

TECHNOLOGY OF FORMATION OF VERTICAL STABILITY BODIES OF CHILDREN AGED 7 - 10 YEARS OF HEARING LOSS

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Annotation. Purpose - the development of technology forming the vertical stability of the body of primary school children with impaired hearing. We study the main directions, methods and techniques used in the process of physical education primary school children with impaired hearing. There was a significant backlog of children in this nosology in the development of the equilibrium function. Highlighted the principles of technology forming the vertical stability of hearing children. The technology includes: the goals, objectives, direction and implementation stages, means and methods, criteria for evaluation and the expected effect of the pedagogical impact. The technology will fulfill its function in the event that the child was significantly improved lung function equilibrium amplitude common center of gravity of the body in the main stand on a fixed support with their eyes open; amplitude common center of gravity in the sample Romberg, while retaining posture in the test Bondarevsky. It is noted that the criterion of efficiency of the technology are: improved posture, increase the level of physical fitness, the appearance of confidence in his walk and accuracy in the movements and gestures.

Keywords: technology, posture, function, balance, retention, criteria.

Introduction

Existing in the world trend to increasing of quantity of disabled people, significant part of which are people with poor hearing, stimulates scientists to search the most effective pedagogic methods and techniques, facilitating such people's successful socialization, which is possible only if all compensatory abilities of children with poor hearing would be mobilized. Actually, owing to special perceptiveness and plasticity of children's mind, problem of social-cultural integration of deaf children is closely connected with social adaptation of children of junior school age.

The fact that there is close connection of junior pupils' physical condition and development of psychophysiological qualities [17] permits to say that reasonable, specially organized process of physical education would not only facilitate leveling of after-effects of physical condition's lagging of children with such nosology, that is pointed at by some researchers [16], but would also ensure activation of cognitive processes of the pupils that influence positively on their speech skills. Therefore, social integration of pupils with poor hearing is a complex problem of improvement of their somatic health, workability, motion activity and development of psycho-physical abilities [4].

It should be noted that specialists have responded to society's demand and now are actively work out methods of application of innovative approaches, methods and means of physical education of children with poor hearing, considering searching the most effective mechanism for correction and compensation of physical defects. However, existing programs do not solve spectrum of tasks of this category junior pupils' social education.

Ideas of education humanization reflected in creation of conditions for opening po6tential of every child, including children, who have health problems. Creation of required pedagogic conditions implies development and implementation in academic-educational process some technologies, application of which would facilitate preservation and improvement of health, development and formation of physical abilities, opening creative potentials of pupils.

Review of literature sources showed that there is sufficient amount of works, in which specialists deal with problems of physical education of children with poor hearing.

As per literature data specific features of development of pupils with poor hearing are lagging of physical condition's indicators, reduction of coordination abilities, weak muscular strength and slow development of speed-power abilities [6, 12, 16] in comparison with their practically healthy peers. Accordingly, researchers try to correct defects, characteristic for children of such category, using all variety of physical culture means.

In opinion of S.A. Koroliov main means of physical education of deaf children and children with poor hearing are physical exercises, oriented on formation and comprehensive development their motion-coordination abilities, including exercises, which would stimulate development of "hand dexterity" [11], and I.P. Vypasniak considers Ukrainian folk games to be the best exercises for this purpose [4].

A.L. Kramarenko, in the course of his researches, offered to carry out physical culture trainings of pupils with hearing problems with the help of audio-visual influence, videlicet, low-frequency sound oscillations and light impulses [12]. In the author's opinion combination of rhythmic music and pulsing colors can effectively control motion activity of children with poor hearing [12].

In order to solve health-related, educational, teaching and correction tasks of adaptive physical education (APE) of children with poor hearing A.I. Kartavtseva proposed pedagogical technology of trainings, which include application of universal sport complex in extra-curriculum time [8].

In his turn, A.P. Kirgizov proved purposefulness of using basketball at physical education classes at boarding schools of 1st degree for deaf children and necessity of application of academic-training modules of game and competition orientation at additional classes with such children [14].

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V.V. Verbina offered to introduce additional complexes of fit-ball gymnastics: "small" acrobatics, articulation gymnastics in program of children' physical education of special educational establishments [3]. Alongside with it T.S. Golozubets theoretically grounded and experimentally tested effectiveness of application of creative means (APE) [6].

Review of existing technologies can be continued because, as it has been already mentioned, problem of physical education of children with poor hearing is widely discussed in scientific circles [1, 4, 16]. Nevertheless, in spite of the fact that the most noticeable distinction of children with poor hearing from their healthy peers is their weak ability to keep static and dynamic balance [3, 4, 6, 19, 20], at present time there has not been developed a technology for training balance function of junior pupils with poor hearing. Besides, development of new technologies in the field of human bio-mechanics of stability is hindered owing to absence of single scientific conception about keeping of vertical posture [2] that proves timeliness of our research.

The work has been fulfilled as per combined plan of scientific & research work in the field of physical culture and sports for 2006-2010 by topic 2.2.1 "Improvement of bio-mechanical technologies in physical education and rehabilitation, considering space organization of human body" (state registration number 01060106U010786) and combined plan of scientific research work in the field of physical culture and sports for 2011-2015, by topic 3.7. "Improvement of bio-mechanical technologies in physical technologies in physical education, sports and rehabilitation, considering individual human features" (state registration number 0112U001860).

Purpose, tasks of the work, material and methods

The research was oriented on development of technology of vertical stability's formation of junior school age children with poor hearing.

In the course of the researches we used such methods as study, analysis, generalization and systemizing of literature data and understanding of advanced pedagogical ideas.

The object of the research is technology of selection and application of physical culture means for development of 7-10 years old children's with poor hearing function of balance, while the subject of the research is scientific foundation of the selected technology.

Results of the researches

As a result of conducted work, thinking over experimental results and systemizing of gained pedagogic experience we developed technology of formation of vertical stability for children of junior school age with poor hearing.

In our research we regarded technology of body vertical stability's formation of children with poor hearing as preparation and organization of APE process on the base of scientific principles and ideas, in the course of whose realization there executed stage-by-stage implementation of its components, oriented on formation of the mentioned features, using forms, methods and means, adequate to peculiarities of physical condition of children with poor hearing.

The purpose of the offered technology is formation of vertical stability of junior pupils in APE conditions.

In the course of our work we determined the following tasks of the offered technology:

 Provision of full-fledged physical progressing of children with abnormalities of organism's functions, ensuring perception of sound oscillations;

- Development of vertical stability of 7-10 years old children;
- Provision of balance keeping ability;
- Training of movements' accuracy and confident gait;
- Formation of ability to regulate own actions in space;
- Increasing of motion activity;
- Correction of posture;
- Correction of supporting-springing function of feet.

Technology of vertical stability's formation of 7-10 years old children with poor hearing consists of conceptual component, which includes foundation of pedagogic technology with the help of principles, ideas and postulates, on which it is based; content part, consisting of systems of educational purposes and content of academic material as well as of procedural component, including general requirement to organization of teaching process, methods and forms of teachers' work and criteria and methods of estimation of teaching results [17].

It is necessary to stress that conceptual approach with development of technology was correcting-developing direction of pedagogic process alongside with realization of personality-oriented approach [10, 18]. Besides, analysis and systemizing of data of APE specialists permitted to point out the following approaches to formation of body vertical stability of children with poor hearing:

- Individual approach, according to which optimal physical load for a pupil shall be selected individually, depending on specific features of his (her) constitution and physical condition as well as considering children's protection functions [15];

- Integrative approach, according to which in the process of APE it is necessary to combine forms of educational-teaching, correcting-developing, therapeutic-preventive and health related training work [9];

- Differentiating approach, the sense of which implies registration of poor hearing degree, presence of accompanying diseases [7];

- Innovative approach, which imply application of up-to-date technical means for training motion actions of children with poor hearing [12].



Besides, in the base of the offered technology there are main postulates of theory and methodic of motion actions' formation with predicted result [5], and ideas and conceptual principles of advanced specialists in the field of theory and methodic of physical culture [9, 13, 15].

It should be noted that main conceptual principle of our research is the fact that poorly hearing junior pupils have low indicators of vertical body stability and improvement of process of vertical body stability's formation shall be built on the base of adequacy of means and methods to specific features of this category of children.

The created technology bases on a number of didactic principles, among which key place is taken by principle of correcting-developing orientation of pedagogic influence, that implies pointing of efforts not only at overcoming, smoothing, leveling of physical and psychic children's defects, but also at active development of their cognitive activity, mental processes, physical abilities and moral qualities [18].

Ione more important principle is principle of compensatory orientation of pedagogic influence, which means compensating of retarded, breached or lost functions at the cost of increased using of undamaged ones. In the course of realization of created technology, guiding by this principle, we strived for stimulation of compensatory processes in damaged organs and systems by activating protection functions, with the help of specially selected physical exercises, methods and methodic techniques [18].

Development of physical exercises' complexes for training of junior pupils' vertical stability was carried out considering age peculiarities, adequacy and optimal character of pedagogic influence and variability of pedagogic influences, in compliance with which we introduced in programs physical exercises and games of different orientations and coordination complexity, with application of different sport equipment and in different conditions of their fulfillment.

When developing the technology we considered that formation process of vertical stability of 7-10 years old boys with poor hearing will be effective, in our opinion, under the following conditions:

- Availability of theoretically grounded and experimentally tested APE technology, oriented on formation of the mentioned quality;

- Availability of means and methods, adequate to the set tasks;

- Presence of clear criteria for estimation of vertical stability;

- Readiness of physical education instructor for realization of the technology in academic process.

As a result of analyzing, studying, systemizing and generalization of scientific-methodic and special literature data, implementation and estimation of the technology were preceded by the following stages:

- Organizational, which included theoretical foundation of urgency of targeted measures on formation of children's with poor hearing vertical stability;

- Diagnostic, which stipulated studying of specificities of physical condition of children with poor hearing and registration of the studied indicators;

- Designing, which consisted of direct planning and development of technology on the base of advanced pedagogic experience and development of criteria for evaluation of its effectiveness;

- Operational, implying motivation-setting sub-stage, consisting of creation of favorable emotional background;

- Sub-stage of activity, in the base of which there is direct implementation of the technology in teaching educational process of junior pupils with hearing deprivation;

- Correcting, consisting of intermediate control of results of technology implementation and correction of physical education programs, if required;

- Resulting, stipulating estimation of technology's effectiveness in development of vertical stability of 7-10 years old children with poor hearing on the base of created criteria.

Now – content of the technology more specifically. Basing on the offered directions of technology implementation in APE process of $1-4^{th}$ forms pupils with hearing deprivation, we divided the content part of the technology into modules. Module 1, or theoretical module, elucidates specific features of vertical stability development of junior pupils with poor hearing as well as interconnection of balance function with coordination abilities. This module implies formation of hearing for committed dauglement of heavy vertical stability development diag of helpene rate.

children's motivation for committed development of body vertical stability through understanding of balance role in structure of pupil's physical condition as well as widening of theoretical base in the field of physical culture. — Module 2, consisting of complexes of exercises, oriented on formation of body vertical stability both in

time of classes and out of classes; besides formation of the mentioned ability, it facilitates strengthening of motivation by selecting of exercises and games, adequate to age off children and interesting for them.

Module 3. It stipulates monitoring of vertical body stability of 7-10 years old children with hearing problems and consists of special tests for operative and final control of the formed abilities.

With selecting of motion actions' training methods we paid attention to game and competition methods, as the most adequate for training of junior school age children. Alongside with the mentioned methods, owing to hearing analyzer's abnormalities of children of such nosology, we used demonstration method and considering the fact that instability of attention is a specific feature of children with poor hearing, we applied also method of divided exercise and method of preparing exercises.





Determination criteria for evaluation of the technology's effectiveness played important part in its development for formation of vertical stability of 7-10 years old children with poor hearing. For this purpose we generalized experience of our predecessors [17, 18] and chose that evaluation of technology shall be conducted both by subjective and objective criteria.

From our point of view technology fulfills its function only if a child manifests statistically better indicators of balance function, videlicet amplitude of oscillations of general body mass center (GMC) in main stand on immovable support with open eyes, amplitude of GVC oscillations in Romberg's test and time of keeping posture in Bondarevskiy'as test. Besides, we consider improvement of posture, physical condition, confident gait and accuracy of movements and gestures also to be criteria of effectiveness.

Conclusions:

Activity of scientific circles in searching of mechanisms of optimal influence on organisms of disabled children, in order to develop their motion and psycho-physiological qualities, stimulated specialists for creation and implementation of innovative programs on physical education.

At present importance of vertical stability formation of 1-4 forms pupils, as a mean of comprehensive development of a child with hearing problems is misunderstood.

In order to form vertical stability of junior pupils with poor hearing we developed and theoretically grounded technology, whose main directions are teaching of physical exercises, development of vertical stability of body, formation of stable motivation for fulfillment of complexes of exercises, selected for development of pupils balance, correction of posture and prevention from flat-footedness, education of attentiveness and commitment.

Content part of the technology is presented in the form of modules: theoretical, containing general concepts about bio-mechanics of orthograde posture, role of balance function in strengthening of compensatory abilities of sensor systems, interconnection of balance function and other motion qualities, complexes of exercises for development of balance function and tests for determination of formation level of body vertical stability.

The prospects of further researches imply implementation of the offered technology of stability function's development of junior pupils with hearing problems in APE process and estimate on of its effectiveness as per developed criteria.

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