

Proprietary educational technology for making physically challenged children literate within a paradigm competence approach

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Abstract. There is presented an educational technology for making children literate, based on a systematic and integrated approach to the process of child's literacy formation. The essence of the system approach is to create optimal conditions, involving all teaching staff from pre-school educational institutions and parents into the process of making children literate. An integrated approach consists in involving into work all systems of the child's body – visual, auditory, speech, motor, and emotional spheres. Originality of the technology consists in integration of the intellectual and cognitive activity component together with motor activity during performing various postures and gestures by the body, symbolizing letters of the alphabet, which allows to optimize the learning process as a whole, the development of speech, in particular, in parallel with the rehabilitation, improvement of the emotional state of a child, optimization of visual and auditory gnosis, posture, correction of attention deficit and hyperactivity disorder.

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Introduction

In light of the new Law "On Education in the Russian Federation" and modern tendencies of implementation of the competency approach in education there is carried out restructuration of the forms, methods, content and technologies of education for pupils of both preschool and school years, as this educational paradigm provides for the acquisition by children of such competences that would become the basis for the high-quality preparation of children to real life. Speaking about the current tendencies, we are referring to a number of projects and also already approved by the orders of MES RF federal state educational standards (FSESSs), programs, concepts, and in particular, the project "FSES for physically challenged students", prepared by a team of the Institute of Correctional Pedagogy of Russian Academy of Education [1].

Analysis of modern psycho-pedagogical technologies of teaching and health improvement of children has convinced us that the education of children and their health improvement flow usually separated from each other without touching one another, except for some aspects of hygiene education (occupancy of class, active breaks, meal, lighting, breaks for physical training, furniture, etc.) [2]. However, the current level of scientific and methodological advances in general and special education allows us to go on a unique and innovative way of learning, to search for integrative approaches in order to optimize correctional and educational process without reducing and increasing the quality of education [3].

Modern and effective approaches to literacy teaching as the foundation, the base of the formation of intelligence, cognitive activity of children, can have a decisive influence on the further education of a child.

Main part

The problem of making physically challenged children literate was studied by many researchers [4, 6-11 and many others]. It should be noted that literacy teaching for physiologically healthy children begins, as a rule, in the older group of kindergarten children with different types of pathologies, different depth and structure of the defect - in the preparatory group or in zero and first classes of special school.

A large scientific and methodological work on literacy teaching for physically challenged children was conducted by Voronkova V.V. (2006). As it is known, the initial mastering of reading, writing, numeracy skills requires a certain level of speech, cognitive and psychophysical developmental of physically challenged children in general. It should be noted that the process of literacy teaching is quite lengthy and time-consuming for such a child, it requires significant effort on his part.

Great importance is attached to the development of auditory attention, phonetic and phonemic perception, articulation, formulation of sounds, sound pronunciation, development of visual gnosis, graphomotor skills, fine motor skills, coordination of movements. For forming each of the above properties and qualities of a child, there have been developed appropriate means and methods, work

directions, stages based on the level of child's development [12].

According to Voronkova V.V., literacy teaching should be performed by a sound analytical-synthetic method and should be divided into pre-abcenary and abcenary periods. In pre-abcenary period (1-2 months) there is performed the student preparation for mastering the initial reading and writing skills, fostering interest in learning, identifying the individual characteristics of the child's development.

In abcenary period, children form letter-sound analysis and synthesis, serving as the basis for reading and writing mastering. At sound assimilation there is assumed its selection of speech utterances, clear pronunciation, distinction, differentiation [13].

At mastering of letters, the study begins with the perception of its overall shape, its elements, their location, comparison with other letters, and then the child should begin mastering the correlation of sound and letters. Then comes merging of sounds into simple syllables: au, ua, am, um, ma, etc. Meanwhile, Voronkova V.V. emphasizes the idea of importance to use different visual materials, various gaming technologies.

Authors of the "Russian language" program in the 0-IV classes of VIII type schools (Aksenova, A.K., S.V. Komarova and E.V. Yakubovskaya, 2007) note that in the pre-abcenary (propaedeutic) period students should familiarize themselves with block letters and start writing them. At the same time the order of the sounds, letters into syllables and words studying must be different than in regular school. It should be accessible to children with regard to their phonetic-phonemic perception, thinking and state of the articulatory apparatus. The authors emphasize that in the context of a special VIII type school, the main methods are the analytic-synthetic and syllabic ones. As a didactic visual material they recommend the use of a wall-type letterset, "letter town", syllable set, syllable tables, sets of colored strips for conditional graphical notation of sounds, letters, syllables, words and sentences.

Analyzing the process of literacy teaching in mass and special kindergartens and schools, we should state the standard training schemes. First of all, as a rule, children are in a static position, which carries a lot of negative points:

- overstraining of visual analyzer;
- congestive phenomena in a child's body;
- low level of emotional state;
- lack of exercise;
- deterioration of the motor areas;
- deterioration of posture.

These negative aspects should be supplemented by the attention deficit and

hyperactivity disorder (ADHD) in children of primary school age.

All the above factors lead to the impoverishment of the educational environment, excessive increase a child's body strain, which eventually leads to the development of various pathologies – blurred vision, scoliosis, malaise, deterioration of the child's body and, in particular, the so-called didactic- neurosis [14].

Based on the above mentioned information, we emphasize the **problem of the study**, which lies in the need to develop a comprehensive and innovative technology of literacy and numeracy teaching for preschool children with normal development as well as with disabilities in the psycho-physical development, with which you could create a comfortable learning environment, have a positive effect on psychomotor and emotional aspects of the child's development and, in particular, on his or her speech and cognitive activity.

We believe that the creation of an optimal intellectual, emotional and motor learning environment with the inclusion of means of large, shallow and fine motor used as images of letters and numbers, will be able to positively and simultaneously influence on the mental, speech, emotional, and motor spheres of a child, will prevent the ADHD syndrome, stagnation, inactivity, didactic- neurosis, which ultimately will help to optimize the quality of correctional and educational activities and quality of life in general. What is needed and is especially important to emphasize is that in the literacy and numeracy teaching of children it is important to build effective means and methods of speech disorders correction aimed at improving sound pronunciation, forming their vocabulary into general system of educating a child without hurting, but with improvement of his or her psychophysical state.

We believe that the solution of the problem of making physically challenged children literate should be performed with a reliance on the latest developments in the field of competence-based approach in education [15-24 and others].

In considering the problem of competence approach, Dewsbury K. (2003) believes that competence may be elementary, middle and high, and meanwhile cites the example of a 3-4-year-old child who can talk a lot and easily, and this is his still initial, but yet competence.

Further, we would also note the following. In the concept and project of the federal state educational standards for physically challenged students, its developers emphasize the need to form a vital competence and academic component within the training of physically challenged children.

One of the major social and personal competences of a child, in our opinion, is the intellectual-cognitive one, as the main basis for the development of personality, which should be understood as a wide range of the child's integrated skills, abilities and the outcome of his or her training activities in different socio-economic conditions. At the same time we present a previously developed by us universal model of cognitive and intellectual competence (Fig. 1), structured on the mega-, macro- and micro-components [19].

We present some fragments of our long-term researches on teaching children literacy in parallel with the formation of the above mentioned competence in preschool children with psychoverbal development disorder using a unique, educational technology we have developed, that allows achieving good results both in the training and rehabilitation of students.

Experiments were conducted on the basis of special (correctional) VIII type schools in the cities of Krasnoyarsk (schools number 5, 24), Tyumen (school number 2), regular school number 50 in Tyumen, kindergarten "Joy" in the city of Gubkinskogo and several other preschools institutions in Tyumen Region, Khanty-Mansi and Yamal-Nenets Autonomous Districts.

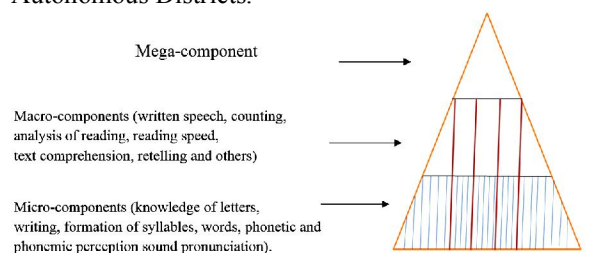


Fig. 1. The structure of intellectual-cognitive competence

We have developed a systematic approach to training and making children literate, the essence of which is as follows. There have been developed static bodily postures, symbolizing children's motioning each letter of the alphabet by various large gestures, having created, in essence, a kind of "bodily alphabet". For example, a child considers the letter "A" in the form of a stylized image superimposed on a schoolchild drawing, depicting the letter (legs standing apart, arms crossed on chest), next to the letter "M" (Fig. 2). Such static positions can be easily performed by a child. Further, given the fact that virtually all children with impaired mental and physical development have different speech disorders, we felt it was important, parallel with the performance of such static posture of the letter, to clearly pronounce the sound of this letter, aloud and repeatedly. It was assumed that memorizing will go

better, with higher quality, and with reliance on emotional and motor sphere of the child, his or her phonetic-phonemic perception.

This pedagogical training technology "bodily alphabet" can be represented as the following algorithm:

2. Students are taught by body movements "bodily ABC" in the form of postures-letters.

3. Having learned how to perform a series of movements in the form of static postures - letters (for example, A and M), they can perform these movements together, in the form of "writing" syllables AM, MA and immediately the word MAMA (Fig. 2), "written" by these letters.

4. Initially bodily movements while "writing" letters or syllables are performed slow, then a little faster, repeating it once, twice, three times or more.

5. Further, there is added pronunciation of syllables or words with different accents, with eyes open, closed, etc. Then, as a result of such action there is a whole series of different movements and essentially motor skills that can be performed on different classes or at homework.

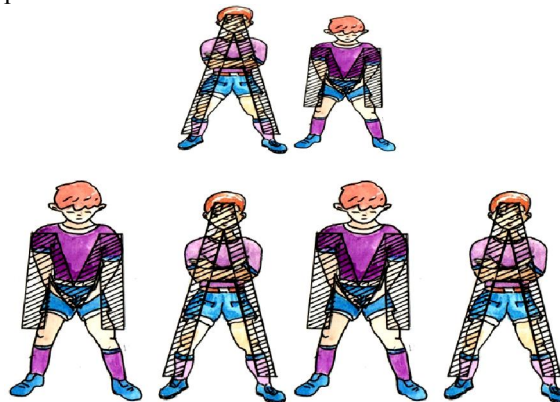


Fig. 2. Fragments of "bodily alphabet"

Movements of such type are performed both individually and frontally: at class during the reading lessons, physical education classes, speech therapy sessions, in the morning hygienic gymnastics, physical training breaks and when doing the homework, by all means followed by a carefully pronunciation of the corresponding sound and always – in different intonations. In preschool establishments they are also performed at the educating classes in groups, with a speech therapist, music director and other professionals.

Performing this kind of exercises in the mainstream of making preschool children literate, made it possible to solve a number of problems. For example, tasks such as children's health improvement, correction of motor disorders, ADHD correction.

It becomes clear that this implementation of the various movements contributes to the manifestation of health improvement effects, as individual postures – letters are turned into confluent dynamic movements, bearing some physical load and can be performed at a different pace and rhythm. Loads, exercises can be dosed by volume, intensity, diversify them, including the work of the various groups of muscles, respiratory and cardio – vascular system.

Performing exercise of such kind is definitely aimed at improving and emotional condition of the child, because it is not sitting at a boring execution of a job in the classroom or at home, and is in motion, in action. In addition, the pronunciation of sounds, syllables, words with different shades of intonation, has a positive impact on the formation of phonetic and phonemic perception, vocabulary, and physiological functions of the child's body, speech enhancement. During such integrated classes, the students master the alphabet and literacy faster and better, improves the quality of assignments.

In the process of making children literate, we have assumed that preschool children with mild disorders, primary school pupils in special schools will quickly master the elements of ratification by relying on visual-shaped kind of thinking, which involves, first of all, the implementation of the principle of clarity in the form of the use of various visual materials. On the other hand, as it is known, there is nothing more natural for a child than movements and motor activity. Combining these two essential culture-activities together, we were able to achieve significantly better results than with standard training schemes.

It was expected that the outcomes of such a complex work with the students during the process of their mastering "close ABC" can be an improved quality of mastering the alphabet, compiling syllables, will be achieved optimal literacy, and eventually will be developed modern educational technology of teaching children literacy, as a result of which there will be performed creation of optimal favorable learning environment and improvement of the child's quality of life as a whole.

Developed by us pedagogical technology of preparing children to master literacy and literacy teaching contributed to their health recovery, improvement of their emotional state, sound pronunciation, speech, which generally promoted the formation of an active intellectual and cognitive competence of preschool children with developmental disorders. Caregivers in groups taught children to read in their classrooms, speech therapists, physical education instructors, music directors taught them in their own classes. Further, in the learning process,

children were proposed to perform drawings on paper, blackboard, drawing of horizontal, vertical, diagonal lines, depicting of small fences, rounded lines, ovals, and other semi oval simplest figures. Meanwhile, an important factor was the emotive content of classes, which was provided by movements, music, chants. We believe that the inclusion of various reference signals, different psychophysiological mechanisms, vigorous activity of the child's intellectual, emotional, motor areas can successfully generate a lot of conditioned reflexes and fix them quickly enough.

Also, these same exercises – different movements in a variety of letters, syllables, and words were repeated by children at home. The result was a very powerful multidirectional intensity, but absolutely without any whatsoever emotional overload. Children from experimental groups have successfully mastered gestures in the form of postures-letters, "wrote" with their help syllables and words, spoke with slogans. It is important to note that training a particular letter or syllable was performed in uniform terms, in the same days. All caregivers, speech therapists, teachers, parents worked with children in parallel, completing quests. Management of such coordinated work was carried out by the scientific leader and members of a psychological-medical-pedagogical concilium in kindergartens and schools.

Conclusions

Based on the above mentioned developments, we are convinced that a physically challenged child can successfully generate significant social and personal competencies, primarily an intellectual and cognitive one.

In the implementation of the developed by us educational technology, we managed to create a comfortable environment for teaching children literacy, and solving the following problems:

- reduce eyestrain;
- increase the amount of motor activity;
- reduce congestion in the child's body;
- contribute to the elimination of the "physical inactivity" syndrome;
- improve the condition of the motional sphere in general (large, small, fine motor types - precision, coordination of movements);
- improve the emotional state: reduce the phenomenon of anxiety, aggression, and resentment, improve mutual understanding, etc.
- correct motor and posture disorders;
- correct the ADHD phenomena.

Summing it up, I would like to emphasize the idea of connection and integration in our study of the intellectual and motor components during the process of making children literate.

At the same time it is important that this educational technology requires almost no investments in contrast to other technologies (use of visual simulators, environmental primers, special student desks with elevation change lid desks, etc.), currently in use, so it may be successfully used by a kindergarten teacher, elementary school teacher, a speech therapist, and other teachers, as well as the child's parents.

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