Motion Games for Static Balance on Visually Impaired Children

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Abstract

This paper addresses on multiple therapeutically aspects of visually impaired children, from the adapted physical activities point of wives. The functional life qualities benefits of the motion games over the aspects of psychomotor disorders. The teacher must adapt each game to the possibilities of the child and to the individual disorders and deficiencies, and set the most important targets, as a constant and regular factor of adapted development in life quality of the child.

In terms of physical development, lack of vision does not directly cause disturbances, but the trend towards sedentarism and knowledge of the environment through predominant tactile kinesthetic information are responsible for the occurrence of physical deficiencies and delayed motor development.

This study is outlined as referring to a need to prevent, compensate and complex therapy of the physical and motor development disabilities of the visually impaired schoolchild, by carrying out complex and appropriate assessments with continuity in the development and application of school curricula of physical culture, with a specificity in the psycho-motor integration of the visually impaired pupil, using sport-specific means adapted to the ambulatory pupils' physical therapy. The study was conducted at the School for the Deficiencies of View no. Austrului 33, Bucharest, sector 2, on a group of 27 subjects enrolled in Gymnasium group V-VIII during January 2008 - June 2009. As a research method, I used the pedagogical experiment using initial and final measurements of a test battery. In this paper I present the results of the adapted static balance test, these being statistically processed on the basis of the individual study with the permanent character of the appropriate bibliography. In the physical education and sports adapted lesson physical exercise can be considered the easiest and most appropriate form to capture and motivate the child and to develop abilities in empathy with its playful side with eloquent results in the psychomotor development of children with vision deficit.

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1. Introduction

In terms of physical development, lack of vision does not directly cause disturbances, but the trend towards sedentarism and knowledge of the environment through predominant tactile kinesthetic information are responsible for the occurrence of physical deficiencies and delayed motor development.

These lead to the inevitable slowdown in motor, psychological and intellectual development. This study is outlined as referring to a need to prevent, compensate and complex therapy of the physical and motor development disabilities of the visually impaired schoolchild, by carrying out complex and appropriate assessments with continuity in the development and application of school curricula of physical culture, with a specificity in the psycho-motor integration of the visually impaired pupil, using sport-specific means adapted to the ambulatory pupils' physical therapy.

In terms of physical development, the lack of vision does not directly cause disturbances, but the tendency towards sedentarism and the knowledge of the environment through predominantly tactile-kinesthetic information, are responsible for the appearance of physical deficiencies and of delayed motor development.

Therefore, the need to know and integrate correctly the physical development of the ambliop school, the need to detect, examine and evaluate, to follow the evolution and finally to apply a complex and effective prevention, compensation or therapy decision.

The evaluation process is very important in directing the motor activities, because the effects of the means used immediately or late on the whole organism, and coordinates the operative directing of the physical effort.

The development of the psycho-motility of the amblyopic children, through specific physical exercise programs, games of motion and adapted

physical therapy, structured according to the needs of the subjects in the study and applied according to a specific methodology, may be able to optimize the potential of the children with amblyopia;

Physical exercise, a basic means of physical education and physiotherapy, applied in its playful form, adapted movement game, it can optimize the psycho-motor development of amblyopic students.

In the use the complex and adequate evaluation, a real intervention and compensation of the disorders of physical development of the amblyopic student can be ensured, performing a complex therapy of the motor development disorders if we use motor games with technical tactical structures in sports games.

If it is acted through team games associated with physical therapy, the psycho-socio-cultural integration of amblyopic students can be improved.

The psychomotor behaviors of each individual evolve according to his / her aptitude, the degree of physical and intellectual development and the educational influences he was subjected to during his childhood. As a complex function that determines the regulation of human behavior, psychomotor activity includes the participation of different processes and psychic functions, which ensure both the reception of information and the proper execution of response acts. Through its basic components, psychomotricity makes possible the pragmatic adaptation (learning of professional, manual, intellectual techniques), social adaptation (ways of interpersonal communication), aesthetic adaptation (techniques of bodily expression), educational adaptation. (Răcăşan M. 2002)

Bedoin N. (1990) makes the following details: "the body diagram and the self-representation (of the corporeal self) have as a common point of permanent self-meeting. By knowing the body scheme, one reaches the permanent self in space. The image of the body is linked to the permanent in space and to the location in time, and the self-representation is linked to the child's relations with the world.

The body scheme is elaborated by the automatisms and the afferents that work beyond consciousness. The body diagram is a simplified way, not so much of the form, as of the functions and relations of the different parts of the body, constituting a stable landmark for the evolution of posture and mobility. In a broad sense, knowledge of the body diagram implies:

- the child's knowledge of his own body scheme (to know how to name and show the different parts of the body);
- knowledge of another person's body scheme
- correctly positioning objects in space in relation to their own body or other objects;
- orientation in space. (Preda V. 1999)

2. Assumption

The inductive hypothesis of research is outlined as referring to a necessity for the prevention, compensation and complex therapy of the physical and motor development disabilities of the amblyopic school, by carrying out complex and appropriate evaluations, with continuity in the development and implementation of school curricula physical culture, specific in the psycho-socio-cultural integration of the visually impaired individual, using specific means of sporting games adapted to the ambulatory students' physical therapy.

3. Logistics

The study was conducted at the School for the Deficiencies of View no. Austrului 33, Bucharest, sector 2, on a group of 27 subjects enrolled in Gymnasium group V-VIII during January 2008 - June 2009. As a research method, I used the pedagogical experiment and instrument we used a stopwatch, using initial and final measurements of a test battery. In this paper I present the results of the adapted static coordination test, these being statistically processed on the basis of the individual study with the permanent character of the appropriate bibliography.

3.1. Adapted static coordination test

Required material: stopwatch.

Instruction to the subject: Sitting on one foot, the preferred foot with the other foot on the inner face of the opposite leg, hands on the hips, eyes closed, and maintains the position until the stop command, as exemplified.

Examination process: The handwriting examiner starts the timer when the subject has reached the correct position and monitors the position for 60 seconds. Note for recording: 2 attempts are made, noting the best test, in seconds with scoring from 0 to 60.

The timer stops when the subject:

- ✓ open the eyes
- ✓ changes the position of the bent leg
- ✓ raises the arms on his hips
- ✓ bend the support knee
- ✓ hopping on the support leg.

3.2. As working principles, the following aspects were considered:

- ➢ the use of diffuse light for cases of glaucoma and albinism and strong light in other cases
- ➢ the doors of the rooms should be closed in order not to create confusion in the perception
- ➢ work space free of obstacles
- ➢ hazardous areas (pillars, arches, radiators, etc.) insulated with protective materials in eventual contact with them
- ➢ marking the areas where the activities take place through surfaces with different texture and consistency (grass, slag, synthetic, parquet)
- ➢ delimiting the workspace by living colors for amblyopic orientation
- ➢ at the first session, helping children to know their space, materials, equipment, sizes, texture, using valid senses
- ➢ for children wearing glasses or other refraction systems, the use of protective systems, especially in the case of objects handling (knees, sticks, ropes, etc.)
- ➢ working balls varying in consistency, size, weight, color, to provide a wide range of visual and tactile-kinesthetic information
- ➢ use of contact sounding systems such as String balls or electronic contact or motion activated systems
- ➢ the use of a whistle or verbal indicator to mark its beginning the end of a driving action, but also the spatial orientation

- using music for relaxation, motivation and positive attitude
- permanent verbal communication to create a climate of trust, security, encouragement, presence, affection
- use of analytical exercises, games, competitions that provide immediate satisfaction to children and facilitate social contacts with important functional effect
- manually guiding the child's movement to the correct positions needed to train a certain skill
- using a model (another colleague or a mobile-sized doll) so that the child distinguishes how the body segments relate to a movement
- guide the movement or motor activities of the blind child by an ambulatory colleague with remnants of sight
- the use of hearing aids in case of visual impairment
- the use by the teacher of a clear, concise language that refers to landmarks known to the child.

3.3. The didactic method used

The motion game contributes to the solving of several tasks, for example the development of a physical quality or a movement skill, while at the same time contributing to the education of a moral and willful quality.

The teacher must know how to orient himself in choosing the game, stopping only on those who can exert a positive influence from a physical, moral and hygienic point of view, avoiding those with undesirable effects related to: superstition, unnatural movements, non-high-risk, high-risk accidents, games where cruelty or anti-social feelings can manifest. (Dragnea A., 2006)

The organization of games in which children gain skills, learn and adopt the right body posture, develop their sense of balance, coordination, mobility, strength, reaction speed and reflexive response, compensate for deficiencies, combat obesity, cardio-respiratory function, development of tactile-kinesthetic perception and memory, to manifest and develop the creative initiative, to educate collectively, the spirit of comradeship, fair play, organization, observance of rules, empathic spirit and self-confidence, sense of utility, belonging and inclusion.

Once the pedagogical task has been established, it is necessary to consider other factors such as: the game team, the game, age, health, venue, gaming teams, arbitration, explanation and demonstration of the game, discipline and game rules, dosing, results, rewards, or prizes. (Epuran M., 2005)

The children played during their physical education and sport classes and also extra-curricular, the specific special designed applied motion games and also the specific games training together, 3 times a week, 45 minutes a session, during the whole educational year from January 2008 to June 2009.

Examples of games with a technical-tactical content in sports games with corrective valences for amblyopia students, games found in the book "Movement Games for Amblyopia" - by Adina Geambaşu, a book that is part of the Compilation of Motrical Activities Formative - Series of Movement Games - University Card, Bucharest - 2005:

"Turkish looks for the ball"; "In the cottages"; "The Striking Strike Ball"; "The worker and the worker"; "The Traveling Book"; "Creeping Train"; "Rolled Ball"; "Who is wrong"; "Mountain Trail"; "Match action"; "Basket Ball"; "Twine".

Figure 1. Motion games for visually impaired children

4. Results

In the next table I present the dates for initial and final measurements:

Table 1. Initial and final measurements January 2008 - June 2009

Subjects	Initial testing	Final testing
1	32	2
2	5	7
3	10	21
4	4	23
5	15	60
6	4	4
7	4	4
8	12	32
9	4	10
10	4	4
11	10	31
12	15	50
13	4	5
14	4	27
15	5	20
16	10	47
17	4	20
18	4	4
19	30	60
20	30	60
21	15	30
22	12	34
23	10	39
24	4	10
25	4	37
26	4	27
27	4	52

Arithmetic mean - its value in the two tests is 9.47 seconds in initial testing and 28.4 in final testing, indicating an increase in the time the subject cannot maintain balance at final testing compared to testing initial. The median value, which is the value of the half-string of recorded results and is not influenced by the extreme data, also a central trend indicator, has values that are not close to the arithmetic mean value, both at the initial test (5.00 sec) and final testing (27.00 sec), indicating differences between the determined values in the subjects included in the sample.

- The calculated variability coefficient shows values of 87.37 in initial testing and 66.66 in final testing indicating a non-homogeneous sample of equilibrium in both tests (Cv> 20%).
- test (Student) - the value of P calculated is 0.000, resulting in P <= 0.05. Statistically, the results differ significantly. The null hypothesis is rejected.

5. Conclusions

The content of the adapted motor activities must aim at optimizing the bio-motor potential of the individual, as well as the cognitive, affective and social-relational components in order to obtain the quality of life, with specificity focused on the motor being placed in a new perspective that implies the exit from the pattern, the search for spontaneity, the flexible adaptation, the emotion, the communication. (Geambasu A., 2006)

Active involvement of students, teaching staff and parents, as well as the response, usefulness and applicability of tests and programs used for psycho-motor development of amblyopic students, and of enriching the didactic process, given the lack of specialized materials with specific in the field, as well as the formation of a multidisciplinary driving team from which not to miss with pedagogues, the physical therapist, the psychologist, the doctor, with the active involvement of the family. .

The multidimensional value of adapted motor activities recommends them as one of the most efficient means of education of amblyopic children, aiming at influencing personality.

The static balance for the children involved in the research was improved through the practice of a proper training and also adapted motion games.

6. Discussions

According to Preda V. (1995), the elaboration of the spatial-temporal structure is a premise of the psychomotor development. Any phenomenon of objective relationships takes place in space and time. The average space is perceived and constructed in the mental plane, as a result of noticing the

positions, directions, movements; it is organized starting from the sensory-motor level, of the perceptions related to the action, based on the knowledge (elaboration):

- own body diagram;
- the body scheme of the partner;
- right-left differentiation;
- elaborating the various positions of the objects between them;
- elaboration of topological notions (closed-open, top-down, etc.)

Static balance and postural control are achieved by contraction of some muscle groups of the trunk, in relation to the position of the head in space. This is achieved through an activity coordinated by the central nervous system and in which the vestibular analyzer, the deep conscious proprioceptive sensitivity and the unconsciousness, the extra pyramidal system and the visual analyzer are involved. (Penefonda G., 1992).

The situation of the child with visual impairment is characterized by establishing relations with the external environment through touch, taste and smell, with the help of the other senses: hearing, touch, taste, smell. These states lead to the inevitable slowing down of mental and intellectual development. The variant of hearing, feeling, tasting requires much more effort than seeing. (Wallon H., 1959) For the blind child it is much harder to discover the external environment, to make the connection between the object and the word. He lacks many stimuli that contribute to his development, stimuli that he receives by means other than the sight.

The blind children, following the direct consequence of the blindness, are characterized by the poverty of the movements, vicious positions, disordered movements, states that influence and the psychic and intellectual development of the child. Thus, the visual impairment induces changes on several planes, namely:

- the neurophysiologic plan
- the physical development plans
- the plan of primary and secondary cognitive processes
- the socio-affective plan
- the motor plans.

In terms of physical development, the lack of vision does not directly cause disturbances, but the tendency towards sedentary and the knowledge

of the environment through predominantly tactile-kinesthetic information, are responsible for the appearance of physical deficiencies and of delayed motor development. (Hellen Keller, 1914)

The repercussions presented above are the first and foremost consequence of a process and of an inadequate stimulation, thus evident the need for a qualified, early intervention, in order to prevent and prevent these deficiencies and deficiencies. (Cordun M., 1999)

Thus the physical therapist, through specialized knowledge but also through collaboration with parents and the multidisciplinary education team of which he is part, individually analyzing the amblyopic or blind child will make a kinetic program adapted to his unique needs, starting on the way to his correct and beneficial stimulation. If the adapted physical education and sport have the role to compensate the effects of the visual deficit, through group school activities, having an already well established place in the hierarchy and the school curricula, physical therapy, it comes to meet and fulfill the common objectives, bringing an important contribution to the level by individual and individual needs specific to the human being as a unique and unrepeatable entity, compensating for the deficit at all levels (primary acquisition, refinement, adequacy, improvement) and in all areas (corporeal, spatial, relational). (Mujicicov N. 1966)

Exercise through play can be considered the easiest and most appropriate way to capture and motivate the child, in empathy with his playful side.

The game contributes to solving several tasks, such as developing a physical quality or a movement skill, while contributing to the education of a moral and willful quality.

The teacher must know how to orient him or her in choosing the game, focusing only on those who can exert a positive influence from a physical, moral and hygienic point of view, avoiding those with undesirable effects related to: superstitions, unnatural movements, unhygienic, with increased risk of accidents, games where cruelty or antisocial feelings may occur. (Predoiu R. 2009, Teodorescu S. and co, 2004)

It will follow the organization of games in which the children gain activity skills, develop and adopt a correct body posture, develop their sense of balance, coordination, mobility, strength, speed of reaction and reflexive

response, compensating for deficiencies, combating of obesity, training of the cardio-respiratory function, development of tactile-kinesthetic perception and memory, to be able to manifest and develop the creative initiative, to educate the collective feeling, the spirit of camaraderie, the fair play, the organization, the observance of the rules, empathetic spirit and self-confidence, sense of usefulness, belonging and inclusion.

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