa, média e alta complexidade motora. O programa demonstrou que os circuitos estruturados são mais eficientes no treinamento de habilidades locomotoras. O pós teste demonstrou que 40% da amostra atingiram nas tarefas de baixa, média e alta complexidade estágio inicial, 40% da amostra demonstrou estágio elementar e 20% da amostra demonstrou estágio maduro na execução da caminhada direcionada. Conclui-se que a aprendizagem motora da habilidade locomotora, caminhada direcionada, é eficiente quando seu treinamento adota como estratégia circuitos estruturados independentemente de variabilidade da tarefa e seus respectivos níveis de complexidade.

PALAVRAS CHAVES: Aprendizagem Motora, Caminhada Direcionada, Autismo.