LANGUAGE EDUCATION THROUGH MOTOR AND PSYCHOMOTOR ACTIVITIES FOR AUTISTIC CHILDREN

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Abstract:This paper aims to analyses the motor and psychomotor peculiarities specific to autistic children with associated retardation, and also the way in which autism and retardation influence the cognitive and affective development and the language. This study has entailed the application of a set of tests with a view to a discrete evaluation of each subject and to determine their psychomotor deficiency in correlation with the age of the autistic child. It should be stated that the support and implementation of psycho-pedagogical intervention programs in schools, aimed at autistic children, which include alternative therapies based on motor and psychomotor activities, help in language stimulation, intellectual development and social integration of these children.

Keywords: psychomotor deficiencies, autistic children, language, therapeutic program

Introduction

Autism is a contemporary world challenge. The role of the experts in this field is that of identifying the appropriate ways and means capable of adequately matching the communicative profile of the ASD individual (Autistic Spectrum Disorders) so that they become able to send messages in a functional manner and to interact to their social peers.

As a rule, autistic children do not comprehend verbal explanations of events or actions, do not remember the sequences or stages of an activity, therefore they cannot anticipate. At the same time, they do not accept to leave their routine. Their adaptation to change may occur gradually, after iterative learning within the framework of specific therapies. In the motor activities, the autistic children encounter difficulties in following group instructions because: they cannot follow the group (they need individual instructions), they do not understand certain words (they can learn many words in therapy, but not their synonyms); they permanently need feedback and sometimes prompting; they cannot adapt to changes undergone by an educational program, etc. Next to autistic spectrum disorder, most children also display mild to moderated retardation, deficient communication and psychomotor instability. (American Psychiatric Association, 2003)

Psychomotor deficiencies are disorders of the autistic individual's adequately relating to their environment. They are determined by insufficient conjugation of the motor and psychic forces in performing the action, as a result of perceptive, sensorial, intellectual and motor blockings that reduce the acquisition of information, the correct execution of a requirement and, implicitly, the message exchange between at least two people. There are organic causes that determine the increase in the frequency of occurrence of psychomotor deficiencies for a long time, and this particularly obvious in autistic people with associated mental retardation.[1] (Păunescu C, 1977) *Mental deficiencies define underdevelopments, development inhibitions or incomplete development of the psychic activity by cerebral insufficiency installed under the action of prenatal, perinatal or postnatal factors.* In our

[1]Păunescu C, *Deficiența mintală și organizarea personalității [Mental deficiency and organization of personality]*, E.D.F, Bucureşti, 1977.

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study case, the five autistic children display forms of mental retardation probably produced by lesions of the central or peripheral nervous system. Sensorial-perceptive, motor and intellectual deficiencies lead to movement control and coordination disorders which disrupt adaptation and full integration in the environment.

Research methodology

The sample lot consists of 5 boys aged 8-10. Only one child is integrated in mass education (the eight-year old), while the others study in special schools as they could not adapt to the system.

Table 1. *Subject presentation*

Subject	Gender	Age	IQ	Deficiency type
Case 1 B. S.	M	8 y. o.	70	Mild psychic retardation ASD
Case 2 A. N.	M	9 y. o.	50	Moderate psychic retardation ASD
Case 3 D.O.	M	9 y. o.	48	Moderate psychic retardation ASD
Case 4 S.A.	M	10 y. o.	45	Moderate psychic retardation ASD
Case 5 I.T.	M	10 y. o.	40	Moderate psychic retardation ASD

The recovery process was complex and lengthy, being performed in three fundamental stages: a) initial evaluation (pre-test), in which the autistic children with associated mental retardation were subject to the following tests: pointing, tapping, Goodenough, A de Meur; b) at the second stage, individualized intervention programs have been elaborated and implemented. The therapeutic undertaking had the objective of developing receptive language and psychomotor behavior during the educational therapy activities; c) the third research stage consisted of final assessment (post-test) with a view to monitor and assess the effectiveness of the intervention programs and of the methods involved. This latter aspect has been carried out by comparing the results in the initial stage to the results recorded during the final evaluation stage.

Description of the evaluation tests

In order to assess whether the social integration deficiencies are of psychomotor nature, the evaluator subjects each child to a set of specific tests:

Motor and psychomotor evaluation

Walking back and forth along a 4-meter line after the preliminary demonstration performed by the assessor.

Standing at attention, with their heels close, the children genuflect two times with their arms in front of them and two times with their arms spread laterally, after the preliminary demonstration performed by the assessor.

With their arms of their hips, the subjects raise the left leg, standing on the right leg for 5 seconds, then raise the right leg, standing on the left leg for other 5 seconds, following the demonstration of the assessor. With their legs spread, the subjects perform several exercises:

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bending the body forwards, backwards, to the right, to the left, abiding by the indications of the instructor.

Assessment of the receptive and expressive language: body parts awareness and identification of colors in various sources

The examiner requires the child, without prior demonstration, to execute and correctly indicate, in a timely manner, the following: Put your hand on your head! Place your hands on your legs! Show me your fingers, ears, eyes, etc. Then, seated at the table, facing the examiner, the subject has to recognize a few common colors: white, red, green, blue, black, etc.

Tests for the assessment of motor and psychomotor coordination

a. The *Pointing test* measures handedness and manual swiftness, having the eye-hand coordination as the main objective. *Evaluation:* the execution time (in seconds) of the dominant hand with the execution time of the non-dominant hand and refers to the test standard.

b. *Tapping* is mainly geared towards the measurement of the speed of hand joint and fingers. The subject has to draw, first with the dominant hand, as many points as possible on a sheet of paper in 6 seconds; the operation is then repeated with the non-dominant hand on another sheet of paper. The points add up and the total is referred to the test standard (See Tapping test standards).

c. The *Goodenough* test targets the relation between sight and motor act in the graphic environment. For this test, one needs a sheet of paper and a pencil. *Indications:* at the prompt of the examiner, the child draws a man. The child can be encouraged but not influenced. The test can also function at the group level, in which case, special measures should be taken to avoid copying from various sources: books, illustrations, prints, etc.

Evaluation:

- Category A. Unidentifiable designs enter this category. If the drawing is undecipherable, it is marked with 0. If there is certain control and line ordering (circle, triangle, square or spiral), it is marked with 1 point.
- Category B comprises drawings that can be recognized as representations of the human body, regardless of their execution. Each identifiable elements is marked with 1 point, respectively with 0 points if the items from the standards of the Goodenough test are not observed.

d. - A. De. Meur test – testing knowledge of the body parts. (Ulici, Gh., Radu, I.D., 2003)

Implementation of the therapeutic intervention program

In elaborating the intervention plan, the therapist proposes a number of educational activities meant to stimulate and develop the psychomotor behavior.

Structure of the therapeutic program: *(Curriculum for PreUniversity Education: specific and compensatory therapies, 2008)*

- Exercises that develop the eye-motor coordination: games with balloons and balls: catching, throwing, grasping, squeezing, etc.; thread inserted through the eye of a needle; perforating a piece of paper or a cardboard following a given pattern; reeling a wire or a string; binding papers with paperclips; handling small objects with the help of tweezers; threading beads or buttons on strings of nylon, simple braiding of lanyards or wool; clay modelling: letters, number, geometrical shapes; imitating noises of rain, horse hoof beat, piano playing, typing with finger tapping on the table; embedding geometrical shapes, puzzle games, clippings, collages, coloring observing the contour lines, using a stencil to draw an outline, etc.

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- Spatial orientation and body parts awareness exercises: children perform various movements with the body, arms or legs at the verbal prompts of the therapist, with and without prior demonstration; for recognizing one's own body scheme, various body parts are indicated, starting with the most important ones – head, body, limbs, then, more specific parts: eyes, nose, mouth, ears, eyebrows, shoulder, elbow, knee, fingers, etc.; for recognizing the other's body scheme, the exercise is performed with the support of another person; for learning consolidation, it is recommendable that the body be reconstituted from discrete parts (detachable mannequin); on worksheets with drawings which represent the human body, children color the parts indicated by the therapist (e.g. the right hand, the left eye). Other drawings may have missing elements, the child's task being that of drawing the respective missing element.

Comparative analysis of results

The cases assessed during the experiment have been evaluated from the cognitive intelligence **(IQ)** perspective but a type of emotional intelligence **(EQ)** was also manifest in subjects during therapy. It has been noticed that they can successfully control their impulses in case of failure, they are able to adapt to a new environment provided that it suggests safety or that a known person is present, and that they have emotional reactions.

Table 2. Initial testing with the data from final testing

Test	Case 1		Case 2		Case 3		Case 4		Case 5	
	E. I.	E.F.	E. I.	E.F.	E. I.	E.F.	E. I.	E.F.	E. I.	E.F.
Pointing	D. H. 4'50" L. H. 5'30"	D. H. 3' L. H. 3'30"	D. H. 3'30" L. H. 4'	D. H. 3' L. H. 3'15"	D. H. 3' L. H. 4'	D. H. 1'15" L. H. 2'30"	D. H. 3' L. H. 1'40"	D. H. 1'15" L. H. 1'	D. H. 4'50" L. H. 5'30"	D. H. 3' L. H. 3'30"
Tapping	D. H. 5 points L. H. 4 points	D. H. 10 points L. H. 6 points	D. H. 3 points L. H. 2 points	D. H. 6 points L. H. 4 points	D. H. 7 points L. H. 5 points	D. H. 10 points L. H. 6 points	D. H. 6 points L. H. 5 points	D. H. 9 points L. H. 7 points	D. H. 5 points L. H. 4 points	D. H. 10 points L. H. 6 points
Goodenough	Body Parts									
	12	13	9	8	9	10	16	18	12	13
A de Meur	Body Parts									
	10	13	8	12	8	10	10	14	10	13

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Comparing the data obtained in initial testing with the data from final testing, the following have been noted: Pointing – cases 1, 2 and 3 – visible eye-motor coordination improvement; Tapping – case 1 best adapts to the requirements and obtains the highest score; the Goodenough test – cases 1, 4 and 5 have drawn sketches that can be easily recognized as representations of the human body, with observance of the basic elements; A de Meur: the subjects were capable of identifying all parts of the human body indicated by the therapist during the final evaluation.

Conclusions

Autistic children with intellect deficiencies selected for this study are teachable and have the possibility of interiorizing basic motor and psychomotor skills, but they are often prompt-dependent, which leads to little autonomy. The results obtained prove the utility of an individualized intervention plan meant to activate the learning potential of the autistic child with mental retardation. The differentiated approach to learning in the educative activities performed with autistic students contributes in language stimulation and development of the psychomotor potential.

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