## 180 - PHYSICAL EDUCATION AND AUTISM: CASE STUDY

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**2 - Brief explanation about Autism**

In 1943, Leo Kanner called the attention for the first time for a group of children showing social isolation, alterations in the speech and extreme necessity of maintenance of routine. This set of symptoms, Kanner called autism. The autism is considered as a neurobiological disorder, but the precise mechanism of the illness is not known yet.

**2.1 - Symptoms**

There is a great variability and gravity in the manifestations of the symptoms that are basically behavioral. The main problems are related to socialization, verbal and nonverbal communication and range of interests. There is a fail in the reciprocal social interaction; difficulty in the verbal and non verbal communication; interference in the imagination with restricted interests repertoire related to activities.

**2.2 - Diagnosis**

Currently, the autism diagnosis should be part of the Invasive Upheavals of Development (IUD) or Pervasive Developmental Disorder (PDD) or Autism Spectrum Disorders. In international cooperation, the specialists have agreed to use certain criteria of behavior in the diagnosis of the autism. The most recent description is in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), of the American Association of Psychiatry. The children's autism was described by Leo Kanner in 1943, but only in 1980 in the third edition of the Diagnostic and Statistical Manual of Mental Upheavals (DSM - III) the autism was recognized as distinct clinical entity , the children with any invasive upheaval of development are no longer being classified as possessing schizophrenia. A diagnosis description similar is found in the International Classification of Diseases (ICD - 10), published by The World Health Organization.

**3 - Applied Behavior Analysis**

Applied Behavior Analysis (ABA) is a term which comes from the scientific field of the Behaviourism, that observes, analyzes and explains the association between the environment and the human behavior. Understanding what causes certain behaviors was necessary for this work, to answer the questioning of how to extend the motor repertoire of the pupils.

The behavior can be explained by the triple contingency ABC of behavior: antecedent, reply, consequence, where the antecedent is the stimulation that has influence. It is what makes the person to take an action, the reply is the action itself and the consequence is what occurred after the action.

The behavior can have some functions:

Behavior that produces attention; self-stimulatory behavior; and behavior that allows the person to avoid or escape demands.

**4 - Physical Education : Path to follow**

In this stage of the work we made a link between the analysis of the Applied Knowledge and Physical Education. We understand Physical Education as an area of knowledge that has the "Human Movement" as its study object, in this perspective we can hypothize that all the people with a minimum capacity to put themselves into motion are included in the population that can get benefits, in an active form, from its intervention.

We believe that the human being is a biopsycosocial being, endowed with innumerable capacities and intelligences, and for this reason should be stimulated in a global and healthy way.

[…] The potential of the responses given by the human beings are relative to the number of new experiences that are transmitted to them. Therefore, the person is more experienced if there is more information and chances in his/her environment. The person's praxis reflects in his/her experiences (Rosadas 2004, p.59). - Original text in Portuguese.

We believe in this affirmation of Sidney Rosadas and, with this quotation, we focused on the planning, execution and evaluation of the work, respecting the principles of the sport training presented by José Gomes Tubino: The Adaptability Principle. We present stimuli with intensity going from average to strong trying to provoke adaptations. Beyond respecting the principle of the biological individuality.

In the beginning of the work we observed the target -behavior, in other words, the behaviors that must be maximized and the behaviors that must be minimized this analysis was made by means of conversation with the family and observations of the pupil.

The General Objective of the activities of the program was to provide challenging and coherent situations that make possible the adjustment and behavior structuralized by means of corporal activities.

Each new ability was taught in a situation of a pupil and a teacher aiming the presentation of an instruction or tip. Sometimes the teacher assists the student, following a hierarchy of pre-established help. The correct responses were followed by reinforcing consequences. The education attempts had been repeated many times, until the student was able to achieve the desired criterion of evaluation.

The role of the teacher is to work as an intermediate decoder of the social and language matters. One of the specific objectives of the work is to teach the child with symptoms of the autism spectrum how to participate of the social activities and then, later, he/she will be able to socialize with children in the same age. In some situations it is necessary to translate the auditory information (verbal orders) in visual information, pointing or showing related figures with what was said.

From objects and situations that the child already shows interest to initiate social interaction, we can search the center of interest of the pupil, answers that can be found in anamnese. It is important to label emotions and sensations in the time that they happen such as: you are happy! You are tired! You are sleepy! Also help in the process of construction of the language.

**5 - Evaluation**

The evaluation, at this point receives a special attention, because it is seen as a form to identify the development of the

pupil, beyond allowing a replanning of the suggestions and position of the teacher. In the ending of each lesson the exercises receive a punctuation registered in charts, that make possible the comparisons and interpretations of the work. Criteria of evaluation observing motor aspect, visual and behavioral have been created.

**Location: Soil** **Date: 10/ 01/ 2006**
**Class n° 01** **Students: X**
**Table: 01** **Observation: Table created by the MSc. Sandro Arêdes and by the teacher Daniel Laureano Candido**

| Content | Dynamic balance | Dynamic balance | Dynamic force | Manual Coord. Eyeglas-ses | General dynami c coord. | General dynami c coord. | Communi-cation |
|---|---|---|---|---|---|---|---|
| Equipment | Transom | tire | Go up in the bank | Roll ball | soccer | Bas-ketball | behavior |
| notes | • | • | • | • | • | • | • |
| 10 | • | • | • | • | • | • | • |
| 9 | • | • | • | • | • | • | • |
| 8 | • | • | • | • | • | • | • |
| 7 | • | • | • | • | • | • | • |
| 6 | • | • | • | • | • | • | • |
| 5 | • | • | • | • | • | • | • |
| 4 | • | • | • | • | • | • | • |
| 3 | • | • | • | • | • | • | • |
| 2 | • | • | • | • | • | • | • |
| 1 | • | • | • | • | • | • | • |

**Location: Soil** **Date: 09/ 05/2006**
**Class n° 20** **Students: X**
**Table: 02**

| Content | Dynamic balance | Dynamic balance | Dynamic force | Manual Coord. Eyeglas-ses | General dynami c coord. | General dynami c coord. | Communi-cation |
|---|---|---|---|---|---|---|---|
| Equipment | Transom | tire | Go up in the bank | Roll ball | soccer | Bas-ketbal | behavior |
| notes | • | • | • | • | • | • | • |
| 10 | • | • | • | • | • | • | • |
| 9 | • | • | • | • | • | • | • |
| 8 | • | • | • | • | • | • | • |
| 7 | • | • | • | • | • | • | • |
| 6 | • | • | • | • | • | • | • |
| 5 | • | • | • | • | • | • | • |
| 4 | • | • | • | • | • | • | • |
| 3 | • | • | • | • | • | • | • |
| 2 | • | • | • | • | • | • | • |
| 1 | • | • | • | • | • | • | • |

Tables: 1 and 2 introducing the student progress X from 1° for 20° class.

**Location: Swimming pool** **Date:10/ 01/ 06**
**Class nº: 01** **Students: y**
**Table: 03**

| Content | Adaptati on to the half aquatic | Adaptati on to the half aquatic | Breathi ng | Balanc e | Adaptati on to the half aquatic | Surviv al | Comm uni cation |
|---|---|---|---|---|---|---|---|
| Equipm ent | Varied toys | Immersi on | Blow water | Displac e-ments | Immersi on | Hold in the edge | behavi or |
| notes | • | • | • | • | • | • | • |
| 10 | • | • | • | • | • | • | • |
| 9 | • | • | • | • | • | • | • |
| 8 | • | • | • | • | • | • | • |
| 7 | • | • | • | • | • | • | • |
| 6 | • | • | • | • | • | • | • |
| 5 | • | • | • | • | • | • | • |
| 4 | • | • | • | • | • | • | • |
| 3 | • | • | • | • | • | • | • |
| 2 | • | • | • | • | • | • | • |
| 1 | • | • | • | • | • | • | • |

**Location: Swimming pool** **Date: 09/05/06**
**Class nº: 20** **Students: y**
**Table: 04**

| Content | Adaptati on to the half aquatic | Adaptati on to the half aquatic | Breathi ng | Balanc e | Adaptati on to the half aquatic | Surviv al | Comm uni cation |
|---|---|---|---|---|---|---|---|
| Equipm ent | Varied toys | Immersi on | Blow water | Displac e-ments | Immersi on | Hold in the edge | behavi or |
| notes | • | • | • | • | • | • | • |
| 10 | • | • | • | • | • | • | • |
| 9 | • | • | • | • | • | • | • |
| 8 | • | • | • | • | • | • | • |
| 7 | • | • | • | • | • | • | • |
| 6 | • | • | • | • | • | • | • |
| 5 | • | • | • | • | • | • | • |
| 4 | • | • | • | • | • | • | • |
| 3 | • | • | • | • | • | • | • |
| 2 | • | • | • | • | • | • | • |
| 1 | • | • | • | • | • | • | • |

Tables: 3 e 4 introducing the student progress Y from 1° for 20° class.

| Content | Soil activities | Swimming | Soil activities | Soil activities |
|---|---|---|---|---|
| Notas | | | | |
| 10 | • | • | • | • |
| 9 | • | • | • | • |
| 8 | • | • | • | • |
| 7 | • | • | • | • |
| 6 | • | • | • | • |
| 5 | • | • | • | • |
| 4 | • | • | • | • |
| 3 | • | • | • | • |
| 2 | • | • | • | • |
| 1 | • | • | • | • |
| Students | X | X | Y | Y |

Table 5: Introduces the students punctuation general average in the proposed activities.

**Analyzes of notes**

10- Exercise accomplished until the end with autonomy, visual contact and verbal communication.
9- Exercise accomplished until the end with autonomy but without visual contact or verbal communication.
8- Exercise accomplished until the end with light physical help and verbal communication.
7- Exercise accomplished until the end with light physical help, with little visual contact or little verbal communication.
6- Exercise accomplished until the end with light physical help, without visual contact or verbal communication.
5- Exercise accomplished until the end with global physical help, without visual contact and without verbal communication.
4- Accomplished partially same exercise with global physical help, demand escape behavior.
3- Not accomplished exercise, interest lack.
2- Not accomplished exercise, inadequate behaviors like obstinacies and aggressions.
1- Exercise wasn't going propose.

**6- Analysis of the results**

The students arrived for the work beginning without answering the basic commands how to double extend the knees. The introduced difficulty to organize your body in the physical space and introduced demand and obstinacies escape behavior.

We pass these work months for an adaptation process to the class physical space, to the teacher to the materials until build close a link able affective to do us overcome the obstacles.

We realize that the Physical Education summed to the knowledge's of Applied Behavior Analysis enabled a behavior progressive increase white, observing the tables it realizes the evolution of the 1° encounter for the 20° encounter is the work development general average.

**7 - Conclusion**

At the end of the elaboration of this paper we can make a topographical analysis of the applied methodology and the used interventions and draw the following conclusions: the Physical Education is a rich possibility to improve and to extend the motor repertoire of the pupils diagnosed with autism. It is fundamental to known the particularities of the pupil to plan what and how to teach. This paper does not answer all the necessary questions to the human development it is only one impulse and cognitive stimuli to the new additional researches that can perfect and exceed these phenomena. However our contribution was to prove gradual increases in the visual contact, improvement of the corporal conscience, motor abilities and, as consequence, reduction of disruptive behaviors, the students introduced communication intention direct. It is our hope to make possible that all of us can learn and share with these people.

**8 - Basic Bibliographic Resources**

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**PHYSICAL EDUCATION AND AUTISM: CASE STUDY**

**ABSTRACT**

The present work is an adaptation of my graduation paper, composed from qualitative research and case studies that have as subjects: Physical Education and Autism. The objective is to identify the paths that the teacher of Physical Education can follow to extend the motor repertoire of the pupils diagnosed with autism, contributing with professionals and families of these people interested in understanding the behaviors presented by them, as well as searching better strategies to teach them.

Such research procedure becomes relevant due to the importance of this subject and to the lack of available literature on this topic in Brazil.

The lessons occurred individually. The study had the duration of sex months, from June to January of 2006. The lessons had been given to two children diagnosed with autism, being both of the masculine sex and in the age group of 3 and 5 year old. The lessons were given in the town of Barra do Piraí (Rio de Janeiro State), in a house adapted for this purpose. With the frequency of two trice a week.

This work is based on disciplines such as Physical Education for Special Carriers of Necessities, Psychology and Sport

Training. The project was developed by the teacher Daniel Laureano Candido and guided by MSc. Sérgio Eduardo Santos de Moura.

The mentioned work has as its methodology the analysis of the applied behavior, since the symptoms of the autism are basically behavioral. We try to understand the reason of certain behaviors and relate them to praxis of the Physical Education. Each stage of the lesson was registered in charts with a punctuation that goes from 1 to 10, created by the MSc. Sandro Arêdes and by the author and has as an evaluation criterion motor, visual and behavioral aspects.

**Key Words:** Analysis of behavior; Autism; Physical Education.

**EDUCATION PHYSIQUE ET AUTISME : ETUDE DE CAS**

**RÉSUMÉ**

Ce travail est une adaptation de ma dissertation de graduation, composée de recherche qualitative e d'études de cas qui ont comme thème : l'éducation physique et l'autisme. Nous avons pour objectif d'identifier les chemins que le professeur d'Education physique peut suivre pour amplifier le répertoire moteur des éléves diagnostiqués comme autistes, en coopérant avec les professionnels et la famille de ces personnes, interessés à comprendre les comportements qu'elles présentent, comme chercher de meilleurs stratégies pour leur enseignement.

Ces procédés de recherches sont nécessaires en raison de l'importance du sujet et du manque de littérature disponible au Brésil.

Les cours furent réalisés individuellement. L'étude a duré 6 mois, Javrier à Juin 2006.

Les cours furent ministés á deux enfants diagnostiqués comme autistes, les deux de sexe masculin, entre 3 et 5 ans. Les cours furent réalisés dans la ville de Barra do Pirai, dans l'état de Rio de Janeiro, dans une maison spécialement adaptée, avec une fréquence de deux fois par semaine.

Le travail est basé sur les disciplines de l'Education Physique pour déficients, la psychologie et l'entraînement sportif. Le projet fut développé par le professeur Daniel Laureano Candido et orienté par Maitre Sergio Eduardo Santos de Moura.

Ce travail a comme méthologie l'analyse de comportement appliqué, étant donné que les symptômes de l'autisme sont basiquement comportementaux. Nous avons cherché à comprendre le pourquoi de certains comportements et à les mettre en relation avec la pratique de l'Education Physique. Chaque étape du cours a été répertoriée en tableaux faits d'une ponctuation qui va de 1 à 10, crée par le professeur Maitre Sandro Arêdes Gonzaga et par l'auteur, et a comme critère d'évaluation, les aspects moteurs, visuels et comportementaux.

**Mots clés** : analyse de comportement, autisme, éducation physique.

**EDUCACIÓN FÍSICA Y AUTISMO: ESTUDIOS DE CASOS**

**RESUMEN**

El presente trabajo es una adaptación de mi disertación de graduación, compuesta por pesquisa cualitativa y estudio de casos que tiene como tema: Educación Física y Autismo. Objetivamos identificar los caminos que el profesor de Educación Física puede seguir para ampliar el repertorio motor de los alumnos diagnosticados con autismo, contribuyendo con profesionales y familiares de estas personas interesadas en comprender los comportamientos presentados por ellas, bien como buscar mejores estrategias para enseñarlas.

Tal procedimiento de pesquisa se vuelve relevante debido a la importancia del asunto y a la carencia de literatura disponible en Brasil.

Las clases fueron realizadas individualmente. El estudio tuvo duración de seis meses, comprendiendo el período de Janeiro a Junio de 2006.

Las clases fueron ministradas a dos niños con diagnóstico de autismo, siendo ambas del sexo masculino y con edad entre 3 y 5 años. Las clases fueron realizadas en la ciudad de Barra do Piraí, Estado de Rio de Janeiro, en una casa adaptada para esta finalidad. Clases con frecuencia de dos veces a la semana.

El trabajo se fundamenta en las disciplinas de Educación Física para Portadores de Necesidades Especiales, Psicología y Entrenamiento Deportivo. El proyecto fue desarrollado por el profesor Daniel Laureano Candido y orientado por el profesor Sérgio Eduardo Santos de Moura.

El mencionado trabajo tiene como metodología el análisis del comportamiento aplicado, visto que los síntomas del autismo son básicamente comporta mentales. Buscamos comprender el porqué de determinados comportamientos y relacionarlos a la práctica y teoría de la Educación Física. Cada etapa de clases fue registrada en tablas compuestas por puntuación que van de 1 a 10, Creada por el profesor Sandro Arêdes y por el autor y tiene como criterio de evaluación aspectos motores, visuales y comporta mentales.

**Palabras claves:** Análisis de comportamiento; Autismo; Educación Física;

**EDUCAÇÃO FÍSICA E AUTISMO: ESTUDOS DE CASOS**

**RESUMO**

O presente trabalho é uma adaptação do meu trabalho de conclusão de curso de graduação, composta por pesquisa qualitativa e estudos de casos que têm como tema: Educação Física e Autismo. Objetivamos identificar os caminhos que o professor de Educação Física pode trilhar para ampliar o repertório motor dos alunos diagnosticados com autismo, contribuindo com profissionais e familiares dessas pessoas interessados em compreender os comportamentos apresentados por elas, bem como buscar melhores estratégias para ensiná-las.

Tal procedimento de pesquisa torna-se relevante devido à importância do assunto e à carência de literatura disponível no Brasil.

As aulas foram realizadas individualmente. O estudo teve duração de seis meses compreendendo o período de Janeiro a Junho de 2006.

As aulas foram ministradas a duas crianças com o diagnóstico de autismo, sendo ambas do sexo masculino e encontrando-se na faixa etária de 3 e 5 anos. As aulas foram realizadas na cidade de Barra do Piraí, estado do Rio de Janeiro, em uma casa adaptada para este fim. Duas vezes na semana.

O Trabalho fundamenta-se nas disciplinas de Educação Física para Portadores de Necessidades Especiais, Psicologia e Treinamento Desportivo. O projeto foi desenvolvido pelo professor Daniel Laureano Candido e orientado por Ms. Sérgio Eduardo Santos de Moura.

O mencionado trabalho tem como metodologia a análise do comportamento aplicado, visto que os sintomas do autismo são basicamente comportamentais. Procuramos compreender o porquê de determinados comportamentos e relacioná-los à práxis da Educação Física. Cada etapa da aula foi registrada em tabelas compostas por pontuação que vai de 1 a 10, criada pelo professor Ms. Sandro Arêdes e pelo o autor e tem como critério de avaliação aspectos motores, visuais e comportamentais.

**Palavras chaves:** Análise do comportamento; Autismo; Educação Física.