

## Conference Paper

# Personally Differentiated Approach in Dysgraphia Correction of Primary School Children With General Speech Underdevelopment

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## Abstract

In the works of famous authors, we can find well-presented mechanisms of writing and the structure of work to eliminate deviances of reading and writing, related to the deficiency of certain operations of writing, or a deviance of the speech system functioning. According to the conception of A. R. Luria about the psychophysiological mechanisms of writing, the authors revealed the linguistic and optical spatial deviances in the structure of dysgraphia, lexical and grammatical, phonetic-phonemic disorders, skills-formation disorder of linguistic analysis and synthesis; they presented the areas and techniques of preventive and corrective work. The question of children's condition with writing disorder of psychological level of its organization is not fully studied. The corrective work presented in the article is directed to the elimination of deviances in oral and written speech and aimed at the formation of interhemispheric interaction. The profile of functional asymmetry of hemispheres and the type of leading modality in children were taken into account. Methods of neurolinguistics programming in the correctional process were used as means of psychological correction, harmonization of personality, developing attention, memory, thinking and speech, increasing practical literacy in children.

**Keywords:** writing process correction, neurolinguistics programming, neuropsychological approach, written speech motivation, sensory perception, regulation, self-control

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## 1. Introduction

An important aspect in modern logopedics is the development of new methods and logopedic technologies for the dysgraphia prevention and correction. The specificity of speech therapy involves the various effects on the child's personality. It is difficult

to name such types of work on the children's speech and non-speech functions development, which are not used in the process of the logopedic correction. The research showed a close relationship between the difficulties of writing formation and disorder of primary school children with the speech underdevelopment and incompleteness of mental processes non-verbal forms, such as visual-spatial understanding, auditory and optic motor coordination, gross motor function, fine motor skills. The diagnostic examination of children with the general speech underdevelopment showed that the emotional-volitional sphere which is the part of the writing psychological organization, namely motivation, programming and control in the writing process and also the emotional stability are on the low and middle levels.

The aim of this work is to present the innovative methods directed to the development of personally – oriented peculiarities of children with the general speech underdevelopment for the writing disorder correction.

R.E. Levina, A.V. Mironova, N.A. Nikashina, T.B. Filicheva, R.I. Lalaeva, G.V. Chirkina, L.G. Paramanova, A.N. Kornev, I.N. Sadovnikova, L.N. Efimenkova and other specialists made a great contribution to studying of the writing speech and correction work problems.

In recent years M.N. Rusetskaya, O.B. Inshakova, E.A. Loginova, I.V. Prischepova, O.I. Azova and others study the problems in this sphere. Along with the speech mechanisms many cognitive functions participating in the writing process turn to be actual. (A.R. Luria, T.V. Akhutina, Zh.M. Glozman, A.V. Semenovich, T.A. Fotekova, L.S. Tsvetkova, A.A. Korneev, A.N. Kornev and others.)

The diagnostic examination of children with the general speech underdevelopment was directed to their personal peculiarities which reflect in their learning activity and writing. The experimental group consisted of 50 children with the general speech underdevelopment of 2-4 form, and 15 children with normal speech development were in the comparative group. 30 8–11-year-old children of the experimental group studied on the base of the Moscow scientific and research center named after A.R. Luria and were taken the correction work of our specialists. The rest 20 children were out of the correction work and consisted the control group.

1. Hyperactive children in actions, speech and having the personal peculiarities;
2. Children with low vision;
3. Children with auditory and verbal problems;
4. Children with the problems of kinetic and kinesthetic systems.

The result of the comparative diagnostic examination of the experimental children group and children with the norm of speech showed the following personal peculiarities. Hyperactive children with the general speech underdevelopment have cognitive disorder which is connected with the disorder of auditory and visual perception, with difficulties to form the notions, infantilism, non-specific thinking, which the constant impulses have an influence on. The speech immaturity, poor vocabulary, agrammatisms, slow or fast speech tempo, and problems of social character also take place here. Children cannot concentrate on the studying process because of the various external impacts. They often pay the attention to unimportant things and cannot get rid of it. The child is constantly moving, he cannot seat. The formation of emotional and social maturity is impaired by reduced working capacity. They are not able to work systematically for a long time. These children are characterized by the common lability, changing mood in short periods of time, low emotional stability, absent of control over their own actions. They have problems with School adjustment and demands to studying process and particularly to writing, but all these processes manifest in varying degree. 5 children have severe hyperactivity. Boys with dysgraphia are more independent, slight their duties, irresponsible. As for the girls they are more obedient. It is found out that pupils with dysgraphia have lower generalization function, analytico-synthetical activity on the verbal and non-verbal level. On the verbal level it is manifested in difficulties of finding the common features between notions. On the non-verbal level it is weak visual-spacial relation. The majority of pupils with writing disorder have specific personal peculiarities reflecting in immaturity of behavioral self-control, desire to insist on, disobedience, inadequate self-esteem. The children with the visual impairment have lower level of non-verbal mental power and visual-motor coordination. The features of phlegmatic temperament prevail in their behavior, working stress and pursuance of achievements are reduced. With prevalence of abnormalities connected to the problems of kinetic and kinesthetic systems, graphic skill presents complex speech-hand-movement action, from the one hand it is verbal (intellectual), and from the other hand-motional, that is the testimony to the fact that ignoring of this skill development may adversely impact not only on the writing process, but on a person in general. Muscle tonus troubles, its instability, finger praxis deficiency lead to the fast tiredness of finger and wrist muscles, cause the inaccuracy of movements, lack of fluidity and coordination of actions and as a result the refusal to do written tasks, manifesting in abnormal behavioral reactions. Dysgraphia connected to the audial problems shows the reduction of the child's self-esteem.

## 2. Correctional Work Was Subdivided into Three Main Periods

TABLE 1

1 Preparing period	2 Training period	3 Fixing period
<p>Tasks:</p> <ul style="list-style-type: none"> <li>- To establish friendly relations with a child;</li> <li>- To create favorable emotional atmosphere;</li> <li>- To form motivation to studying, particularly to writing; to form universal learning skills;</li> <li>- Interaction with parents, consulting and prophylactic work;</li> <li>- Development of the initial mechanisms of writing: psychophysiological, psycholinguistic and psychological;</li> <li>- To 'fill the gaps' in the development of the audial side of speech (phonemic perception and understanding, correction of the sound speech defects, formation of such skills as analyses and synthesis of the sound and syllable word and sentence composition, fixation of letter-sound links);</li> <li>- To 'fill the gaps' in lexis and grammar;</li> <li>- Coherent speech development.</li> </ul>	<p>Tasks:</p> <ul style="list-style-type: none"> <li>- Continuation of favorable emotional atmosphere;</li> <li>- To maintain motivation to the written speech and to the process of studying as a whole;</li> <li>- Perfection of morphological and syntactical generalizing (morphological analyses of the word composition; further vocabulary enrichment by collecting of new words and perfection of word building; the meaning specification of used syntactic constructions;</li> <li>- Perfection of grammatical formalization of coherent speech by using collocations, links of words in the sentence, models of different syntactic constructions.</li> </ul>	<p>Tasks:</p> <ul style="list-style-type: none"> <li>- Motivation stimulation;</li> <li>- The formation of written speech as a form of communication (translation as a common way to strengthen the Association of the word and the object; 'question - text - the life out of the text' as the original attitude of the author and the reader of the conceptual text; the attitude of the author and the reader of the text as a form of educational cooperation.</li> </ul>

The structure of each lesson was not strictly regulated, as different versions of the structure and content depend on the features that we have found out in EG children. The main components of the lesson structure:

1. Motivation (optimization of activity is solved by the formation of children's positive motivation to master writing and through speech regulation, which contributes to the awareness of the activities).
2. Traditional area of logopedics is to correct the speech deviance of schoolchildren with the general speech underdevelopment - to eliminate the disadvantages of oral speech (improving of phonemic awareness, sound correction, increasing the vocabulary, and improving the grammatical formulation of the speech, coherent speech and verbal and cogitative activity).
3. Correction of personal peculiarities. Work on all HMF.

Traditional areas of the correctional logopedic impact are well known and presented in numerous publications (R.E. Levina, 1961; L.F. Spirova, 1965; R.I. Lalaeva, L.V. Venedictova, 1997; I.N. Sadovnikova, 1995; L.N. Efimenkova, 1991; A.V. Yastrebova, 1999 and others). That is why we choose that areas of correctional work on the elimination of the writing process disorder of the children with general speech underdevelopment which are not enough taken into consideration by the specialists as the substantive directions.

### 3. Motivation Formation

One of the most difficult tasks of this direction is to help the children with general speech underdevelopment to formulate a motive to participate in the correctional work and precisely in the process of writing. According to Leontyev's conception that the conditionality of the activity type changes in the process of this activity, and it is necessary to pay all the attention on the maintenance of such stimulus, as an interest to a new situation, variety in usual studying day, an opportunity to perform the task successfully with the help of neurolinguistics impact, that usually fails in the classroom, to communicate with welcoming adult. Then, on the essential stage of correction the motivation question takes an important place during all the correction process. Our aim is to achieve such a moment when fruitful results of the lessons give a child understanding of necessity to perform the task good for all the time and to turn it into the internal need. Leading aspects in activity of primary school children are game motive and interest. Gaming technologies which were developed in the scientific research center of children neuropsychology named after A.R. Luria, allow to practice difficult grammar rules, contribute to the intellectual emotions impulse: surprise, novelty, doubt, achievement, A.E. Soboleva, 2014 and others. During the lesson a child passes through all the stages of game development, arbitrariness is produced, speech, imagination, spatial and temporal representation, fine motor skills, attention, memory, logical thinking and all the psychic functions necessary for learning of writing develop. For example the following exercises:

Exercise 'What's the emotion'. It is the method of art therapy. It allows to determine the emotional state using photos, images, icons from the one hand and from the other one to find synonyms to each word: happy, sad, angry, scared, astonished; other words similar in meaning may be used instead of given words.

Exercise «Pure speech! Say as him» is directed to the reinforcement of intonational speech aspects, the rhythm of speech, the perception of speech expression, the ability

to use logarithmic techniques. To speak with voices of fairy-tale characters, to guess who it is and write these words.

To develop in children the positive attitude to writing. Using of expanded commenting on the initial stages of neurolinguistics work is necessary for the following reasons: (a) word articulation is a condition for understanding of its sound structure and the way of its arrangement; (b) speech kinesthetics along with writing develops motorial coordination and kinetic and kinesthetic sense at the letter writing process; (c) the slow rate of writing and pauses between words facilitate the process of passing from one word to another and contribute toward the awareness and the sentence structural arrangement.

The child brings to the class his favorite toys-cars, robots, transformers, machines. The teacher together with the child comes up with their names and write them down. We create short stories – the child chooses a favorite sentence and writes it down.

«My purchase.» The child is going to the store and makes the list of purchase-toys, writing with gel pens of different colors.

Exercise 'Pouch'. to put 8–10 different small things into any beautiful pouch to have the items differed in shape, size and texture, but the part should have similar characteristics. To touch the items and guess what it is, change them often.

Exercise 'Hour of silence'. To agree with the child in any hour of the day not to speak, and communicate only in writing. Write with beautiful gel pens.

Exercise 'ABC' the Child is offered to choose any letter of the alphabet. 'Take the dictionary and write out 10 words that start with that letter, but words you've never heard before'.

Exercise 'What I hear' Picture of the world... in the language there are hundreds of words that do not mean anything but sound. Drip-drop, bang!. Think up or remember words-sounds, which can describe such situations, for example:

Motorcycle rides –

A cat lapping milk –

Meatballs are frying –

An acorn fell down in a puddle –

Now read expressively only words-sounds. This is The picture of the world...

Exercise 'Awaken imagination, let go of feelings' Answer 8 questions in as much detail as possible. Do not think about spelling and beautiful handwriting, everything you write will be correct. If you are not enough provided with place for the answer, write wherever you want.

- A. What will grow if you plant your heart?
- B. If you stand on your hands, where are you going?
- C. what will you see if you look in the hole of the macaroni?
- D. what are the names of your toes on the right leg? No names? So name them!
- E. What will you find at the bottom?
- F. Where will you fly, if your hands will turn into wings?
- G. Whose desire can you fulfill, even if you're not a wizard?

Exercise 'Welcome'. A lesson in dyads develops interaction and communication skills. Children in the beginning of the lesson are invited one by one to give a word to each other and to try to associate this word with the personality of the other. For example, the word rain. You may clap your hands beautifully like rain! Write down these words wherever you want.

### 3.1. We use neuro-linguistic programming (NLP) techniques

It is important to know whether the child has any positive expectations from the classes, the purpose of his participation in the classes. If no, or child is not able to formulate them he needs help. Well-formulated, as passed through different ways of perception (vision, hearing, sensations), the goal will contribute to improvement of the lessons effectiveness. M. A. Pavlova (2002) recommends to use several exercises.

The Categories of sensory experience: see, hear, feel (by M. A. Pavlova, E. A. Loginova). We use the elements of neuro-linguistic programming with our modifications. Determination of the desired state. When a positive emotional contact is established and the adult has already 'spoken' about the options for the purposes of speech therapy sessions, the child is asked: 'What do you want to achieve at the lessons?' An answer that may be obtained (or reformulated by a teacher) should not include a NON-particle. The goal should be stated in a positive way. 'How much does it depend on you?' Then it is recommended to determine a metacele: 'If you do it what it will give to you?' The answer to this question, according to NLP, is a move up at the logical level. 'Well, if you've already learned how to write, what will it give to you?' - 'Well, I get good marks, I'm praised.' 'Well, but if you get good marks and you are praised what it will give you?' - 'I will feel confident and calm.' - 'So if I understand you correctly, you want to feel confident and calm. And for this you want to learn how to write correctly?' You can go up to a higher logical level, asking this question again,

if necessary. Thus, motivation for learning becomes deeper and more aware for the child.

Learn to see inner images and memorize them. The child is invited to imagine the situation ('draw a picture'), in which he feels the pleasure of being praised for a well-written postcard. He is asked to 'examine' the expression of his and other persons, to 'hear' grateful or laudable voices, to feel what he feels. We ask the child to describe the 'picture', to feel this state of joy and try to remember it.

### **3.2. Exercises for the development of memory, attention, cause-and-effect relationships, sensory sphere and self-regulation**

«Shop.» The child is asked to remember the items that are necessary to buy. Start with a few items, gradually increasing their number to 5-7. In this game, it is useful to change the roles: both adult and child, child-child, who first listens to the order of the buyer, and then goes to pick up the goods. Shops can be different. The game can be modified. The Child comes to the shop and describes a subject which wants to buy naming adjectives. The game develops the imaginative perception of left-hemispheric persons.

'Couple of words'. The child is invited to remember a few words, presenting each of them in pairs with another word. For example, pairs are called 'cat – milk', 'boy – car', 'table – cake'. You need to remember the second words from each pair and write them down. Then the first word of the pair is called, and the child must remember and name the second one. The task gradually becomes more complicated, the number of pairs of words is increasing and the child starts picking up a pair of words with long-term semantic links.

'Restore the missing word.' The child is read 5-7 words that are not related to each other in meaning: cow, table, wall, letter, flower, bag, head and printed words are presented, then the series is read again with the passage of one of the words. The child must name the missing word. Task: when re-reading you can replace one word with another (from one thematic group: cow – calf; close sounding: table – cable), and the child must find the mistake and write the word.

'Remember necessary words' The child looks at the picture! The child is offered to memorize from suggested phrases (short stories) and then call only those words, which denote: weather, transport, plants, etc. At first, he can show with the hand all known words in the story, gradually get away from it, only writing them.



«Pictogram.» The child reads the text to remember, then he should represent somehow each semantic fragment (sketching the images). Then the child is asked to reproduce the story according to his sketches. To modify depending on the modal perception of the child.

«Flashback» The first variant. The child is asked to remember a room of his house: what is the color of the floor? What is the coverlet on the bed? The wall? Recall other things, people or events, which he saw and write them down. The second variant. One child in the room goes forward. The rest are invited to look at him for 3–5 minutes. Then the child leaves the room, and the rest of the children describe in detail how he is dressed and write it.

«Feel.» Children are asked to pay attention to the colors, sounds, images, smells around them, to feel the touch (you can switch on the music – the sounds of nature). One to two minutes in silence and then they are asked what they have felt or noticed. Children write down important for them five words.

‘Visual representations’. Children are asked to imagine any geometrical figure: a circle, a triangle, a square or any subject. Then they are asked to ‘paint’ the figure in some color, then change a tone to a lighter or darker; imagine how the figure gets more ‘warm’ or ‘cold’ color shade. To write a sentence about this subject. Then they are invited to imagine two figures at once: two triangles or a triangle and a circle; paint it in the mind, decorate and tell what has done.

‘Tactile and kinesthetic representations’. At first children touch the object, and then imagine their feeling of touching wood, wool, velvet, hair, etc. they are invited to touch the tree bark, nettles in the mind; new-fallen snow, different flowers, their petals, stem, leaves, sand, water, mountain stream water, sea, feather, hedgehog, dog. Then it is offered to try to tell about the feelings.

‘Auditory representations’. The child is offered to imagine the voices of people he knows; to imagine how they pronounce something questioningly, surprised, angry, happy, confused. Then he is asked to submit various household noises, traffic noise; the creaking of the floorboards in the wooden house, creaking doors, the Windows, the rustle of the curtains; the sound of rain, thunderstorms, rolling waves on the shore; the sound of bells and bell ringing; the sounds of various musical instruments. And then try to demonstrate auditory feelings with voice.

Formation of self-control when writing. One of the important directions in the work on optimization of children’s writing as a type of activity is the formation of self-control skills in the writing process and after its completion. It is self-control that is closely related to the awareness of the activities carried out, the assessment of their quality

and results. A distinctive feature of children with low self-control is lack of voluntary attention. The hypothesis of P. Y. Galperin found the confirmation in the works of S. L. Kobylnitskaya (1974) and other researchers about the gradual formation of mental actions. S. L. Kobylnitskaya developed a rule for the pupil's record checking: mark the order of checking: first check the meaning, then writing.

1. Read the sentence out loud.
2. Do the words fit together?
3. Are there any pass words?
4. Read the words aloud and mark each syllable with a line.
5. Do the letters match the word?
6. Are there any crossing letters?

Exercise 'Letter in old Russian' the teacher reads a small text, and the child writes it first only in consonants. Then it is offered to write that text in vowels only. The conclusion what is easier to read. The mechanism of switching and control, the sound image of the word is practiced.

### 3.3. Improvement and automation of graphomotor skill

Sensorimotor level is basal for the further development of higher mental functions, and at the beginning of the corrective work it is logical to give preference to motor methods, not only creating some potential for future work, but also activating the interaction between different levels and aspects of mental activity. The left hemisphere is responsible for the logic of the memorable, the right-for the rhythm and images. Thus, the whole brain is involved in the process, which significantly increases the productivity of work and reduces the time required to learn the correct spelling of the letter.

'Tell by movements' the Teacher reads the tongue twister, and the child depicts all the words with actions, then the child speaks, and the teacher shows. The winner is the one who depict the words more precisely and write the tongue twister.

'Funny copy-books' (according to E. N. Yemelyanova).

'Laces, su-Jok, lumps, knots'.

Development of hemispheric interaction. In verbal and cogitative activity each hemisphere forms its own principles of the speech organization. The right hemisphere forms

the integrity of semantic content, provides imaginative thinking, creates associations on the basis of visual and sensual ideas about the subject. The left hemisphere provides logical thinking, grammatical expression and characterization of the object properties.

Exercise 'March' provides the development of hemispheric interaction, sense of rhythm, sound image of words and self-control. The child marches, each step changes the position of the palms (outstretched hands) and utters a sequence of sounds in words.

'Cross-steps'. It is aimed at the development of inter-hemispheric interactions, coordination of movements and sense of rhythm.

1 level the Child walks, moving hands so that the palm of the right hand touches the left knee and Vice versa. Combine it with movement, give away quatrains

2 the level of the Elbow of the right hand with the walk touches the left knee and Vice versa. Combining speech with movement, we call parts of speech, words on a given sound, etc.

«Buratino.» Development of hemispheric interaction, control function. A child Bouncing at the same time by moving the hands and feet, dividing words into syllables.

Level 1. Hands and feet – apart – hands and feet together.

Level 2. Feet double screen, double screen hand. Feet crest hands apart, and Vice versa.

'Balancing Board'. Promotes the development of inter-hemispheric interaction, movement coordination and self-control.

By tapping the ball, then the left, then the right hand, the child pronounces the poem, vocabulary words, calling only vowel sounds or consonant sounds, selects the words of different parts of speech.

'Proshai the word' Child takes a card, reads the word, including any rule, repeats the spelling of the word steps, moving forward, naming vowels, back – consonants.

These and similar exercises have been used in our experimental training and have shown their effectiveness. In order to enter into full communion with someone and to be understood, you must speak in an accessible language, to use friendly expressions, and codes, in other words, to use leading opponent of modalities (in NLP preferred representational system). The leading representative system of the person (child) in NLP is determined, focusing on the so-called access keys, or external indicators of internal States. NLP has a large number of models of human change, optimization of its state in the direction of success in actual activity, in the personal sphere. The most famous versions of the modern foreign experience of NLP application in training are

presented in M. grinder's books 'school conveyor Correction' and L. Lloyd 'NLP and accelerated learning' (2000). The peculiarity of Linda Lloyd's approach to learning is that her recommendations are aimed at the harmonious development of all perception systems in children and, ultimately, solve the problem of forming a personality that is optimistic and fully perceiving the world and confident in success.

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