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**ORGANIZATION OF LOGOPEDIC WORK AIMED AT OVERCOMING
SYSTEMIC SPEECH UNDERDEVELOPMENT TAKING
INTO ACCOUNT INDIVIDUAL TYPOLOGICAL PECULIARITIES
OF PRESCHOOL CHILDREN WITH FUNCTIONAL VISUAL DISORDERS**

Abstract. The urgency of the given research is brought about by the change of educational paradigms in the system of general and special education and the need to look for the ways of providing high quality learner-centered education and upbringing of children with disabilities, including children with visual impairments.

The article clarifies the content of the notion "systemic speech underdevelopment in children with functional visual disorders" and broadens the interpretation of the mechanisms of speech impairments in the children of the given category. It is important for logopedic work to take into consideration the fact that speech pathology in children with visual disorders is aggravated by the emotional sphere underdevelopment. The combination of speech underdevelopment and that of the processes of perception, comprehension and use of non-verbal means of communication creates the complex specific structure of defect and hampers preparation of the children of the given category for school.

The article presents the results of experimental study of formation of motor skills, oral speech and emotional sphere in preschool children with systemic speech underdevelopment and functional visual disorders (strabismus and amblyopia).

Based on the results of the summative experiment, we singled out two groups of those tested needing differentiated rehabilitation. We also discovered the individual and typical peculiarities of the groups of preschool children with mild speech underdevelopment and systemic speech underdevelopment.

The article describes the main ways of organization and realization of logopedic work aimed at overcoming speech underdevelopment taking into account the revealed individual and typological peculiarities.

The undertaken research may be of interest to the pedagogues of the system of special education.

Keywords: preschool children; children with visual disorders; children with speech disorders; functional visual disorders; oral speech; emotional sphere; systemic speech underdevelopment; individual typological peculiarities; logopedic work; preschool tiflopedagogy; preschool logopedics.

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Current research shows that with visual impairments affects all speech underdevelopment in children components of the human speech sys-

tem (L. S. Volkova [3], M. I. Zemtsova [9], A. G. Litvak [15], T. P. Sviridyuk [22], L. I. Solntseva [23], V. A. Feoktistova [25], I. P. Chigrinova [26], etc.). Speech impairment leads to fragmentary, incomplete perception of the objective world and thus hinders the formation of object images (L. A. Venger [2], A. N. Leont'ev [14]) which constitute the imagery foundation of the word necessary for object nomination and for the process of speech comprehension in general (L. S. Vygotskiy [4], A. R. Luriya [17], S. L. Rubinshteyn [21], etc.). In the course of its development, speech rearranges the system of object images: there begins verbalization of sensual experience, develops categorization and appears generalization of verbal meanings. The verbal-semantic aspect in children with visual disorders is impaired, which is manifested in "formalism", i.e. accumulation of a considerable amount of words disconnected with concrete meanings (L. S. Volkova [3], V. S. Izotova [10], M. I. Zemtsova [9], T. P. Sviridyuk [22], L. I. Solntseva [23], etc.). And both speech formalism and verbalism are complex phenomena closely connected with the cognitive, personal and emotional spheres of the child (M. I. Zemtsova [9]).

Limited vocabulary, space awareness defects, and poor speech memory in children with visual impairments bring about underdevelop-

ment of grammatical skills of word-form derivation and problems in constructing coherent utterances (O. V. Doroshenko [7], E. A. Lapp [13], L. N. Likhodedova [16], S. A. Pokutneva [19]).

Specificity of speech development of children with visual impairments is also manifested in inadequate understanding and use of paralinguistic means of communication because visual impairment limits the perception opportunities of mimic and pantomimic postures, hampers imitation of actions and expressive means of the people with typical eyesight (G. V. Grigor'eva [5], V. Z. Deniskina [6], E. A. Lapp [13], etc.). As a result of fuzzy perception of the face expression of the interlocutor, children with visual impairments cannot evaluate their emotional state and attitude to themselves (G. V. Nikulina [18], E. A. Lapp [13], etc.). It is difficult for them to understand what is being said to them, as emotional and content text background is expressed with the help of paralinguistic means. The given category of children experience problems with acquisition of figurative expressions and emotive vocabulary (S. A. Zakharova [8], I. Yu. Kondratenko [12]). Poor formation of the emotional sphere in children with visual impairments aggravates speech underdevelopment. The mechanism of emergence of systemic speech underdevelopment (SSU) is shown in Fig. 1.

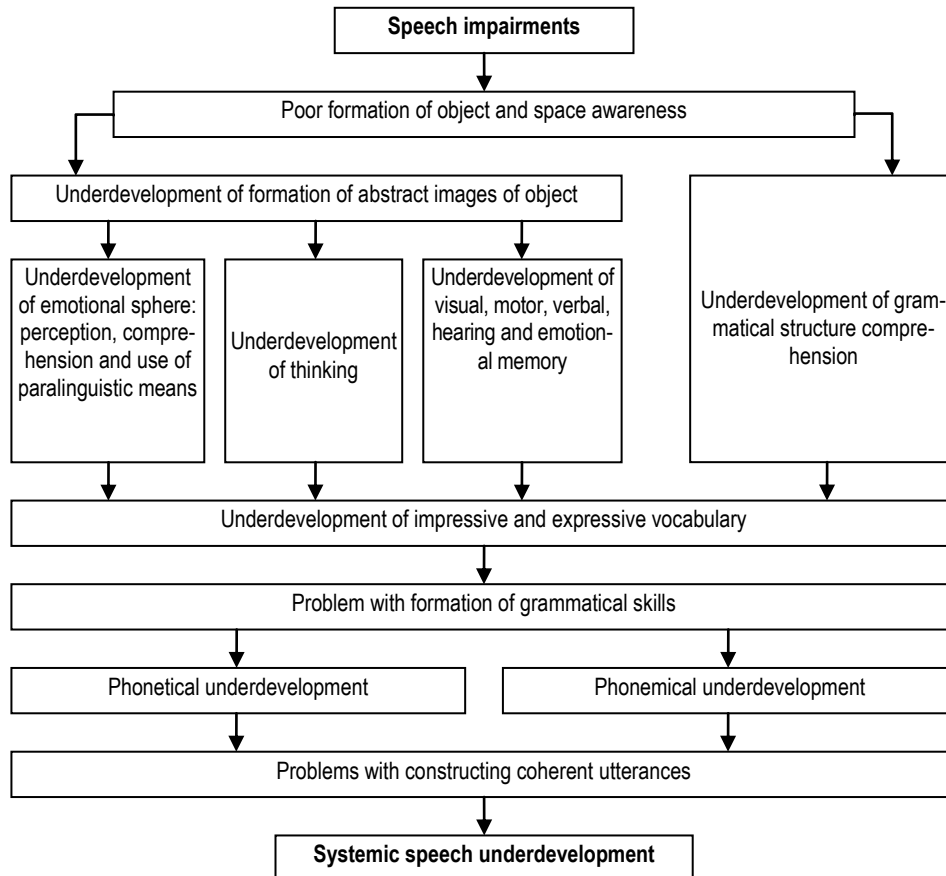


Figure 1. Mechanism of emergence of systemic speech underdevelopment in children with functional visual impairments

We carried out a summative experiment on the basis of Ekaterinburg kindergarten of a compensatory type for children with visual impairments # 569 aimed at revealing the level of formation of oral speech and emotional spheres (motor and oral speech skills necessary for the formation of mimic and pantomimic pictures; random formation of mimic and pantomimic postures; perception and comprehension of emotions in graphical pictures and plot-driven pictures; understanding emotional content of

works of literature and paintings; and the study of emotional memory) in preschool children aged 6-6.5.

The traditional methods of logopedic observation modified in accordance with the recommendations formulated by Z. A. Repina, L. F. Spirova, N. M. Trubnikova, G. V. Chirkina were used. The methods and techniques of investigation of the emotional sphere of preschoolers were borrowed from the works of S. D. Zabravnaya, V. M. Minaeva, R. S. Nemo, G. A. Uruntaeva, L. S. Tsvetko-

va and other authors; they were adapted with reference to the aims of research and the contingent of the children under observation and described in detail in the Guidelines [11].

Taking into account the levels of formation of oral speech and emotional sphere, we singled out two groups of those tested with a need of a differential approach to organization of rehabilitation work, and determined the individual-typological peculiarities of the preschool children of these groups.

Group 1 included preschool children with mild systemic speech underdevelopment (MSSU) and with a medium level of formation of the emotional sphere.

We did not register any problems of comprehension of the nominative vocabulary in the children of group 1 because the abstract images about objects were clear and complete due to the adequate level of formation of the object gnosis. Underdevelopment of formation of impressive vocabulary in preschool children of the given category was manifested by difficulties in understanding adverbs and prepositions of space, constructions with inverted word order, and adjectives denoting color and geometrical shapes of objects. They demonstrated a certain limitation of the active vocabulary which resulted in problems with word actualization, word formation difficulties and mistakes in choosing synonyms and antonyms. Underdevelopment of grammatical skills revealed itself in incorrect usage of semi-productive and non-productive word forms and in mistakes in the usage of compound prepositions. Un-

derdevelopment of coherent speech was connected with poor development of grammatical skills, inability to extend the sentence and poor morphological awareness. That is why the children's stories were short, consisted of several simple sentences without connecting links between them and contained government mistakes. As a result of visual perception disorders and problems with actualization of adjectives, it was especially difficult for the preschool children of this group to make up a story describing an object.

Underdevelopment of speech sound production in preschool children of this group manifested itself in monomorphemic and anthropophonic defects of the sibilants and sonorant sounds and uncompleted automation of pronunciation of the sounds corrected during logopedic assistance. Difficulties of speech sound comprehension revealed themselves in mistakes while identifying mispronounced phonemes and underdevelopment of methods of complex analysis and synthesis: preschool children could not always determine the sequence and number of sounds in a word.

Children with MSSU showed underdevelopment of the general motor and mimic skills necessary for the mimic, pantomimic and verbal expression of various emotions. Face hyponymy and disorders in the peripheral speech apparatus tone led to voice impairments which resulted in dysphonia, inability to change the pitch and force of pronunciation, which made the children's speech monotonous. Limited volume and quality of movement of facial muscles and

difficulties of visual perception of emotional responses of the surrounding people affected the children's abilities to form mimic pictures of basic emotions: we observed their scarcity and inexpressiveness. Still, the demonstrated emotions were recognizable; and the most difficult ones to express were sorrow, fear, surprise and anger. In a certain proportion of children (32.6%), surgeons diagnosed posture disorders which affected gait and gestures. Disorders of static movement coordination and motor memory hampered the opportunities of formation of pantomimic pictures; the tasks on expression of sorrow, surprise, anger and fear were the most difficult for the children. In most cases, the pantomimic pictures were like each other; very often the children used only mimic means to express a definite emotion. Observation of the skill of perception and understanding emotions revealed difficulties in recognizing graphical images of emotions (61 %): the children did not differentiate the unemotional expression of the face and the emotion of sorrow; they mixed up such emotions as fear, surprise and sorrow. The children did not always clearly determine the emotional state of people in plot-driven pictures. The children understood the main emotional state of the characters of literary texts, but they mixed up the emotions of fear and sorrow with anger. The most difficult task for the preschool children of group 1 was to understand the emotional content of paintings.

Group 2 comprised children with marked systemic speech underdevelopment and a low level of de-

velopment of the emotional sphere. They demonstrated a considerable decrease in the active and passive vocabulary. It was reflected in poor understanding of adjectives denoting color, shape, height, length, width, prefixal verbs, adverbs of space and some nouns. The problems of understanding the nominative vocabulary were brought about by inadequate formation of object gnosis and, consequently, by poor and hardly differentiated mental images of objects. Disorders of spatial and successive awareness led to the fact that the children of the given group could not complete the tasks connected with understanding complex logico-grammatical constructions: comparative and inverted ones. The marked underdevelopment of active vocabulary called forth difficulties in actualization of the nominative and predicative vocabulary, poor knowledge of adjectives and adverbs, mistakes in usage or inability to find synonyms or antonyms, and mistakes in word derivation. The underdevelopment of grammatical skills was manifested in incorrect word form derivation both of non-productive and productive word categories and revealed problems with constructing sentences: dropping prepositions and violated word order. The low level of formation of coherent speech was associated both with violations of grammar rules and programming of utterances. Poor knowledge of the predicative vocabulary adjectives led to the difficulties of programming coherent utterances and structural grammar mistakes. Absence of semantic unity

and coherence of utterances was accompanied by poor morphological awareness; that is why the children's stories consisted of agrammatical sentences with violated agreement and government. Quite often, the children simply made up 1-2 sentences enumerating parts of an object or characters in a picture.

Speech sound pronunciation in the children with SSU had a polymorphic character; violations embraced all groups of sounds (sibilants, sonorants, front, back, etc.), and anthropophonic defects accompanied phonological ones. The preschool children of group 2 had problems with recognition of both violated phonemes and the ones pronounced correctly. They demonstrated underdevelopment of both elementary and complex forms of sound analysis.

Considerable underdevelopment of the motor and vocal bases necessary for the formation of the mimic and pantomimic skills was characteristic of the children with SSU. The marked violations of the volume and quality of movements of the facial mimic muscles and synkisia resulted in the fact that the mimic movements in the group under observation were inexpressive, lax, separated from each other and were performed with a slow transition from one movement to another. As a result of this, those tested showed a considerable degradation of the skills of random mimic posturing expressing the main emotions, which manifested itself in inability to reproduce such emotions as fear, surprise, sorrow and anger and in mixing the emotions up. A number of the chil-

dren (52.2%) reproduced the given emotions with little expression and differentiation. They were characterized by disorders of phonic breathing, voice timbre and force and violations of melody and intonation.

In relation to general motor skills, the children of group 2 revealed impairment of both the static and dynamic movement coordination, deterioration of precision and self-control of movements, inability to remember a series of suggested movements, gate disorders, and laxity or tenseness of gesticulation. This led to impossibility of pantomimic expression of the main emotions in 48% of the preschool children of the second group. In 52% of the children pantomimic postures were static, monotonous, tense, inadequate and often did not match the mimic picture. In addition, the children found it difficult to use pantomimic means in different situations.

70% of the children of group 2 could not name correctly the emotions expressed graphically; what is more, the majority of children could not determine the emotional state of the people shown in plot-driven pictures and paintings or understand the emotional state of the characters of literary texts.

Thus, the analysis of the data obtained as a result of the summative experiment showed the heterogeneity of the given category of children according to the degree of manifestation of speech and emotional underdevelopment. That is why the necessity of proper organization and application of the individual differentiated approach to overcoming speech underdevelopment in children of the given category

becomes especially urgent.

23 children with MSSU and 23 children with SSU took part in experimental learning. The logopedic work with the children was carried out during one school year. The main forms of work included subgroup and individual classes of the teacher-logopedist, and lessons of the preschool education institution specialists. Individual logopedic classes were conducted for 15 minutes every day. Frontal lessons (in speech development and preparation for learning grammar) were held for 20-25 minutes every week. The preschoolers were divided into subgroups according to the level of formation of the speech system and the revealed individual typological peculiarities.

Logopedic intervention carried out in the process of learning experiment contained the traditional logopedic stages and directions of work with preschool children with systemic speech underdevelopment (V. K. Vorob'eva, V. P. Glukhov, N. S. Zhukova, R. I. Lalaeva, L. N. Likhodedova, E. M. Mastjukova, S. A. Pokutneva, N. V. Serebryakova, G. V. Chirkina, T. B. Filicheva, A. V. Yastrebova, etc.).

For our research, we selected the modern methods of stimulation and development of the emotional sphere of preschool children worked out by T. P. Artem'eva, V. Z. Deniskina, E. I. Izotova, I. Yu. Kondratenko, V. K. Kotyrla, N. L. Kryazheva, S. V. Kryukova, V. M. Minaeva, E. V. Nikiforova, E. V. Ryleeva, A. V. Seminovich, M. I. Chistyakova, etc. These methods were updated and adapted taking into account the speech

and visual impairment specificity, and were integrated into logopedic classes.

The children under test were divided into 2 groups in order to reveal the efficiency of the undertaken study: a control group and an experimental group with equal number of children (46 children in each group). The work with the control group children was carried out using traditional methods.

The work with children of the experimental group was carried out taking into account the individual typological properties of schoolchildren with MSSU and SSU singled out by us during the summative experiment along the following lines.

1. Formation of the motor sphere. It was important for the children with MSSU and SSU to develop general, fine and mimic motor skills simultaneously practicing and stimulating of the muscle and vocal apparatus taking part in the reproduction of mimic and pantomimic movements (static movement coordination, precision and expressiveness of movements, motor memory, volume and quality of mimic muscles). We built up the articulation basis for carrying out work aimed at correcting monomorphemic disorders of sound production and formation of perception and reproduction of complex rhythmic contours.

The specific feature of the children with SSU was that formation of the articulation basis took longer time, and this process presupposed preparation for training pronunciation of sounds of several phonetic types, and the formation of rhythmic awareness needed working not only with complex rhythmic contours but also with

simple ones.

2. Formation of the speech system. The work with children with MSSU involved, apart from training automation of the sibilants and sonorants, broadening the vocal range and improving the melody and intonation aspects of speech. We formed the children's phonemic awareness of the sounds mispronounced before, and the children were taught to use complex methods of sound-syllable analysis (determination of the quality, place, and sequence of sounds and syllables in a word). The lessons included enrichment of the active and passive vocabulary on the basis of extending cognitions about the surrounding world and forming images of objects, and practice of understanding and usage of adverbs of space, prepositions and complex logico-grammatical constructions. It was necessary for the children of the given subgroup to actualize adjectives, and form antonymic and synonymic associations in semantic fields. The correction of violations of grammatical constructions needed the formation of the skills of usage of semi-productive and non-productive kinds of word form derivation, usage of compound prepositions and training complex word form derivation types. During the lessons with children with MSSU, we carried out work targeted at development of coherent monologic speech using the teacher's models, practiced figurative expressions, metaphors and taught the children to make up creative stories.

In the group of children with SSU, before correcting the distorted sounds it was necessary to review and

consolidate the articulation of the sounds the children had acquired, and simultaneously work on formation of auditory differentiation on the basis of correctly pronounced sounds. In addition to extending the voice range we carried out exercises on formation of the melody and intonation of speech. Much time was devoted to formation of the skills of sound-syllable analysis and synthesis of both simple methods of sound analysis (identification of phonemes at the beginning and at the end of a word) and complex ones (determination of the quantity, position and sequence of the sounds and syllables in a word). Work with vocabulary needed to give more time to the formation of images of objects on the basis of which actualization of nouns, adjectives, verbs and adverbs was effected, the word valency, antonymy and synonymy were realized, and the "semantic fields" of words were formed. We paid special attention to the formation of proper understanding grammatical word forms, complex logico-grammatical constructions and the skills to correctly use first productive and then less productive forms of word form derivation and word building. The children with SSU learned to use simple and compound prepositions and construct sentences correctly. The development of coherent speech needed improvement of dialogic skills. Coherent monologic speech was formed on the basis of taking the utterance program out (use of a plan, pictograms, plot-driven pictures, etc.). It was only by the end of the school year that the children with SSU were prepared to make up stories

with elements of creative storytelling.

3. Formation of the emotional sphere.

We carried out work on perfection of the skills of perception, understanding and reproduction of “fundamental” emotions with children with MSSU. Accent was laid on the emotions of “fear”, “surprise” and “sadness”. Then we practiced the skill of perception, understanding and reproduction of more complex emotions and feelings (sorrow, shame, interest, envy, happiness, satisfaction, pride) and differentiated similar emotional states (sadness – sorrow, displeasure – anger, surprise – interest, satisfaction – complacency, fright – fear, sadness – regret, joy – delight).

For children with SSU it was necessary to carry out work on formation of the skills of perception, understanding and reproduction of the emotions of “joy”, “anger”, “sadness” and “fear” and practice understanding and reproduction of the state of “calm”. It was such work that enabled to form the skills of perception, understanding and reproduction of complex emotions and feelings and differ-

entiate similar emotional states at further stages. It was urgent for the children of the given group to form the skill of adequate reproduction of mimic and pantomimic pictures in various situations.

Results of the check experiment showed statistically significant differences in the level of formation of oral speech and emotional sphere in the preschool children of the experimental group. Goodness of the data of the check experiment was corroborated by statistic analysis based on the Pearson χ^2 – criterion.

The data about the distribution of children of the experimental and the control groups according to the level of formation of oral speech and emotional sphere are presented in table 1.

Thus, efficiency of work aimed at overcoming SSU in preschool children with functional visual impairments may be ensured by using the methods and techniques of formation of the emotional sphere at logopedic classes taking into account individual typological peculiarities of the children of the given category.

Table.

Results of distribution of preschool children according to the level of formation of oral speech and emotional sphere in the experimental and the control groups at the stages of the summative and the check experiments, %

Levels of formation of HPF		Experimental group				Control group			
		Beginning of year		End of year		Beginning of year		End of year	
		MSSU	SSU	MSSU	SSU	MSSU	SSU	MSSU	SSU
speech	high	0.0	0.0	82.6	39.1	0.0	0.0	52.2	21.7
	medium	100.0	0.0	17.4	56.5	100.0	0.0	47.8	56.5
	low	0.0	100.0	0.0	4.3	0.0	100.0	0.0	21.7
emotions	high	17.4	0.0	73.9	43.5	26.1	0.0	47.8	21.7
	medium	65.2	47.8	26.1	56.5	65.2	47.0	52.2	56.5
	low	17.4	52.2	0.0	0.0	8.7	52.2	0.0	21.7

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