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INTERPRETATION OF THE MEANINGS OF LEXICAL UNITS BY STUDENTS WITH READING DISABILITIES

Abstract. The article deals with the phenomenon of word semantization (in its ordinary form), which is realized in the speech of students with reading disabilities. The aim of the work is to study the specific ways of interpretation of isolated lexemes (without context) by students with reading disabilities. The main methods comprise the following: theoretical (formulation of the scientific foundations of the study), experimental (conduct of a summative experiment), descriptive (analysis of empirical data) and mathematical. The author determines the theoretical platform of the study, and substantiates the scientific and methodological significance of the analysis of word semantization strategies used by schoolchildren. The work reveals the content of the experiment procedure focused on the study of motivated and non-motivated words of various topical groups, and represents the criterial apparatus of the study. The article analyzes individual students' responses; based on the results of assessment of the data obtained, the experimenter determines the typological features of lexeme interpretation specific to students with reading disabilities. The limitations of lexical units semantization found in the course of the study testify to the peculiarity of the words functioning in everyday linguistic consciousness of schoolchildren and serve as a significant indicator of the level of development of their metalinguistic ability. The results obtained can make up a basis for purposive design of a model of rehabilitation-educational activity aimed at teaching correct interpretation of word meanings at primary school level.

Keywords: interpretation of words; schoolchildren; children with reading disabilities; reading disabilities; children's reading; metalinguistic abilities; lexemes; lexical units; problems with semantization.

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At present, the study of the issues of word semantization is being transferred from the sphere of academic knowledge into the realm of practical development of speech. Pedagogues-researchers believe word interpretation to be one of the most significant components of the schoolchildren's metalinguistic ability.

The term "semantization" is interpreted in modern linguistic literature as a process of determination and definition of the lexical meaning of a linguistic unit and demonstration of its semantics.

Semantization may be looked upon as a phenomenon of scientific sphere and as a notion of everyday life. The scientific tradition is realized in lexicography – the branch of linguistics dealing with compiling, writing and editing dictionaries. This discipline "works out a system of methods and principles of lexicographic semantization" [4, p. 24].

Studying the problem of interpretation of the meaning of a word from the point of view of word lexicology, G. F. Bogacheva defines the meaning as information critical for correct word usage in one's own speech, and for its correct comprehension in the speech of other people. It is the structural characteristic of the meaning that is important for lexicographical practice. The author singles out three information blocks in it: absolute value (objectivation of the lexical notion or the content part of the meaning); relative value (the reflection of the paradigmatic properties of the word); and combinability value (the ability of a word to combine with other words) [3].

In addition to scientific semantization, in real life we often come across the so-called popular ("spontaneous") semantization, which may be defined as interpretation of the word meaning by a person in a concrete situation of communication. This phenomenon has been described in the works of such authors as T. Yu. Kuznetsova, T. A. Kuz'mina, M. E. Mironova, A. V. Rudakova, I. A. Sternin, E. V. Ulybina, and others [10; 11; 12; 15; 17].

The abovementioned approaches to semantization study are opposite in their content, but are closely connected in their essence: they consider the given phenomenon as a special kind of reflection on the word. In lexicography (or in linguistics in general) the word is considered to be part of a semiotic system. Studies of popular ("spontaneous") semantization focus on the person.

All linguistic levels, including the lexical one, are actualized from the position of the linguistic personality [6; 9; 16]. In his works, V. I. Shakhovskiy argues that in the person's linguistic consciousness, the meaning of the word is modified by their personal experience, and possesses, in addition to the systemic meaning, a certain unique personal meaning [18].

At the same time, it should be noted that it is possible to single out typical vocabulary zones both in dictionary definitions and in definitions created by the speakers: the definition of the generic notion and the set of differential features. The first zone reflects the generalized idea about the meaning of a word; it is oriented at inclusion of individual phenomena into the general concept. The second zone presupposes the meaning specification: description of differential features of the lexical unit, which allow the notion identification. The differential features may denote: a) inner and outer characteristics; b) functional characteristics [2; 13].

The works of the lexicological trend actively discuss the issues of definition of the methods (strategies) of word semantization. A. N. Rostova characterizes the strategies of semantization as a "logically natural method of mental activity, which results in comprehension and interpretation of the meanings …" [14, p. 120].

N. D. Golev states that the methods of lexeme interpretation by language speakers depend on variability of linguistic abilities of the person [5]. The speaker uses certain methods of semantization which correspond to their experience and the level of development of linguistic ability.

Linguistics has worked out various typologies of the methods or strategies of word semantization. The works by N. D. Golev contain the following classification of the strategies: definitional, descriptive, associational, contextual, motivational, and referential [5].

The definitional strategy presupposes correlation of the lexical unit with reality (an object, action, etc.). The word is correlated with the generic notion, and the essential features are singled out: *A squirrel is a small furry animal which climbs trees and feeds on nuts and seeds*. Interpretations formulated as classical definitions realize various word zones and reflect a wide range of characteristics. Such interpretation is informative, textual, extended and structurally organized.

Within the associational strategy, the real phenomenon denoted by the word is correlated with a certain quality or feature associated with it in the mind of the speaker. Quite often associations are characterized by stability and recurrence in the same linguistic environment: *Fear – night*.

The descriptive strategy of interpretation is focused on enumeration of differential properties typical of an object without referring it to a family or class of objects (as it is done within the definitional strategy): *Toad – green, slippery, warty, croaks.*

Using the contextual strategy, the speaker gives an example of the usage of the given lexical unit – places the word in a context: *Den – bears live in caves, and wolves – in dens.*

Interpretation via motivational strategy is effected by pointing at the motivational feature which lies at the basis of creation of the given lexical unit: *Bark beetle is a beetle that lives in the bark.*

The referential strategy is realized with the help of referring to the word etymology, synonyms, antonyms or pictures – images of the object: *Acorns are very much like nuts, but you can't eat them.*

Our research draws on the classification of semantization strategies put forward by N. D. Golev. Furthermore, strategies singled out by other linguists are also urgent for our study. Specifically, the works by A. N. Rostova deal with the illustrating strategy, which is rather important for speech production of ordinary language users [14].

The illustrating strategy presupposes reference to a typical situation in which the lexeme under interpretation is used: *Prize – if you take part in a competition, and you win, you'll get a prize.*

The strategy chosen by the speaker in the process of semantization may be determined by the specificity of the word itself. Thus, interpretation of a motivated word presupposes the use of motivational strategy. In a number of cases, a complex strategy model is used to explain the meaning of a word, for example the definitional strategy is complemented with the motivational one.

The aim of our research is to characterize the specific ways of word semantization of schoolchildren with reading disabilities in comparison with their peers without such disabilities.

The sample included Grade 4 schoolchildren of Moscow schools No 15 and 1541: 64 pupils with reading disabilities (according to logopedic conclusions) were recruited in the experimental group (EG); the group of comparative analysis (GCA) was made up of 60 pupils with reading skills corresponding to the norm.

While preparing the materials for the summative experiment, we chose the lexemes so that they might stimulate schoolchildren to use various strategies.

The following groups of 90 motivated and non-motivated lexical units constituted the topical basis for studying word interpretation:

1) artefacts (locations, objects);

2) nature facts (natural phenomena, substances and materials, landscape elements, flora and its elements, fauna and its elements);
3) abstract (temporal, orientative, qualitative);
4) anthroponemic (personal, social).

While choosing and forming lexico-semantic groups, we took into account their classifications presented in the works of S. V. Adamovich, A. V. Kashkina, L. V. Korosteleva, I. A. Khudoba [1; 7; 8].

The practical research material was provisionally distributed into two blocks: the first block comprised non-motivated lexical units, and the second block – motivated ones. Here are examples of the first block lexemes: artefacts – *shlem, pochta, utyug, lasty*; nature facts – *tuman, mramor, propast', cheremukha, pchela*; abstract – *vek, osen', tsentr*; anthroponemic – *strakh, muzyka*. The following words may serve as examples of the second block lexemes: artefacts – *grelka, udochka, prichal*; nature facts – *protalina, ottepel', pustynya, siren', koroyed*; abstract – *rassvet, verkhushka, polet, skorost', vzmakh*; anthroponemic – *yunost', nakhodchivost', lukavstvo, gordost'*.

The task was to explain the meaning of the word. The lexemes were presented without lexico-semantic grouping, i.e. in random order. This tactic was used in order to make the test as valid as possible – to prevent undesirable orientation of the children towards use of a typified strategy while semanticizing words of a certain lexico-semantic group.

The work presupposes a differentiated system of evaluation of results: a) all responses were graded as real or zero; b) interpretations given within the framework of the definitional strategy; c) interpretations realized within the framework of other strategies.

Evaluation of responses based on the use of the definitional strategy was carried out according to the following criteria:
1) structural component of the semanticizing utterance;
2) informative value;
3) textuality;
4) number of characteristics provided.

Evaluation of answers formulated with the help of such strategies as associational, illustrating and motivational was done only against the criterion of informative value.

The structural component presupposes the presence of the abovementioned word zones in the structure of the interpretation: one or several zones are present in the semanticizing utterance. The given criterion is used, first of all, while analyzing interpretations formulated with the help of the definitional strategy.

The criterion of informative value varies depending on the strategy

used. Thus, within the framework of the definitional strategy, informative interpretations contain: a) reference to the generic notion, b) description of the central cognitive features, c) illustrative component. Less informative interpretations include reference to the generic notion and description of peripheral cognitive features. Uninformative interpretations contain only reference to the generic notion or description of features which are not differential for the given lexical unit.

Interpretations with the associational strategy may be considered informative if there is logical connection between associations and the word-stimulus.

Responses of the illustrating type refer to informative interpretations if the situation involved reflects the reality referable to the word-stimulus.

Correlation of response with the motivating stem is obligatory for interpretations within the framework of the motivational strategy – it is the necessary requirement for considering them informative ones.

Textuality presupposes semantic and lexico-grammatical coherence. This criterion also largely belongs to interpretations within the framework of the definitional strategy. It is such interpretations that represent small texts.

The number of characteristics involved is inseparably connected with informative value and is significant in the analysis of interpretations using any kind of strategy.

The materials obtained in the course of our experiment have been analyzed and compared on the basis of the methods of qualitative and quantitative assessment of results.

A scoring system was used to evaluate the experimental data. Scores were given for each criterion (from 1 to 3 scores depending on the level of the task completion success). Zero points were given for the absence of response. The total score was converted into percent. The total percent of task completion was calculated for each schoolchild. Then, we figured out generalized indicators of the level of performance in the works of the EG and the GCA children.

The data obtained in the course of the experiment allow us to speak of the significant differences in semantization of lexical units in children with reading disorders and their peers without such disorders.

The leading semantization strategies in the answers of the children of both groups were the definitional, associational, illustrating and motivational ones.

The main features of the answers of the GCA children (while using the definitional strategy):

– structural completeness of interpretations, tendency to formulate the answer in the form of a complete sentence, identification of two

word zones in the semanticizing utterance: *"vulkan — eto molodaya gora, kotoraya izvergayetsya", "teatr — eto mesto, gde vystupayut artisty", "balet — eto vid tantsa, na kotorom khodyat v puantakh", "skuka — eto grustnoye, unyloye nastroyeniye"*;

– semantic and lexico-grammatical cohesion of the semanticizing utterance: *"mgnoveniye — eto to, chto proiskhodit bistro", "vechnost' — kogda chto-to proiskhodit ochen' dolgoye vremya", "lasty — eto prisposobleniye dlya bystrogo plavaniya", "sklad — eto mesto, gde khranyatsya staryye veshchi"*;

– informative nature of the majority of the interpretations, i.e. reference to the generic notion and provision of the differentiating features of the object. The set of semantic (differential) features is subject to variation depending on the topical class of the word-stimulus: *"kalina — kust so s"yedobnymi gor'kimi yagodami", "khameleon — zhivotnoye, kotoroye menyayet tsvet", "mramor — eto material, iz kotorogo delayut pol, steny", "verkhushka — samoye verkhneye mesto chego-nibud'", "teatr — eto zdaniye, v kotorom smotryat operu"*;

– use of several characteristics (operators) for word semantization: *"raduga — eto yavleniye prirody, povisshaya v vozdukhe posle dozhdya duga iz semi tsvetov", "ushchel'ye — eto treshchina mezhdu gorami, obychno tam nachinayetsya reka", "gradusnik — eto pribor, vnutri kotorogo zhidkost', pomogayushchaya opredelit' temperaturu", "khameleon — eto zhivotnoye, pokhozheye na yashcheritsu, ono otlichno pryachetsya, menyaya tsvet", "smorodina — eto s"yedobnaya yagoda, kotoraya byvayet raznykh tsvetov: krasnaya, chernaya, belaya"*;

– minimum number of refusals to interpret the meaning of a word explaining the problem by not knowing how to do it.

The analysis of the interpretations of the "associational" type given by the GCA children has revealed the following peculiarities:

– logical nature of associations used, clear connection between the stimulus lexeme and the association: "*sedina — starost'", "lampa — svet", "pshenitsa — urozhay", "pustynya — pesok", "prichal — bereg", "strogost' — nel'zya", "shepot — tikho";*

– realization of a generally accepted idea about an object in the interpretations: "*parashyut — spaseniye", "lyzhi — sport", "klyushka — khokkey", "shlem — zashchita", "mramor — dorogo", "steklo — opasno", "grelka — teplo";*

– presence of different kinds of associations in the interpretations: paradigmatic (synonymy, antonymy, hyperonymy, hyponymy): "*vostorg — radost'", "smekh —*

radost’”, “vechnost’ — vsegda”; syntagmatic (response utterance and the word-stimulus make up a phrase): “*verkhushka — mozhet byt’ dereva, skaly, gory i t. d.”, “tsentr — naprimer, tsentr goroda ili derevni”, “blesk — dlya gub”, “godovshchina — svad’by”, “pryzhok — v vysotu”, “vera — v sebya”.*

The analysis of the responses of the illustrating type demonstrates the realization of the informative value principle, for example: “*mirazh — eto kogda nam mereshchitsya v pustyne ostrov s vodoy”, “ottepel’ — eto kogda na ulitse v zimneye vremya stalo teplet’”.*

The analysis of the responses of the GCA pupils made up with the help of the motivational strategy allowed us to reveal attempts to find out the correct meaning of the word through reflection of connection between the word and the motivating stem: “*opereniye — per’ya ptitsy”; “kolokol’nya — bashnya dlya kolokolov”, “listopad — kogda padayut list’ya”, “koroyed — zhuk, poyedayushchiy koru”, “odinochestvo — oshchushcheniye, kogda chelovek odin”, “verkhushka — samoye verkhneye mesto”, “prichal — eto mesto, kuda korabli prichalivayut”, “polden’ — eto polovina dnya”, “siren’ — eto rasteniye sirenevogo tsveta”.*

The typical features of semantization of lexical units (within the definitional strategy) by the schoolchildren with reading disabilities included the following:

– structural deficiency – the utterances are formulated as incomplete sentences, phrases or separate word forms: “*parashyut — s samoleta padat’”, “grelka — dlya obuvi”, “lyzhi — edut”, “lasty — v basseyne”;*

– absence of semantic and/or lexico-grammatical cohesion in the interpretation: “*polet — eto samolet, kotoryy, lyudi letayut”, “raduga — eto takaya prekrasnyy vid”, “dobro — eto chto ty khoroshaya, nikto nikogo ne b’yet”, “sovest’ — eto kogda bessovestnyy ili est’ sovest’”;*

– limited informative value of the interpretations — a) reference of the word-stimulus to the generic notion, absence of indication of semantic (differential) features: “*smorodina — yagoda”, “kobra — zmeya”, “tsaplya — ptitsa”, “nepriyazn’ — chuvstvo”;* b) the opposite tendency – provision of the differential feature of an object without reference of the word-stimulus to the generic notion: “*tayfun — sil’nyy”, “vulkan — goryachiy”, “krepost’ — zashchishchayet”, “kirpich — tyazhelyy”;* c) reference of the word-stimulus to the generic notion and use of peripheral characteristic features: “*kalina — yagoda ochen’ vkusnaya”, “stadion — mesto dlya igr”, “udav — eto zmeya podvodnaya”, “park — mesto, gde lyudi veselyatsya”;*

– minimum informative value of the interpretations – inclusion of only the peripheral features typical of an object or phenomenon: "*blesk — krasivoye", "detstvo — vspominayut", "sovest' — pomogayet", "akter — kotoryy tantsuyet", "steklo — byvayet malen'kim i bol'shim", "teatr — bol'shoy i krasivyy".*

The following tendencies have been observed in the answers of the children with reading disabilities within the associational strategy:

– absence of logical connection between the association and the word-stimulus, use of perceptive experience only: "*ushchel'ye — gde khranyat svoi veshchi", "granitsa — eto raznyye storony", "prichal — rul'", "teatr — khodyat kto-to";*

– use of associations which fail to explain the meaning of words-stimuli (it impossible to understand the semantic connection between the interpretation and the word-stimulus): "*ploshchad' — krasnyy kamen'", "vek — mesyats", "lyzhi — kotoryye edut", "smorodina — zemlyanika", "rukavitsy — na odezhde".*

The analysis of the responses of the illustrating nature has revealed their inadequate informative value, which is manifested in some cases in excessive widening of the situation (*"osmotr — eto kogda chelovek smotrit", "sedina — kogda chelovek stareyet"*), in other cases – in undue narrowing of the notion ("*vzrosleniye — kogda ty ne prygayesh', ne igrayesh' v kukly"*).

The analysis of the interpretations with the motivational semantization strategy has revealed the following peculiarities:

– arbitrary structuring of the composition of the motivated word, orientation towards outward similarity of the phonetic images of lexemes (loss of the real motivating stem): "*koroyed — korni est", "lukavstvo — luk", "opereniye — opirayutsya kogda";*

– use of other strategies for interpretation of non-motivated words (which are less informative in this case) without reference to the motivating stem: "*ottepel' — pogoda", "plavnik — noga u zhivotnykh", "budil'nik — predmet", "koroyed — zhivotnoye", "protalina — dorozhka", "kolokol'nya — sh·chmnaya".*

The semanticizing utterances of the EG children are characterized by replacing interpretation by direct repetition of the word-stimulus, or by introduction of a derived word: "*listopad — listopadnyy", "ploshchad' — ploshchadka", "polet — eto polet", "glubina — eto gluboko", "veslo — eto veslo".*

According to the research results analysis, the works of the GCA children contained from 6 to 12 refusals to answer (from 90 words-stimuli).

Distribution of the responses into zero, definitional, associational,

illustrating and motivational with their subsequent presentation in the form of generalized indicators of effectiveness showed the following results:

– zero — 10%;

– definitional — 35% (23% of which correspond to the normative indicator levels);

– illustrating — 26% (20% are informative);

– illustrating — 5% (all of them are informative);

– motivational — 12% (all of them are informative);

– mixed — 12% (10% correspond to the normative indicator levels).

The works of the EG children contained from 14 to 40 refusals to interpret the meaning, because the children did not know how to do it. The responses have been distributed in the following way:

– zero — 27%;

– definitional — 25% (only 5% of them correspond to the normative indicator levels, the remaining 20% of them do not meet the requirements partly or in full);

– illustrating — 23% (15% — uninformative);

– associational — 10% (7% — uninformative);

– motivational — 7% (2% — uninformative);

– mixed — 6% (3% do not correspond to the normative indicator levels).

Our comparison of the generalized indicators of the level of performance in the works on semantization of lexical units of the two groups of children testifies to the fact that the schoolchildren with reading disabilities show markedly lower results: they have a high percentage of zero responses and/or uninformative, structurally deficient and inadequately extended interpretations.

The data obtained allow speaking about typological peculiarities of lexeme semantization by children with reading disabilities. The limitations of lexical units semantization found in the course of the study serve as a significant indicator of the level of development of the metalinguistic ability of the children of the given category. We may come to the conclusion that the outcomes of semantization are influenced by a number of factors:

– poor formation of the operations of generalization and categorization of lexical units at the lexico-semantic and morphemic levels;

– limitations of the volume of associative-semantic fields, narrowing the range of associational and lexico-systemic ties of the words;

– problems with processing and ordering perceptive-cognitive and speech experience.

The empirical material analyzed in this paper creates a basis of research for purposive design of the content and algorithms of rehabilitation-educational activity aimed at teaching schoolchildren with read-

ing disabilities correct word semantization.

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METHODS OF RESEARCH AND ASSESSMENT OF GRAPHIC COMMUNICATION SKILLS OF THE CHILD AS A POTENTIAL USER OF SUPPLEMENTARY AND ALTERNATIVE COMMUNICATION SYSTEM

Abstract. The article deals with the issues of teaching children with disabilities, among whom 'non-speaking' children make up a considerable part, by means of supplementary and alternative communication. The authors provide a description of the means of supplementary communication which can be recommended for communication with children in cases of marked oral speech deficiency. It is imperative for non-verbal support supplementing utterly limited opportunities of the verbal communication means usage, and ensuring comprehension of verbal information and interaction with the surrounding world. The article describes a system of alternative communication means which should be used with non-speaking children in case of absence of oral speech. The system of alternative communication includes gestures and graphic symbols and symbolic objects. The authors single out categories of children for whom it is desirable, and sometimes necessary, to offer supplementary and/or alternative communication for interaction with other people.

The article demonstrates the effectiveness of teaching how to use alternative and supplementary communication taking into account certain conditions. They include the following: algorithm of learning and introduction of graphic symbols; formation of understanding of the meanings of the symbols introduced; realization of the opportunity to use the symbols learnt immediately to solve communicative problems; constant support and commentary of any communicative signal produced by the child; application of various forms of interaction; inclusion of teaching communication as an inseparable part of the child's life in the educational, rehabilitative and developing process and the process of family education; polysemantic nature of the symbols content, etc.

The article outlines the system of pictographic code and the methods of investigation and assessment of graphic communication. It substantiates the

necessity of choosing the communication means which maximally suit the given child, taking into account the specificity of their development and state of oral speech. The authors suggest a procedure of detection and assessment of communicative, cognitive, linguistic, psycho-social and motor abilities of the child as a potential user of supplementary and alternative communication systems.

The methods of research and assessment of graphic communication are necessary in order to test the capability of each child to perceive the pictographic code. With this end in view, the authors suggest a scale of graphic communication skills presupposing observation and assessment of the child's abilities to perceive and transfer graphic information. It includes the study of graphic perception, ways/means of graphic expression and techniques of manipulating symbolic images, and opportunities of graphic transfer of information. All tasks presented in the article have been made up on a uniform plan and include a research procedure description, an instruction, stimulus material and an evaluation system.

Keywords: alternative communication; supplementary communication; pictographic code; graphic communication; children with disabilities; logopedics.

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World pedagogical practice has accumulated sufficient potential in the sphere of application of various means of non-verbal communication [1; 2; 13; 15; 16; 17]. Using alternative and supplementary systems of communication means, we can considerably develop the communication skills and raise the linguistic potential of the child with disabilities, widen their knowledge about the surrounding world, and form the child's autonomy and independence.

The system of ***supplementary communication*** means is necessary in cases of marked oral speech deficiency for non-verbal support sup-

plementing utterly limited opportunities of the verbal communication means usage, and ensuring comprehension of verbal information and interaction with the surrounding world. The term component "supplementary" underlines that teaching such kind of communication ensures support in speech development and grants an opportunity to use supplementary means if the child does not acquire oral speech after all.

The system of ***alternative communication*** means is efficient in case of absence of oral speech and presupposes acquisition of a special system of communication, in which non-verbal communication means are the basic ones. The system of alternative communication includes gestures, graphic symbols and symbolic objects [2; 15; 16; 17].

Supplementary and alternative systems of communication can be used by:

– people for whom the systems under consideration serve as basic expressive means in the process of communication. For example, they understand speech addressed to them well enough, but cannot express their needs verbally (children with cerebral palsy, moderate intellectual disability, autism, anarthria, etc.). In these cases, they use the means of supportive communication throughout life;

– people experiencing problems with language acquisition (for example, children with moderate intellectual disability, autism, etc.). In most cases, they can master extremely limited verbal communication means, and need supportive communication means temporarily;

– people unabe to use oral speech as a communication means (for example, in cases of severe multiple developmental disorders). In these cases, supportive communication means function as language substitutes, as an alternative to the absent oral speech.

The main tasks of teaching alternative and supplementary communication systems are the following:

– formation of the skills of visual and/or auditory concentration upon the speaking and/or gesticulating interlocutor, "speaking" and musical toys, realistic pictures, photos, and graphic symbols;

– formation of the skills to distribute attention between an object, image, and symbol/symbols as means of communicative problem solving;

– formation of a wish or need to imitate emotional, gestural, pantomimic and verbal strategies of interaction with the interlocutor;

– formation of the skills to imitate everyday life, instrumental and game-based actions, ability to perform them in a certain order in various communicative situations (situation-personal, business-personal, object-oriented communication);

– formation of the skills to understand the essence and necessity of establishing communication and its consequences;

– formation of the skills to understand gestures, realistic images, words, graphic symbols, their sequences, which are used to express direct address of one interlocutor to the other;

– activization of the child's nonverbal intellect;

– acquisition of the corresponding instruments of alternative or supplementary communication system;

– activization of the corresponding response strategies on the basis of the communication means already acquired;

– formation of the need to independently initiate communication with other people with the help of the alternative and/or supplementary communication means;

– automation of the elementary communicative skills acquired in various situations in accordance with the communicative aim (task).

The effectiveness of teaching application of alternative and supplementary communication may be ensured by provision of certain conditions: algorithm of acquisition and introduction of graphic symbols; formation of understanding of the meanings of the symbols introduced; realization of the opportunity to use the symbols learnt immediately to solve communicative problems; constant support and commentary of any communicative signal produced by the child; application of various forms of interaction; inclusion of teaching communication as an inseparable part of the child's life in the educational, rehabilitative and developing process and the process of family education; proper attention to the needs and interests of the child; combination of various tools of instruction; polysemantic nature of the symbols content, expansion of the range of communicative partners and communicative situations the level of variability of which is determined by their potential content actualized by the lexicon, arsenal and conscious acquisition of the communication means, the child's level of independence, object and nature of help, and the strategies of the communicative behavior stimulation.

The term "pictogram" means a symbol representing a concept, object or activity by illustrating. Pictograms can be classified into various categories in accordance with the object or idea they reflect. The advantage of using symbols – pictograms – consists in the fact that all communication members can operate the same images and easily orients themselves among them [1; 13; 15; 17].

In order to choose the communication means which maximally suit the given child, taking into account the specificity of their development and state of oral speech, it

is necessary to detect and assess the communicative, cognitive, linguistic, psycho-social and motor abilities of the child as a potential user of supplementary and alternative communication systems.

Before using pictograms, it is necessary to make sure that the children can perceive the pictographic code. With this end in view, we suggest a scale of graphic communication skills presupposing observation and assessment of the child's abilities to perceive and transfer graphic information. The research methodology presupposes the following stages.

1. Research of graphic perception

Research purpose: determination of graphic perception opportunities.

1.1. Study of the character of graphic perception

Research procedure. The child is asked to look at: photos, pictures (realistic images) [3]; pictures, the content of which is easily understood even if they are stylized. Then, the child is asked to point at the object named by the teacher-logopedist.

Instruction: "Please, show us where… "

Stimulus material is presented by the topical blocks [14] "This is me", "My toys", "My family", "My house", "My school", "The world of colors and sounds", "Animal world", "Plant world", "Natural phenomena", "The world of man", which ensures the emotional and socio-personal development of the children, the formation of their ideas about themselves and about the surrounding object-oriented and social reality. The amount of the stimulus material is determined by the children's age and the Program [14]. It should be noted that the names of the blocks and their inclusion in the Program are subject to variation depending on the children's age and grade.

Assessment system takes into account the following parameters: whether the child shows interest in the stimulus material presented ("interest" means any kind of response on the part of the child who realizes that what they have before them is a representation of reality but not just a bit of paper); whether the child needs "controlled" recognition (participation/help of the teacher-logopedist) of the stimulus material (the amount of stimuli, the kind of images, the character and effectiveness of participation/help).

The assessment system also takes into account the number of the images named; the naming method (vocalization, sound imitation, syllable, word, pseudo word); kind of images; whether the child needs help; the character and effectiveness of help.

Assessment level may be presented in the following way.

High — the child shows interest in the stimulus material presented irrespective of its complexity; points at the majority of the named images independently.

Medium — the child shows interest only in realistic images; recognizes the majority of them; needs "controlled" recognition (help of the teacher-logopedist) of the complicated stimulus material; need of help is expressed by actively attracting attention; help is effective.

Low — the child shows no interest even in realistic images; recognizes few of them; needs their "controlled" recognition or even teaching; help in the form of actively attracting attention, in the form of a model/algorithm of task completion it is not effective.

1.2. Study of spontaneous recognition skills

Research procedure. The child is asked to look at: photos, pictures (realistic images); pictures, the content of which is easily understood even if they are stylized. Then, the child is asked to name the object shown by the teacher-logopedist.

Instruction: "Please, tell us what/who it is. What is … doing?"

Stimulus material is the same as in Task 1.1

Assessment system rests on the same parameters that are used in the previous task: whether the child shows interest in the stimulus material presented; whether the child needs "controlled" recognition (participation/help of the teacher-logopedist) of the stimulus material (the amount of stimuli, the kind of images, the character and effectiveness of participation/help).

The assessment system also takes into account the number of the images named; the naming method (vocalization, sound imitation, syllable, word, pseudo word); kind of images; whether the child needs help; the character and effectiveness of help.

The following ***Assessment levels*** are possible.

High — the child is capable to name the majority of images from the stimulus material with the help of the means accessible to them (vocalization, sound imitation, syllable, word, pseudo word) irrespective of their complexity.

Medium — the child is capable to name the majority of realistic images with the help of the means accessible to them; needs active help of the teacher-logopedist (in the form of naming the first one or two syllables of the word) while naming the more difficult stimulus material; help is effective.

Low — the child does not name (or names only a few) realistic images; help in the form of naming images by the teacher-logopedist for the child to repeat is not effective.

1.3. Study of the skill of controlled recognition of one of the symbolic images, the meaning of which is suggested by the parts of the object

Research procedure. The child is shown symbolic images (pictograms) one after another and is asked to point at the one named by the teacher-logopedist.

Instruction: "Please, show us where… "

Stimulus material. Pictographic images: head with plaits = a girl [5]; square with a triangle above it = a house [8]; head with long ears = hare [6]; circle with vertical lines inside and along the circumference = hedgehog [6].

Assessment level may be presented in the following way.

High — the child understands and accepts the task and finds the pictogram named independently.

Medium — the child accepts the task but can hardly find the pictogram named; help in the form of correlation of the symbolic image with the realistic one makes it easier to find the pictogram named.

Low — the child does not understand or accept the task; points at the pictograms named at random; help in the form of correlation of the symbolic image with the realistic one does not make it easier to find the pictogram named.

1.4. Study of the skill of spontaneous recognition of symbolic images

Research procedure. The child is shown symbolic images (pictograms) one after another and is asked to name the one chosen by the teacher-logopedist.

Instruction: "Please, tell us what/who it is. What is … doing?"

Stimulus material. Pictographic images – three pictograms – from each block (other pictograms from each block can be chosen): *toys, doll, ball* [12]; *horse, dog, cockerel* [6]; *wood, apple, carrot* [11].

Possible ***assessment levels.***

High — the child understands and accepts the task; independently names the pictographic images shown to them with the help of accessible means (vocalization, sound imitation, syllable, word, pseudo word).

Medium — the child accepts the task but finds it difficult to name the pictographic image shown to them with the help of accessible means; needs active help of the teacher-logopedist (in the form of correlation of the symbolic image with the realistic one or naming the first one or two syllables of the word); help is effective.

Low — the child does not understand or accept the task; takes up the pictograms presented at random; help in the form of correlation of the symbolic image with the realis-

tic one or naming the first one or two syllables of the word is not effective.

1.5. Study of the skill of controlled interpretation of a sequence of symbolic images

Research procedure: The child is shown a sequence of symbolic images united by common meaning and is asked to point at the one named by the teacher-logopedist. If the child finds it difficult, a training task is completed.

Instruction: "Please, show us where… "

Stimulus material: series of three symbolic images – pictograms – united by common meaning: *a girl is having tea* [7]; *a boy is watering flowers* [11]; *a girl is sweeping the kitchen floor* [8].

Assessment level can be the following.

High — the child understands and accepts the task; understands the common meaning of the sequence of symbolic images; points at the image named by the teacher-logopedist independently.

Medium — the child accepts the task but finds it difficult to complete it, needs training, help is effective.

Low — the child does not accept the task; does not understand the common meaning of the sequence of symbolic images; understands each image separately and points at it; help in the form of training is not effective.

1.6. Study of the skill of spontaneous interpretation of a sequence of symbolic images

Research procedure: The child is shown a sequence of symbolic images united by common meaning and is asked to name the one chosen by the teacher-logopedist. In case of difficulty, a training task is completed.

Instruction: "Please, tell us who it is. What is/are … doing?"

Stimulus material: series of three symbolic images – pictograms – united by common meaning: *a boy is drawing a picture* [9]; *a girl is picking up mushrooms* [11]; *children are singing a song* [9].

Assessment level can be the following.

High — the child understands and accepts the task; understands the common meaning of the sequence of symbolic images; describes the sequence presented with the help of a sentence.

Medium — the child accepts the task but finds it difficult to perform it, makes up a phrase but not a sentence (*eto mal'chik, eto devochka, eto deti*); needs help of the teacher-logopedist in the form of a training task; help is effective.

Low — the child does not accept the task; does not understand the common meaning of the sequence of symbolic images; understands

each image separately; enumerates separate pictograms even after completion of a training task; help in the form of one training session is not effective.

1.7. Study of the skills of perception and recognition of abstract spatial or combined signs

(feasibility of inclusion in research is determined by the children's age and the educational program requirements)

Research procedure: The child is asked to look at graphic images of monosemantic signs with unique meaning, and to point at it and name it.

Instruction: "Please, show us …" "Please, tell us what it is".

Stimulus material: = — "equal to"; + — "add"; – — "subtract"; road signs: "Pedestrian crossing", "Traffic lights ahead", "Children crossing".

Assessment levels can be represented in the following way.

High — the child understands the meaning of the sign presented, independently points at it and names it correctly.

Medium — the child has problems with understanding the meaning of the sign and with naming it; needs help of the teacher-logopedist; help is effective.

Low — the child does not understand the meaning of the signs presented; does not point at them or name them; help is not effective.

2. Research of methods/means of graphic expression and symbolic images operation techniques

2.1. Study of graphic expression means

In the course of the study we try to figure out what instrument will be best for the child to demonstrate graphic expression skills: pencil, marker, felt pen, or finger. With this end in view, the child is asked to draw lines on a sheet of paper using various instruments.

2.2. Study of symbolic images operation techniques

Before introduction of graphic symbols and practicing their usage, it should be determined what symbol operation techniques are used by the child: they point at the symbol with the index finger/hand; touch it; take out from the set of symbols (communicative diary, communicative board); in case of technical devices – push a certain button or key; change the direction of their gaze.

3. Research of skills of graphic information transfer

3.1. Study of the skill to reproduce graphic model

Research procedure: the child is asked to reproduce the graphic model using the most convenient method or instrument.

Instruction: "Draw the same, please".

Stimulus material: pencil, marker, felt pen; graphic model: eyes, mouth.

The following ***assessment levels*** are possible**.**

High — the child understands and accepts the task; performs the task independently trying to copy the model as best they can.

Medium — the child accepts the task, but finds it difficult to complete it, cannot reproduce the graphic model though tries to use the most convenient method or instrument; needs help of the teacher-logopedist in the form of a training task; help is effective.

Low — the child does not accept the task; does not understand the common meaning of the sequence of actions; help in the form of a training task is not effective.

3.2. Study of the skill to reproduce images and abstract signs

Research procedure: the child is asked to draw a picture on the model, to draw an abstract sign.

Instruction: "Draw the same, please".

Stimulus material: pencil, marker, felt pen; pictures: *house, man, ball*; abstract signs: *square, broken line*.

Assessment level can be the following.

High — the child understands and accepts the task; performs the task independently trying to copy the model as best they can.

Medium — the child accepts the task, but finds it difficult to complete it, cannot reproduce the picture though tries to use the most convenient method or instrument; needs help of the teacher-logopedist in the form of a training session; help is effective.

Low — the child does not accept the task; does not understand the common meaning of the sequence of actions; help in the form of a training session is not effective.

3.3. Study of the skills to transfer/express meaning with the help of graphic symbols of words:

a) with the help of a realistic image;

b) with the help of the word given by the teacher-logopedist.

Research procedure:

a) the child is shown a realistic image (picture) and asked to find the graphic symbol corresponding to it;

b) the teacher-logopedist gives a word and asks the child to find the graphic symbol corresponding to it.

Instruction:

a) "Please, find the picture with …".

b) "Give me …, please".

Stimulus material. Any set of pictures and corresponding pictograms can be chosen [6; 7; 8; 9; 10; 11; 12], for example: pictures – *doll, cup, apple, is sleeping, is playing, is eating* and the corresponding pictograms; words: *horse, girl, doll, eat, draw, sleep* and the corresponding pictograms.

Assessment level can be the following.

High — the child finds graphic symbols for all suggested pictures and words on their own.

Medium — the child finds graphic symbols for the majority of realistic images; has considerable problems with finding graphic symbols for the suggested words; help of the teacher-logopedist is effective.

Low — the child can find the necessary graphic symbol in a few cases; cannot find them for the suggested words, help is not effective.

3.4. Study of the skills to construct utterances with the help of sequence of graphic symbols:

a) with the help of a series of realistic images;

b) with the help of a sentence given by the teacher-logopedist.

Research procedure:

a) the child is shown a sequence of three pictures and asked to pick up and place the graphic symbols in the same sequence;

b) the teacher-logopedist reads a sentence and asks the child to pick up and place the graphic symbols to construct the given sentence.

Instruction:

a) "Please, look at the pictures. Build up what you see with the help of the pictures";

b) "Build up what I said with the help of your pictures".

Stimulus material (you can choose any set of pictures and the corresponding pictograms [5; 6; 7; 8; 9; 10; 11; 12]):

– *A boy is reading a book*; pictograms: *boy, draw, book* [9]; *A girl is picking up mushrooms*; pictograms: *girl, pick up, mushroom* [11]; *An old woman is watching TV*; pictograms: *old woman, watch, TV* [7];

– sentences: *A boy is picking a pear*; pictograms: *boy, pick, pear* [11]; *A girl is dressing a doll*; pictograms: *girl, dress, doll* [12].

Assessment levels *can be the following*.

High — the child understands and accepts the task and performs the task with a little help from the teacher-logopedist.

Medium — the child understands and accepts the task; completes the first variant of the task with insignificant help; finds it difficult to perform the second variant of the task; needs a training session; help of the logopedist is effective.

Low — the child does not understand or accept the task; cannot perform the task even after a training session; help is not effective.

3.5. Study of the skills to construct a short text with the help of sequence of graphic symbols:

a) with the help of a series of plot-driven pictures;

b) with the help of sentences given by the teacher-logopedist;

c) independently.

Research procedure: the child is shown a series of three plot-driven pictures, united by the common

plot, and asked to relate the content of the plot with the help of graphic symbols; the teacher-logopedist reads out three sentences, united by the common plot, one after another and asks the child to relate the content of the text with the help of graphic symbols; the child is asked to make up a short text with the help of a sequence of graphic symbols independently.

Instruction: "Look at the pictures. With these pictures, make up a short story which would correspond to what is drawn in the pictures"; "Listen attentively. I am going to tell you a short story. Make it up with your pictures"; "Look at your pictures and make up your story based on them".

Stimulus material: a series of plot-driven pictures; pictograms [5; 6; 7; 8; 9; 10; 11; 12].

Assessment levels can be the following.

High — the child understands and accepts the task; lays out symbolic images in correspondence with the given sequence of plot-driven pictures; finds it difficult to choose pictograms and determine the order in which they should be placed according to the verbal model, needs help in this case; independent task completion is possible only after a training session, help is effective.

Medium — the child accepts the task; performs only the first variant and only with the help of the teacher-logopedist; cannot complete the second and the third variants even after a training session.

Low — the child does not understand or accept the task; cannot perform the task even after a training session; help is not effective.

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AN OUTLINE OF THE CONTENTS OF A DRAUGHT PROGRAM FOR THE SUBJECT "MUSIC" FOR THIRD-FORM SCHOOLCHILDREN WITH MILD INTELLECTUAL DISABILITY

Abstract. Modernization of education content with the purpose of bringing it in line with the modern socio-cultural requirements and needs is one of the urgent issues of the Russian special education. Work on the content of the programs for students with intellectual disability has been complicated all through the years of existence of the home olygophrenopedagogy by the deficiency of qualified specialists with interdisciplinary training in the fields of teaching children with intellectual disability and musical education. The problem has been solved recently via inclusion of the academic subject "Musical Education of Students with Intellectual Disability" called upon to form ideas about the technologies of musical education of junior schoolchildren with intellectual disability in the curricula of training bachelors in the field of "Olygophrenopedagogy". In spite of the need for the problem solution and its urgency, the results of the design of the content of musical education of junior schoolchildren with intellectual disability have been scarcely presented in the works in the sphere of olygophrenopedagogy. The article presents research materials within the framework of the project "Design of the Program, Methodology and Academic Support for the Realization of the Requirements of the Federal State Educational Standard for Primary General Education of Students with Disabilities and the Federal State Educational Standard for Students with Intellectual Disabilities" initiated by the Ministry of Education and Science of the Russian Federation.

Keywords: musical education; olygophrenopedagogy; children with intellectual disability; intellectual disability; methods of teaching music; methods of teaching music at a special school; music; children's singing; musical art.

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Acquisition of knowledge and skills by students with intellectual disabilities in correspondence with the requirements of the Adapted Basic General Education Program (ABGEP) created on the basis of the Federal State Educational Standard (FSES) for education of children with intellectual disabilities presupposes achievement of certain personal and academic results by such children [9]. Personal results include acquisition of life competences by the learners, which are necessary for realization of practice-oriented tasks ensuring the formation and development of social relations with other people. Academic results consist in mastering the content of the academic subject "Music", and are characterized by acquisition of the musical knowledge and skills, and the ability to use them by children with intellectual disabilities in practical activity.

Personal results occupy the leading position among the predicted results, because it is these results that guarantee acquisition of the complex of life (social) competences determining the ways of achievement of the key goal of the modern special education – inclusion of the children with intellectual disabilities into culture and their accumulation of socio-cultural experience. **The personal results** achieved in the course of acquisition of the content of the educational program in music presuppose the formation of such properties as: positive motivation towards various kinds of musical activity; readiness for creative interaction and communication with the surrounding adults and peers, including those with typical development, in various kinds

of musical activities based on tolerance, mutual understanding and the established norms of social interaction; readiness to use the musical experience acquired in practice at lessons and in out of class activity including common socio-cultural projects; realization of oneself as an equal citizen of Russia proud of their country; adequate evaluation of one's own musical capabilities; primary skills of adaptation to the change of the social sphere; musical-aesthetical preferences, evaluations, emotions, needs and values; kind, responsive, open, understanding and empathetic relation to the feelings of other people; orientation towards healthy lifestyle, caring attitude to one's health; and respect for spiritual and material values.

Academic results are achieved through studying the subject Music. *At the elementary level* it means preparedness to determine the content of the pieces of music known to the child; good formation of the notions about musical instruments and their sounds; acquisition of the singing skill, both with instrumental accompaniment, and without it but with pedagogical support; joint emotional performance of the songs learnt with elements of expressive means; correct formation of sound production while singing vowel sounds and distinct pronunciation of consonant sounds at the end and in the middle of the word; correct melody production in the vocal range D1 – B1; preparedness for identification of parts of a piece of music: prelude, introduction, refrain, break, finale, differentiations of a song, dance, march; skill to express rhythm with the help of voice, taps, percussion instruments; skills to distinguish musical pieces of various character (cheerful, calm, sad); acquisition of elementary knowledge about notation. *The sufficient level* is characterized by independence of performance of the songs learnt with instrumental accompaniment and *a capella*; good formation of the notions about all musical instruments included in the syllabus and their characteristic sounds; acquisition of the skills of singing solo and in chorus in compliance with the elementary requirements of artistic performance and the composer's recommendations about the means of musical expressiveness; distinct and clear articulation of words in the songs of lively character; skills to differentiate songs, marches and dances different in character and tone; acquisition of knowledge about the elementary means of musical expressiveness: loudness (piano – softly, forte – loudly), tempo (lento – slowly, moderato – at a moderate speed, allegro – fast), range characteristics (high, medium, low); acquisition of the notions about the elements of musical literacy as a means of visual representation of music [7; 8; 12].

In accordance with the recommendations of the Draught program for the subject "Music", by the end of third form, schoolchildren are **to know**: forms of pieces of music: one-part, two-part, three-part, four-part, couplet; names of musical instruments (balalaika, violoncello, saxophone), their sounds and playing techniques; **to be able**: to identify the melody in vocal and instrumental pieces of music; to make the voice sound rounded in the upper vocal range and soft in the lower one; to use exhalation in a rational and ergonomic way while singing cantilene with different loudness; to articulate vowels correctly while singing two sounds per syllable; to mutely articulate a familiar song with instrumental accompaniment.

The approaches to evaluation of academic knowledge are designated by the draught ABGEP for education of children with intellectual disabilities in its section "2.1.3. System of evaluation of achievement of planned results of acquisition of the adapted basic general education program by children with mild intellectual disability". The planned results of acquisition of the ABGEP achieved are measured at the end of the first stage of education (by the end of Form 4). According to the requirements of the FSES for education of children with intellectual disabilities, personal and academic results are to be evaluated. Dynamic observation of progress in achieving planned results is carried out during Form 3. Encouragement and stimulation of academic activity of the pupils of Form 3 should be effected with the help of qualitative and quantitative evaluation [13].

Evaluation of academic results in points rests on the principles of the individual-differential approach. The use of the scoring system of evaluation should demonstrate the quality of the knowledge and skills acquired. The planned results evaluation criteria should include their adequacy or controversy to the existing knowledge and practical achievements; integrity and durability of knowledge; freedom and consciousness of application of the knowledge and skills obtained in one's own practical activity. The procedure and the choice of the system of testing and evaluation of the current and summative (at the end of schooling in Form 3) achievements of schoolchildren are the leading factors of activization and stimulation of musical-educational activity of pupils with intellectual disability, and of positive influence upon the formation of their musical culture.

Acquisition of the content of the ABGEP of Variant 1 is planned to be done on the basis of the textbook "Music" using visual and technical means adapted to the capacities of the schoolchildren with intellectual disability, meeting their special

educational needs, and allowing pedagogues to realize the chosen variant of the program.

Evaluation materials and evaluation criteria. Academic results at the lesson of music are evaluated on a five-point scale and are orally commented on. The following aspects are tested and evaluated at the lessons of music: 1) skills of the learners with intellectual disability to listen to pieces of music (listener's motivation), to comment on their content and the musical expressive means used in them; 2) skills to compare pieces of music and to generalize the knowledge acquired; 3) knowledge of musical literature; 4) choir singing habits and skills [1; 14].

The procedure of the program acquisition control is organized by the teacher according to the following criteria: performing art is evaluated both during song learning through observation, and during final singing – "concert performance"; adequacy of knowledge acquisition is evaluated at the lesson during talks about music; emotional response is tested with diagnostic materials. The results of the program acquisition are evaluated in the form of current and topical control. Current control presupposes: oral quiz (individual, frontal); singing the song; playing musical instruments; creative tasks (musical improvisations; creation of a musical image by movement; making up a story on a piece of music, etc.); musical puzzles. Topical control includes: lesson-concert; participation of children with intellectual disability in various group, school and out of school mass amateur art activities (concert, performance, competition, festival) [2; 3; 11].

Evaluation norms for music listening. Mark "*five*": listener's motivation has been completed to the full; the answer is correct and complete, includes the characteristic of the content of the piece of music and the expressive means used; teacher's help is possible. Mark "*four*": listener's motivation has not been completed to the full; the answer is correct but not complete, includes the characteristic of the content of the piece of music and the expressive means used; many leading questions are asked by the teacher. Mark "*three*": listener's motivation has hardly been completed; the answer is correct but incomplete or too short, the expressive means used have not been described properly, many leading questions are asked by the teacher. *Evaluation norms for choir singing.* Mark "*five*": knowledge of the melodic line and the lyrics; exact intonation and rhythmic performance; expressive performance. Mark "*four*": knowledge of the melodic line and the lyrics; basically exact intonation and rhythmic performance; singing is not expressive enough. Mark "*three*": certain inac-

curacies in the melodic line and the lyrics; intonation is unsure and not always exact, sometimes a little false, there may be rhythmic errors; singing is not expressive. *Interest and emotional response* are evaluated by the teacher's oral characteristic: expression of the attitude to life; skills to use key and peripheral knowledge; aspiration for showing musical abilities.

The design of the **content** of the academic subject "Music" depends on the following requirements: modern socio-cultural conditions of special education; priority of the home musical culture taking into account national and regional musical traditions making up part of the global musical culture; artistic value of the pieces of music; accessibility of musical activity and the content of the academic subject "Music" for schoolchildren with intellectual disability; psycho-therapeutic and psycho-rehabilitative opportunities of musical activity.

The content of the program is based on the home (Russian) classical and contemporary works of musical culture: folk and composer music; folklore pieces of music as reflection of popular traditions, national history, love for Motherland, natural wealth, labor activity, people; written and oral forms of translation of musical experience and traditions; the existing genres of Russian folk songs; spiritual and singing traditions as the basic components of the Russian folk and professional musical culture; folklore motifs in the creative work of the home composers. The construction of the program on the basis of recurrence of pieces of music corresponds to the concentric principle of usage of the learning material. Revision by the children with intellectual disability of the pieces of music learnt before (listening to, singing, instrumental performance) facilitates better realization and understanding of the musical expressive means; reinforcement of the notions, knowledge and practical and performing habits and skills acquired previously; enrichment of one's own musical experience [4; 5; 6].

The choice of musical compositions for listening depends, to a great degree, on the correspondence of the content and the emotional constituent of the works of music to the perceptive abilities of the children with intellectual disabilities. The presence of the imagery content responsible for compliance with the principle of artistic creation has been proved by researchers. Schoolchildren with intellectual disabilities better understand the images of the closest environment associated with their everyday life: toys and games, fairy tale characters, animals, school life, relations with peers and relatives, social, historical and natural processes, and labor activity. It is important that music for listening should meet the

following demands: clear, salient structure and form; simple and explicit musical language; classical harmony of arrangement; expressive melodic and metro-rhythmic patterns; and presence of onomatopoetic (imitation of the voices of people, birds, animals; sounds of nature, mechanisms, etc.), visual and dancing elements. The section of the program "Musical Perception" is aimed at acquisition by schoolchildren with intellectual disabilities of the skill to listen to music with emotional and behaviorally adequate responses to the artistic images of musical compositions; elementary notions about the wealth of the inner content of the piece of music created by the composer; emotional comprehension of the character of musical compositions of various genres; ability to express in words and give a verbal outline of a piece of music; skills to identify musical compositions differing in form and character; skills to recognize and name well-known pieces of music independently by listening to the introduction ("Guess the Tune"); readiness to identify the melodic and harmonic structure (accompaniment) of a song or instrumental piece of music; skill to distinguish the structure of a song (introduction, refrain, break, finale); knowledge about solo and choir singing; notions about the specificity of various musical collectives (band, orchestra); and knowledge about musical instruments and their sounds [10; 15].

The tasks in the field of realization of the pedagogical activity in the area "Teaching Form 3 Schoolchildren with Intellectual Disability Listening to Music" are the following: to develop the skill to differentiate the structure and parts of a piece of music; to form the ability to differentiate the melody and accompaniment in a vocal and instrumental musical composition; to acquaint children with the names of musical instruments (saxophone, violoncello, balalaika) and their sounds; to reinforce the skills of playing different children's instruments; to teach children play balalaika, spoons (and other folk musical instruments).

The song repertory of the section "Choir Singing" of the program consists of Russian folk and authored musical works (children's, classical and modern songs). The vocal material included in the program meets the requirements of semantic clarity, reflection of familiar images, events and phenomena, simplicity of the metro-rhythmic pattern of the melody, and contains short musical phrases to ensure the organization of voice protection. The song topics may include: fairy tale and game situations; animal life; labor activity; social and historic events; school life. The song genres may be the following: ditties, New Year round dances; songs

about Motherland defenders; songs about mother; game songs and lullabies.

The formation and development of the skills of vocal performance in schoolchildren with intellectual disability can be facilitated by the formation of good singing posture, unstrained but concentrated position of the chest with straight back and shoulders down or slightly back, with the chin parallel to the floor, standing firm with the arms free and relaxed; the development of singer's breathing, noiseless, deep, fast and quick inhalation corresponding to the character and tempo of the song; teaching the skill to breathe in before a musical phrase; practicing economical exhalation and breath hold on longer phrases; perfection of the skill of quick, calm change of breathing while singing songs without lengthy pauses between phrases; formation of the skill to distribute breathing while singing cantilene with change of dynamic shades (while reducing and enhancing breathing); singing shortened melodic formulae and phrases in one breath; development of a stable skill of natural, free sound (correct articulation of vowels and distinct pronunciation of consonants, intonational distinction of vowels according to the lyrics content; correct articulation of vowels while singing two sounds as one syllable; clear and distinct pronunciation of the lyrics corresponding to the tempo of the song performed); formation of soft, melodious, light singing of cantilene, formation of melodious performance of the child's voice; enhancing attention to the uniform, correct, "clear" intonation, exact intonation of the motif of the song learnt while singing solo and in chorus; formation of the skill of keeping to exact rhythmic pattern of a song without vocal accompaniment of the teacher or musical instrument (*a capella*); perfection of clear intonation and voice stability over the whole range of the song melody; work on development of musical perception, attention and rhythmic awareness with the help of special rhythmic (dancing-rhythmic) exercises; formation of the skill to reproduce a verse of a well-known song via voiceless articulation with instrumental accompaniment; distinction of the pitch of the voice and direction of melodic motion (low-, medium-, high-pitch sounds; falling and rising melodic line, level tone); formation of the skill to indicate the direction of melodic motion with the hand (upward and downward); identification of the strong beat by ear; understanding of the content of the vocal composition on the basis of its melody character (quiet, cheerful, sad, restless) and lyrics; emotionally rich singing of the songs learnt with elementary dynamic shades; understanding conductor's gestures ("ready", "attention", "inhalation",

beginning and end of singing); formation of the skill presupposing the ability to listen to the introduction and begin singing correctly together with the pedagogue or independently listening to the singing of other members of the chorus (singing in unison, rhythmically and expressively, preserving the tuning or ensemble); use of various means of musical expressiveness (tempo, rhythm, dynamic shades) to improve artistic performance; formation of the skill of quiet, moderate in tempo, relaxed and smooth singing from *mezzo piano* to *mezzo forte*; formation and gradual enrichment of the vocal range E1 – A1, D1 – B1, C1 – C2; activization of aesthetic delight and pleasure in one's own singing.

The tasks in the field of realization of the pedagogical activity in the area "Teaching Form 3 Schoolchildren with Intellectual Disability Choir Singing" are the following: to reinforce singing habits and skills on the material learnt at previous stages and on the material of new songs; to develop the skill of quick and calm change of breathing during singing songs without lengthy pauses between phrases; to develop the skill to distribute breathing while singing cantilene with change of dynamic shades (while reducing and enhancing breathing); to develop the skill of correct articulation of vowels while vocalizing two sounds in one syllable; to develop the skills of auditory control of the quality of singing; to develop the feeling of musical rhythm and the skill to reproduce a verse of a well-known song via voiceless articulation with instrumental accompaniment; to use various means of musical expressiveness (tempo, rhythm, dynamic shades) to improve artistic performance; to perfect the clarity of intonation, rhythmic patterns, expressiveness and unison stability in choir singing.

Acquisition of the elements of musical literacy as one of the most difficult kinds of musical activity can be provisionally subdivided into three learning periods corresponding to the development of mental abilities of children with intellectual disability.

The first, propedeutic period – from 6 to 8 years of age, including supplementary Form 1 and Form 1 – is the time of the primary accumulation of experience of music perception, elementary musical experiments, musical-imagery, extra-musical and rhythmic notions, and correct intonation of the vocal part. During acquaintance with the music character (cheerful, sad, quiet), with dynamic shades (softly, loudly), children get to know elementary ideas about versatility of the inner content of the musical works listened to; children become acquainted with musical instruments, their sounds and methods of playing them (piano, drum, violin, accordi-

on, guitar, trumpet); receive elementary knowledge about the structure of a song (introduction, refrain, break, finale), the existing simplest music genres (song, dance, march), kinds of musical activity (singing, listening, dance, playing musical instruments) and general rules of behavior at music lessons.

The second period, embracing children with intellectual disabilities from 9 to 11 years of age, includes more intensive acquisition of musical notions and musical performance skills. The children with intellectual disability are acquainted with such musical notions as pitch and length (duration) of sound, members of a musical collective – ensemble, orchestra, choir, instrumental band; various kinds of sounds, appearance and method of playing of different musical instruments (balalaika, flute, organ, saxophone, violoncello, harp, folk musical instruments), structure (parts) of an instrumental musical composition. The learners accumulate elementary knowledge about the opportunities to use music in various life situations (entertainment, sports, recreation, work, and festive occasions); march styles (military, festive, sport, wedding, funeral, etc.) and dance (round dance, slow waltz, polka, foxtrot, tango, polonaise, etc.).

The third period (the learners between the ages of 12 and 14 years, Form 5) is aimed at systematization and generalization of knowledge received through practice. The children with intellectual disability gain elementary ideas about the methods of notation, graphic representation of pauses, meter, duration, melody and accompaniment. The children get acquainted with musical professions – composer, conductor, musician, singer, and performer; peculiar features of music writing; membership and sound of symphonic orchestra and modern musical groups; musical genres (romance, serenade, sonata, concert, quartet, symphony, ballet, opera, etc.).

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ORGANIZATION OF PSYCHO-PEDAGOGICAL SUPPORT FOR PRESCHOOL CHILDREN WITH GENERAL SPEECH UNDERDEVELOPMENT

Abstract. The article analyzes the works which interpret the concepts "support" and "psycho-pedagogical support". It dwells on the peculiarities of organization of the process of psycho-pedagogical support and considers the authors' opinions about the goals and subjects of the process. Particular attention is paid to special literary sources, which describe general speech underdevelopment and characterize the peculiarities of speech and cognitive development in preschool children of this category. The article highlights the researchers' point of view that deviations in speech development hamper communication with others and often prevent successful acquisition of cognitive processes; limit the formation of ideas and concepts; and make learning difficult. Deficiency and the limited nature of verbal communication adversely affect the formation of the child's personality, bring about mental disabilities and specific features of the emotional-volitional sphere, and lead to the development of undesirable personal traits: shyness, indecisiveness, isolation, and negativism. The results of the theoretical analysis are confirmed by the outcomes of the research undertaken, which was aimed at detecting the level of formation of cognitive and speech development, as well as revealing the specificity of the emotional-volitional sphere of those tested. At the stage of summative experiment, experiment and observation were the main methods. On the basis of research outcomes, the authors outlined the main areas of work, which were taken into account while designing the program of psycho-pedagogical support for preschool children with general speech underdevelopment. The data obtained can be used by the pedagogues taking part in the process of education and upbringing of preschool children with general speech underdevelopment.

Keywords: psycho-pedagogical support; children with speech disorders; speech disorders; preschool logopedics; preschool children.

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Nowadays, the works of the contemporary home researchers more and more often focus on the issues associated with the process of psycho-pedagogical support for the subjects of education. Thus, V. S. Basyuk, M. R. Bityanova, A. R. Dzhioyeva, S. E. Inevatkina, E. I. Kazakova, N. V. Lazareva, L. I. Ragimova, T. A. Sergeyeva and E. E. Forkina study the problems of organization and content of psycho-pedagogical support [1; 2; 4; 6; 7; 8; 10].

As a rule, the aspect of giving help and support is put in the forefront of the notion "support". The process of psycho-pedagogical support, which presupposes provision of any kind of help connected with granting certain conditions for the all-round development of an individual, is quite often considered in modern special literature.

The term "psycho-pedagogical support" is often used nowadays in the context of the issues of education, upbringing and rehabilitation of children with disabilities.

M. M. Ishbayev and Yu. M. Yusupova regard psycho-pedagogical support as pedagogically controlled activity, which has cyclic structure and includes four stages: diagnostic, search, practical and analytical. According to the authors, each cycle is made up of a sequence of actions. The main aim of such support is to ensure continuing support for children with disabilities by joint efforts of all specialists [9, p. 232].

In accordance with the technology of individualized (personified) education and pedagogical support, G. F. Danilovskaya and E. S. Semkina interpret psycho-pedagogical support as a comprehensive system,

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as a specific culture of help for the child with disabilities in solving problems of their development, teaching, upbringing and socialization. The aim of such support is to provide continuing support for the child with disabilities by joint efforts of all specialists via organization of diagnostics and design and realization of individual educational trajectory of development of such children [3, p. 414].

Questions connected with the details of organization of psychopedagogical support for preschool children with general speech underdevelopment become especially urgent in the light of the theme of the given paper.

General speech underdevelopment is diagnosed in cases when the formation of all components of the speech system – both phonetic and semantic ones – has been damaged, with hearing and intellect being intact. Thus, we have registered underdevelopment of phonemic awareness, pronunciation disorders, limited vocabulary, violations of grammatical structure of utterances, rhythmic-syllabic structure of speech, and coherent speech production in the given condition.

The structure of the defect with general speech underdevelopment and the specificity of linguistic maturity are described in the works by N. S. Zhukova, R. E. Levina, E. M. Mastyukova, S. N. Sazonova, T. B. Filicheva, G. V. Chirkina [5; 11; 13; 15].

The analysis of the works by N. S. Zhukova, E. M. Mastyukova, G. A. Mishina, E. A. Strebeleva, S. L. Rubinshteyn, Yu. A. Razenkova, T. B. Filicheva allows stating that preschool children with general speech underdevelopment do not only demonstrate low level of speech development but also show underdevelopment of the cognitive sphere. Thus, the attention of the children of the given category is characterized by instability; auditory memory and effectiveness of the function of remembering are markedly low. In addition, the children of the given category often demonstrate inadequate knowledge about the surrounding world, about the properties and functions of real objects; there appear problems with establishing causative-consecutive relations and phenomena; they show a low level of development of attention and thinking [5; 12; 14].

These data have been confirmed in the course of the summative experiment carried out on the base of municipal preschool education institution “Combined Type Kindergarten No 127” of the city borough of Saransk. 12 preschool children with level III general speech underdevelopment aged 5-7 years took part in the experiment. The diagnostic tools included the following methods: “Correction Test”, “Remember Five Pictures”, “Little Fence”, “Forth one is Extra”, and “The Plot”.

The method "Correction Test" (children's variant) was carried out with the purpose of studying the level of attention formation. A card with objects in it was offered as stimulus material. The instruction was: "Have a look, there are several objects in the card. You must cross out all fir-trees".

The aim of the lesson organized with the help of the method "Remember Five Pictures" was to detect the level of formation of short-term visual memory. The stimulus material included 5 simple pictures of objects. During observation, the experimenter asked the children to remember the pictures. The instruction ran as follows: "Look at the pictures and remember what is shown in them. I will then take them away, and you'll say what they show".

The procedure "Little Fence" was used to test the level of formation of attention and thinking. The stimulus material consisted of counting rods of two colors. In the course of testing, the teacher gave the child a model of a fence which the child was to continue. The instruction was: "Build up a fence on the model".

The use of the method "Forth one is Extra" allowed us to study the level of formation of thinking. A card with objects, one of which did not match the other three, was presented as stimulus material. The instruction was: "Point at the extra object, and explain your choice".

The exercise "The Plot" was carried out to investigate the level of coherent speech formation. The stimulus material included 4 pictures united by the common plot. The teacher asked the child to place the pictures in the right sequence and make up a story.

The following criteria were used while processing the experiment results: task was completed independently, without the teacher's help and with no mistakes (high level); task was completed independently, but with a few mistakes or some help on the part of the pedagogue (medium level); the child tried to complete the task, but could not do so even with the teacher's help, or refused from doing it (low level).

The method of observation was also used to study the specificity of the emotional-volitional sphere of preschool children with general speech underdevelopment. The pedagogue observed the behavior of the child under test in the group (in free activity, in communication with peers and adults, at lessons).

Procession of results. The following parameters were taken into account while processing the research results: emotional, behavioral, verbal and non-verbal responses.

Let us have a closer look at the results obtained. The majority of preschoolers with speech disorders

have demonstrated a low level of formation of attention (66.7 %) and memory (66.7 %). They were easily distracted during task completion in "Correction Test" and could not concentrate on the task. While remembering pictures, they managed to remember only one of them. It is good that the experimental group included preschoolers with the medium level of formation of attention (43.3 %) and memory (43.3 %). While performing the tasks, those tested made trivial mistakes, the correction of which needed the help of the teacher. The majority of the children under test had a medium level of development of thinking (75 %) – the preschoolers managed to complete the tasks with little help of the teacher; 25 % of those tested showed a low level of formation of the cognitive process under study. The observation carried out in the course of the study makes it possible to argue that the majority of mistakes could be attributed to inattentiveness and poor memory. As far as the level of formation of coherent speech is concerned, it was low in the majority of those tested (58.3 %): they could not place pictures in the correct sequence and managed to correct their mistakes only with the help of the teacher; they could neither make up a story and used only verbs. 41.7 % of preschool children demonstrated a medium level of coherent speech development – they laid out the pictures independently and made up a story, still with a little help from the teacher.

Then, the results of observation of the behavior of those tested were studied in detail. The analysis allowed us to distribute all children into three groups: 1) "aggressive"; 2) "active"; 3) "anxious". Group 1 includes 16.7 % of the sample, whose behavior is characterized by such aggressive manifestations as pushing, pinching, menacing others or calling names. They say rude things and do not obey in communication with adults. The children of group 2 (25 %) demonstrated socially approved responses. Thus, preschoolers always responded to the requests of an adult, did not quarrel with peers, and were careful not to offend anybody. In communication, they were active and displayed readiness to help peers to perform a task. Group 3 children under test (58.3 %) demonstrated shyness and anxiety, did not show initiative either during lessons or in their interaction with peers. They usually shunned adults, unwilling to attract attention to themselves. They often became anxious about having made a mistake in the test.

On the basis of the results of the summative experiment, we have designed a formative experiment, the purpose of which was to work out a program of psycho-pedagogical support for preschool children with general speech underdevelop-

ment. Three main areas of work were identified in the process of program design: improvement of the level of formation of cognitive speech development and rehabilitation of emotional-volitional sphere. The resulting program presupposes conduct of complex group lessons three times a week.

Thus, the given paper interprets the psycho-pedagogical support as a process of creation of special conditions for the preschooler with general speech underdevelopment which allows minimizing the existing developmental disorders and facilitating the child's further all-round development and successful adaptation in society. Special attention was given to the issues of studying the specificity of development of preschool children with general speech underdevelopment. The results obtained showed that the majority of those tested had a low level of formation of attention, memory and coherent speech, a medium level of development of thinking, and a high level of anxiety. These results make it possible to argue that the creation of the program of complex psycho-pedagogical support for preschool children of the given category is imperative.

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FORMATION OF THE LOGICAL COMPONENT OF COGNITIVE UNIVERSAL LEARNING ACTIONS IN THE PROCESS OF TEACHING JUNIOR SCHOOLCHILDREN THE SOLUTION OF SIMPLE PROBLEMS

Abstract. According to the adopted second-generation FSES, universal learning actions are to be acquired by students on the basis of all academic subjects. It is possible to form logical universal learning actions at the lessons of mathematics while teaching problem solving. The analysis of the literature in methods has shown that practically no educational system has considered the concept "problem" from the conceptual point of view. From the conceptual point of view, the problem is a mathematical story about a quantitative change of the initial number. This story contains a question, to answer which one is to perform an arithmetic operation. The article addresses one of the approaches to the formation of logical learning actions via work on a simple problem. There are two debatable issues in the modern methodological literature. The first issue is about the role of problems in the course of primary school mathematics, the second is about the approaches to teaching problem solving. On the one hand, teaching problem solving is considered as the goal of education (the child must learn to solve problems), and on the other hand, the process of teaching problem solving is regarded as one of the means of mathematical, and specifically logical, and, in general, intellectual development of the child. This problem should be solved in the context of the thesis of L.S. Vygotskiy, from which it follows that teaching and development form a unity. In our opinion, the decisive role in this question is played by the methods of teaching problem solving, which either ensure or do not ensure the development of mathematical, and specifically logical, thinking.

Keywords: universal learning actions; logical component; simple problems; math problems; problem solution; cognitive activity; primary school; junior schoolchildren; methods of teaching mathematics at school; primary education in mathematics.

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The term "universal learning actions" (ULA) presupposes the ability of a subject to realize self-development and self-perfection via conscious and active acquisition of new social experience. In psychological context, the term may be defined as a complex of the pupil's actions ensuring their ability to independently acquire new knowledge and skills, including the organization of this process.

The following kinds of universal learning actions are singled out: personal, regulatory, cognitive and communicative.

The given paper dwells on the cognitive UAL, and specifically on one of its components – the logical one.

According to the FSES [12], cognitive UAL include the following actions.

- Can formulate problems and solve them.
- Can build up a logical sequence of suppositions.
- Can create oral and written utterances.
- Can structure the information obtained in the necessary form.
- Can choose the most suitable method of problem solving for the given situation.
- Can perform the operations of seriation and classification, can distinguish causative-consecutive relations.
- Can analyze the course and method of action performance.
- Can read reflectively, extracting the necessary and throwing away secondary information.
- The skills of analysis and synthesis are well-formed in the child.
- Can conduct choice and single out the necessary information.

In their turn, universal logical actions include the following positions:

– analysis of objects with the focus on distinguishing qualities (significant and non-significant);

– synthesis as a process of constructing a whole from its parts, and specifically in the course of independent addition of the missing components;

– choice of foundations and criteria for comparison, seriation and classification of objects;

– establishment of correspondence to the notion, recognition of objects;

– establishment of causative-consecutive connections, construction of a logical train of assumptions and proofs;

– detection of generic features and situationally relevant properties.

The UAL mastered by the children ensure acquisition of the key competences constituting the basis of the learning skills, and of the interdisciplinary notions.

According to the adopted second-generation FSES, universal learning actions are to be acquired by students on the basis of all academic subjects. It is possible to form logical universal learning actions at the lessons of mathematics while teaching problem solving.

The analysis of the literature in methods has shown that practically no educational system has considered the notion "problem" from the conceptual point of view.

From the conceptual point of view, the problem is a mathematical story about a quantitative change of the initial number. This story contains a question, to answer which one is to perform an arithmetic operation.

Taking into account what has been said above, we can formulate the content of the notion "problem":

– presence of at least one known number;

– presence of at least one unknown number;

– relation between the known and unknown numbers which allows calculating unknown numbers via arithmetic operations.

In the light of these requirements, all problems to be solved in primary school classes may be divided into three groups: elementary, simple and composite.

An elementary problem has the following significant features:

– one known number;

– one unknown number;

– relation between the known and unknown numbers which allows finding the unknown number via reasoning;

– is solved logically.

A simple problem has the following significant features:

– two known numbers;

– one unknown number;

– relation between the known and unknown numbers which allows finding the unknown number via arithmetic operation;

– is solved by one arithmetic operation.

A composite problem has the following significant features:

– two or more known numbers;

– more than one unknown number;

– relation between the known and unknown numbers which allows finding the unknown numbers via arithmetic operations;

– is solved by more than one arithmetic operation.

The group of simple problems is more interesting for research, because the ability to solve such problems makes it possible to understand the solution of both logical and composite problems.

There are two debatable issues in the modern methodological literature. The first issue is about the role of problems in the course of primary school mathematics, the second is about the approaches to teaching problem solving.

The first issue aroused discussion in connection with the fact that in the second half of the 20th century there was a change of paradigms in views upon teaching and development. There appeared two points of view on the role of problems in the course of primary school mathematics.

On the one hand, teaching problem solving is considered as the goal of education (the child must learn to solve problems), and on the other hand, the process of teaching problem solving is regarded as one of the means of mathematical, and specifically logical, and, in general, intellectual development of the child.

This problem should be solved in the context of the thesis of L.S. Vygotskiy, from which it follows that teaching and development form a unity. In our opinion, the decisive role in this question is played by the methods of teaching problem solving, which either ensure or do not ensure the development of mathematical, and specifically logical, thinking.

At present, it is possible to single out several approaches to teaching problem solving [1; 2; 4; 10; 13; 15].

In the 60s of the 20th century, E. M. Semenov suggested and tested the notional approach to the introduction of the concept "problem" [9]. The specificity of his method consists in the fact that it rests on a correct classification of simple problems. It means the following.

The following problems are given.

– There were three apples on the plate. Two more apples were put there. How many apples are there on the plate now?

– There were three apples on the plate. Mother gave one apple to her daughter. How many apples are left on the plate?

– Three rabbits were given two carrots each. How many carrots were given to the rabbits?

– There were two books on the first shelf, and five books – on the second one. How many books more were there on the second shelf than on the first one?

– There were six books on the first shelf, and two books – on the second one. How many times more were there books on the first shelf than on the second one?

The comparison of the problems shows that, in spite of the difference in the plot, it is possible to figure out common features:

– two known numbers;

– one unknown number;

– the numbers have nominations, identical or different;

– there are words that explain the relation between the known and unknown numbers of the problem.

Words in a problem are called key words if they help:

– to identify the group of problems,

– to determine the kind of problem.

It follows that key words serve as a basis for classification of all simple problems into groups, and their relation to the known and unknown numbers of the problem – as a basis for classification of the problems within the group into concrete kinds.

Taking all this into account, we can subdivide all simple problems into 5 groups.

Group 1 – problems in which there is the key word "vsego" or its synonyms.

Group 2 – problems in which there are the key words "vsego", "ostalos'" or their synonyms.

Group 3 – problems in which there are the key words "po", "vsego".

Group 4 – problems in which there are the key words "na… bol'she (men'she), chem".

Group 5 – problems in which there are the key words "v… bol'she (men'she), chem".

This classification is shown in detail in Figure 1.

Let us denote the known numbers in the problem as A or B, and the unknown numbers – as X, then "KW … → A" should be read as "the key word … refers to the known number", and "KW … → X" should be read as "the key word … refers to the unknown number".

We will demonstrate the use of such logical actions as analysis, comparison and establishing correspondence to the notion on the example of the "problem on addition".

It is necessary to pass several stages in the course of the work.

1. To introduce the idea about the mathematical meaning of the key words "vsego", "stalo", because these words are often used by children in their everyday but not mathematical sense.

The following exercises can facilitate it.

– Take 2 rods in the right hand, and 3 rods in the left hand. Put them before you on the table. How many rods are there before each of you?

Simple problems
(2 known numbers,
1 unknown number)
Problems of Groups 1, 2
(identical nominations
of problem numbers)
Problems of Groups 3, 4, 5
(different nominations
of problem numbers)
Problems
with key word
«vsego»
Problems
with key words
«vsego», «ostalos'»
Problems
with key words
«po», «vsego»
Problems
with key words
«na… bol'she
(men'she)», «chem»
Problems
with key words
«v raz… bol'she
(men'she)», «chem»
KW «vsego» → A
KW «vsego» → X
KW «vsego» → A
KW «ostalos'» → B
KW «vsego» → X
KW «ostalos'» → B
KW «vsego» → A
KW «ostalos'» → X
KW «po» → A
KW «vsego» → B
KW «po» → X
KW «vsego» → B
KW «po» → A
KW «vsego» → X
KW «na… bol'she» → A
KW «chem» → X
KW «na… bol'she» → B
KW «chem» → A
KW «na… bol'she» → X
KW «chem» → A
KW «v raz… bol'she» → A
KW «v raz… bol'she» → B
KW «v raz… bol'she» → X

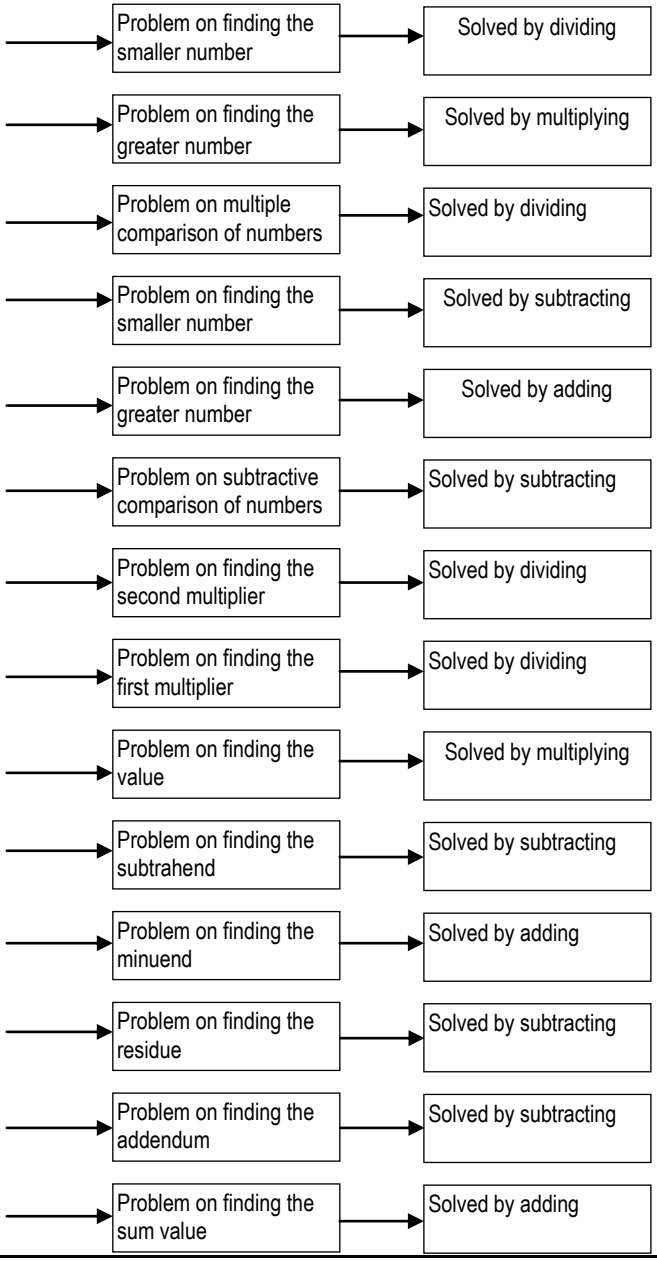

Figure 1. Classification of simple problems according to E.M. Semenov.

It is necessary to do 2-3 similar exercises with concrete objects (notebooks, pencils, books) attracting attention to the words “vsego”, “vmeste”, “stalo”, “v dvukh”. In this case, the pupil performs operations with mobile objects practically; the teacher stresses the key words vocally. Comparing the situations, the child arrives at the conclusion that it is necessary to unite the sets of objects in order to find the result.

After this, we can pass on to the problems in which it is impossible to perform union of the sets practically, it can be done only mentally, but there are also the words “vsego”, “stalo”.

Problem: “There are 5 TVs on one shelf, and 1 TV on the other shelf. How many TVs are there on two shelves?”

Conclusion: if it is necessary to find “skol’ko vsego” (*how many*), we must add the numbers given in the problem.

The key word that helps to choose the right operation is introduced in this way.

2. To figure out the relation between the key word and the unknown number of the problem. To do this, let us make up a problem opposite to the given one. Keeping in mind that the notion is introduced in grade 2, we must give the pupils a detailed instruction.

We will start work with the problem in which it is necessary to answer the question “Skol’ko vsego?” (*How many?*).

Kolya had 5 pencils. Anton gave him one more pencil. How many pencils did Kolya have now?

— Who has guessed what operation is used to solve the problem?

— The problem is solved with the help of addition.

— Why?

— The problem question is “How many pencils did Kolya have now?”

— Now, let the number of pencils Kolya had be unknown, and the number of pencils he will have is known; we’ll get the following problem: “After Anton had given Kolya 1 pencil, Kolya had 6 pencils. How many pencils did Kolya have previously?

— The word “stalo” in this problem refers to the known number 6.

— Has the operation used to solve the problem changed?

— Yes! We shall solve the task with the help of subtraction.

— Then, if the words “stalo”, “vsego” refer to the unknown number, the problem should always be solved using addition.

At this stage, having solved 2-3 problems on finding the sum value, we compare them and come to the conclusion that the problems in which the word “vsego” refers to the unknown number are called problems on finding the sum value.

3. Single out the known and the unknown numbers in the problem.

Special exercises on finding known and unknown numbers in the problem should be done at mathematics lessons. Here is an example.

Problem: "Sasha picked first 2 apples, and then 1 apple more. How many apples did Sasha pick on the whole?"

— Put the character corresponding to the number of the apples picked initially on the demonstration board.

— Put the character corresponding to the number of the apples picked later on the demonstration board.

— So these numbers are known: 2, 1.

— Put the character corresponding to the number of all apples picked by Sasha. Can you do so?

— If we don't calculate it, we can't.

— Why?

— We don' know how many apples there were.

— Then this number is unknown. There two known numbers and one unknown number in the problem. In order to find it, it is necessary to solve the problem.

It is advisable to give problems with insufficient conditions.

Problem: "Petya cut out some stars, and then two stars more. How many stars has Petya cut out on the whole?"

— Can the problem be solved?

— No, as there is only one known number in it.

— Change the problem so that it could be solved by adding.

It might be useful to give problems with excessive information.

Problem: "There were two notebooks on the table. One more notebook was put. There were now three notebooks on the table. How many notebooks were there on the table finally?"

— What is unusual in the problem?

— All numbers are known there.

— Change the problem so that it could be solved by adding.

4. Define the role of nomination.

In order to show children that nomination also plays an important role in the problems on finding the sum value, it is useful to give problems of the following kind.

Problem: "There are 2 books on one shelf, and 5 notebooks on the other shelf. How many books are there on two shelves?"

— Can the problem be solved by adding?

— No, there are different names – books and notebooks.

— Change the problem so that it could be solved by adding.

The problem can be also changed so that it would contain a general word, and in this case the nominations will be considered identical.

Conclusion: If there are two known and one unknown numbers in the problem, the numbers have

identical nominations, and there is the key word “vsego” which refers to the unknown number, it is a problem on finding the sum value. Such problems are solved by the operation of addition.

Hence, the analysis of a simple problem at the first stage of teaching will take the following form:

1. Name one known number
2. What does it mean?
3. Name the second known number.
4. What does it mean?
5. What is the main word in the problem?
6. What kind does the problem belong to?
7. What operation is this problem solved by?

At the next stage, we introduce problems on finding the addendum, in which schoolchildren get better understanding of the role of the relation of the key word to the known and unknown numbers of the problem. From the point of view of teaching methods, this kind of problem solving should begin with stage 2.

Similar work is carried out while introducing other kinds of problems as well. At the final stage, problem analysis is performed according to the following plan:

1. What kind of problem is it by composition?
2. Why do you think so?
3. What kind of problem is it?
4. Why do you think so?
5. What operation are these problems solved by?

Such approach to the introduction of the notion of “simple problem” automatically acquaints the child with the rule of establishing correspondence to the notion: if an object has all significant features of the given notion, it refers to this notion; if at least one feature of the given notion is absent it will be a different notion.

The work on other kinds of problems is continued and reinforced while solving composite problems.

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DIFFERENCES IN PRECONDITIONS OF VERBAL COMMUNICATION AMONG NON-SPEAKING JUNIOR PRESCHOOL AGE CHILDREN

Abstract. The article deals with the problem of differentiation of preconditions of verbal communication among non-speaking junior preschool children in the educational inclusive model. The author presents a modified variant of the method of differential diagnostics of modeling communicative game-based situations, which is a valid instrument of assessment of the level of formation of verbal linguistic functions. Based on the analysis of experimental research, the article defines the main diagnostic criteria of differentiation of preconditions of verbal communication among non-speaking children. The article contains a comparative description and assessment of the levels of formation of preconditions of communicative-verbal development on the basis of the personified approach. A qualitative-quantitative analysis allowed the author to single out three levels of development of verbal linguistic competence of the children corresponding to the distinguished areas and preconditions (parameters) of verbal communication. The differences between the preconditions in the non-speaking children of the junior preschool age are presented in the form of a "diagnostic profile". These specific features should be taken into account by the pedagogues realizing special individual-centered programs of rehabilitation-educational work, which would make it possible to develop the habits, skills and life competences in the children of the given category for their further successful socialization.

Keywords: differential diagnostics; verbal communication; preschool logopedics; junior schoolchildren; children with speech disorders; speech disorders; person-centered approach; means of communication; inclusive education; inclusion; non-speaking children.

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Research urgency. The content of education of non-speaking persons focuses rather on the formation of life competences than the acquisition of the academic component. These competences allow a non-speaking child "to achieve maximally possible independence in solving everyday life problems and facilitate inclusion in the life of society". Ability to communicate ensured by the mastery of verbal communication means is one of the significant and important life competences [1; 2; 7; 11].

Severe verbal communication disorders prevent due formation of mental (cognitive) activity, the development of certain personal traits, aspirations and needs significant for the developing personality [6].

Communicative-verbal development is the first kind of social activity, a most important factor which allows the child to successfully adapt to society, and the leading kind of human activity aimed at self-cognition and self-assessment by means of interaction with other people [18].

Special literature has many inferences about the polimorphemic nature of the contingent of non-speaking junior schoolchildren with *specific disorders of speech development* (absence of verbal speech, complete lack or inadequate comprehension of speech addressed to them, unintoned vocalizations); *disorders of sensory-integrative functions and intellectual activity* (degradation of auditory attention, disorders of visual-spatial perception, high inertia of psychological processes, etc.); *disorders of social communication* (absence of initiative in communication, selective contacts, introvert responses) [2; 3; 8; 9; 16; 17; 19].

At present, inclusion of the children with absence of general-purpose speech in inclusive educational space is one of the most urgent issues of rehabilitation-educational work. Inclusive education is a flexible, open, dynamic system taking into account educational needs of all children. In the process of inclusive education, the system is tailored to match the child, and not vice versa: "The goal of inclusive education is to create optimal conditions for the development of the potential of each child learning in the inclusive group" [12, p. 65].

Modern pedagogy interprets personified approach as a special form of organization of the education process taking into account individual features of the pupils, and as a means of designing an individual educational route [5; 19]. Even today, we may argue that the personified approach to logopedic work with non-speaking children meets the modern social challenges, and facilitates effective overcoming

contradictions in the general inclusive and special education; it is the most urgent approach in the field of diagnostics of non-speaking junior preschool children. Research in this field demonstrates the variable correlation of speech/language abilities of the children with motor, spatial-orientative, emotional-volitional and communicative disorders (S. Yu. Benilova, L. R. Davidovich, R. I. Lalayeva, O. S. Orlova, E. Yu. Rau, T. B. Filicheva, T. V. Tumanova, and others.). Such research focuses on personalization of the individual diagnostic profile, and due to attention to variable and combined components in the structure of defect of children with speech disorders, it provides foundations for further optimization of the general and individual algorithms of rehabilitation-educational intervention.

Thus, as a result of special education literature analysis and education practice, it is possible to single out the following discrepancies and contradictions:

– between the fact of stating differences among non-speaking junior preschool age children in terms of formation of verbal communication preconditions and the absence of criteria of differential diagnostics in this area;

– between the need to differentiate and personify the content of rehabilitation-educational work on formation of communication means in the children of the given category and the inadequate study of the "individual diagnostic profile" of preconditions of verbal communication in non-speaking junior preschool children (aged 3-5 years).

Hence, the problem of the study of preconditions of non-verbal and accessible verbal means of communication in non-speaking junior preschool children becomes especially urgent. With this end in view, in 2015-2016, a summative experiment was carried out in special education institutions of the South-Western Administrative Okrug of Moscow within the framework of an educational inclusive project. 50 children with absence of general-purpose speech took part in the experiment. In accordance with the purpose of the study and the abovementioned contradictions, the following tasks were formulated:

1. To modify the existing methods to realize the aim of the summative experiment.
2. To distinguish the areas and criteria of differential diagnostics of absence of speech in junior preschool age children in terms of preconditions of verbal communication formation.
3. To delimitate the state of the means of communication as preconditions of verbal communication in non-verbal children according to the defined criteria.
4. To single out the typological groups of learners among the children of the given category signifi-

cant for differentiation of rehabilitation-educational work within the framework of the inclusive educational program.

To realize the first task, we *have designed a diagnostic logopedic environment*, in which it would be feasible to use the combination of traditional and innovative approaches.

We refer to the innovative diagnostic techniques integrative polysensory (verbal, visual, acoustic, tactile) environment, as well as a complex of exercises aimed at analysis of mimetic and verbal motor activity according to the procedure of work with non-speaking children worked out by T. N. Novikova-Ivantsova and modified to suit our study [14]. Information computer-based technologies were represented by the hardware methods of investigation of neuro-motor coordination and auditory perception with the help of the Tomatis method or Audio-Psycho-Phonology and the computer program *Interaction Metronom*. In observation of neuromotor skills, we used tasks on rhythmic coordinated movements of arms and legs in the sitting and standing positions, taking into account speed, tempo, rhythm and self-control.

The experimental study was carried out in the form of dynamic observation of the child in the form of modeling communicative game-based situations stimulating their emotional lift. The advantage of game-based methods consists in the opportunity of polymodal impact of various components of the speech/language system. Moreover, game is the basic form of communication of preschoolers, in which children's interpersonal relations and communicative abilities are formed. The game-based role-playing situations have been worked out on the basis of ability to imitate and the children's gender-role interests which allow taking into account gender-relevant behavior of preschoolers [4; 9; 10; 11; 19].

The experimenter modeled 4 communicative situations which maximally conformed to everyday life, elicited dialogue at the corresponding moments of communication, and stimulated the child's verbal activity.

1. Looking at pictures in a personal album. The child is asked to look at family photos and asked the questions: "Whom do you see? Whom are you hugging? Whom do you love? Whom are you kissing?"
2. Object-oriented manipulative activity with toys (wind-up toys; walking and dancing doll; car that moves and produces sounds), and sensory-integrative board.
3. Verbal communication game on mimetic responses with verbal and motor stimuli: "Happy Hands" and "Echo".
4. Plot-driven role-playing games "Hide-and-Seek" (Whom (what) are

you hiding?"), "In the Supermarket" ("What are you buying?"), "In the Kitchen" ("What are you washing?")

Communicative situations were modeled to make up a sequence. The length of usage of each interaction model depended on the child's enthusiasm but did not exceed 10 minutes. The sequence of diagnostic procedures conformed to the uniform line of observation of general communicative abilities and concrete speech/language skills.

As a result of analysis of the data obtained, we have singled out the main diagnostic areas of differential diagnostics of speech absence in junior preschool age children in terms of the level of formation of preconditions of verbal communication (see Table 1):

– communicative-verbal development;

– sensory-integrative abilities;

– socio-communicative development.

In the framework of realization of the **third research task,** we have singled out three groups of children according to the level of formation of the preconditions of verbal communication.

Table 1

Criteria of differential diagnostics of preconditions of verbal communication

Areas	Preconditions	Communicative situations
Communicative-verbal development	Non-verbal signs: – expressive means (facial expressions, gestures); – prosodic means (breathing, intonation, maximum phonation time), rhythmic categories. Verbal signs: – onomatopoetic words; – babbling words.	Looking at pictures in a personal album.
Sensory-integrative abilities	– Visual-spatial perception; – Auditory gnosis; – Tactile perception; – Motor repertoire (differentiated movements in the area of shoulder-girdle, hands and fingers, articulatory part of the vocal apparatus); – Imitation activity (reflected-accompanied-independent)	Object-oriented manipulative activity with toys. Games "Happy Hands", "Echo".
Socio-communicative development	Initiative in communication	Plot-driven role-playing games

With reference to the total results of completion of the tasks, we have determined the levels of formation of preconditions of verbal communication, and singled out three groups of children with absence of general-purpose speech. We have found a low level of formation of the preconditions under study in 28 children (52 %), who scored the total from 1 to 30 points in all exercises (group 1); group 2 (below intermediate level) was made up of 17 children (40 %), who scored 30-60 points; group 3 (intermediate level) comprised 5 children (8 %), who scored from 60 to 90 points (Fig. 1).

Our study showed that each group was characterized by different degree of disorders. The parameters included disorders of motor and speech rhythms, and poor formation of prosodic components and imitating (mimetic) activity.

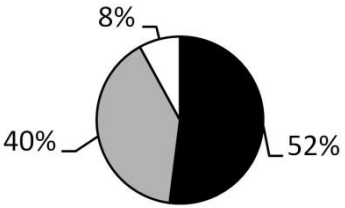

Figure 1. Groups of non-speaking children according to the formation of preconditions to verbal communication

Note: ■ — Group 1 (low level); ■ — Group 2 (below intermediate level); □ — Group 3 (intermediate level)

Characteristic of Group 1 (low level). The total number of points is from 1 to 30. The children of this group are characterized by strong violation of voice modulation. Voice disorders made communication difficult, sound pitch variations could hardly be perceived. Breathing was shallow, uneven; there was discoordination between inhalation and exhalation. The average maximum phonation time was up to 4 sec. The children demonstrated poor onomatopoeic skills: frequent replacement of sound complexes by non-speech sounds, use of separate vocalizations, echolalias. They could not produce mimetic responses to verbal and motor stimuli (in reflected-accompanied form – games "Happy Hands" and "Echo"), which testifies to non-formation of imitating activity. We recorded instruction misunderstanding, refusal from performing the task, and autostimulation. They do not show initiative in communication, and additional stimulation is necessary to actualize reactive response utterance.

Characteristic of Group 2 (below intermediate level). The total score of points is between 30 and 60. Moderate violations of the voice function were recorded in phonation. The children of this group could produce insignificant sound pitch variations. Breathing was shallow but even; inhalation and exhalation were coordinated. The

maximum phonation time was reduced to 5 sec. Vocalizations showed reference with the object, there were fewer exchanges of onomatopoetic words by non-speech sounds; there was a tendency to enlarge the number of sounds in a sound complex; there appeared autonomous speech and pseudowords. Due to the utterly limited nature of verbal means, the children used facial expressions and gestures, tried to accompany babbling words and sounds with gestures and demonstrations of their own actions and those of other people, used differentiated gestures and facial expressions, but were constrained in communication with the experimenter.

Characteristic of Group 3 (intermediate level). The total score of points is between 60 and 90. Insignificant violations of the voice function were typical of the children of this group. Sound pitch variations were produced in full. Long enough, though rather lax exhalation was recorded. There was a slight reduction of the average maximum phonation time under load (6 sec.). Their speech demonstrated a small active vocabulary including words of everyday language. Alongside these words, there were onomatopoeias and beginnings of elementary situational speech. Speech is little intelligible to others. The children used gestures trying to comment on task completion.

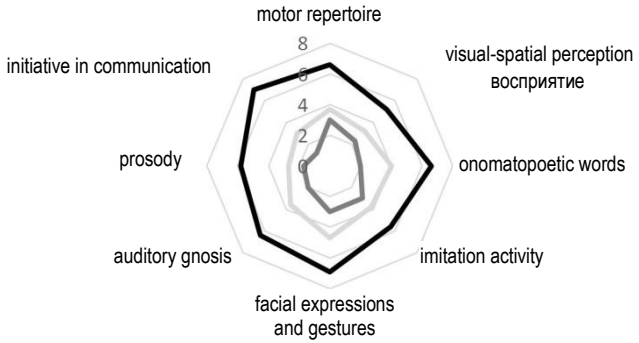

Fig. 2. Comparative profile of preconditions to verbal communication across Groups

Note: — Group 1; — Group 2; — Group 3

Table 2

Comparative analysis of the level of formation of preconditions of verbal communication

Preconditions	Groups according to the level of formations of preconditions		
	Group 1	Group 2	Group 3
motor repertoire	2.8	3.0	6.6
visual-spatial perception	2.3	4.2	6.0
onomatopoetic words	2.0	4.0	6.6
imitation activity	3.0	3.8	5.6
facial expressions and gestures	3.0	4.7	6.9
auditory gnosis	2.0	3.6	6.4
prosody	1.7	2.7	5.8
initiative in communication	1.2	3.7	7.0

On the results of the complex differential diagnostics held we have found out which preconditions of verbal communication were damaged to a greater degree, and which of them preserved their neuro-compensatory potential. As long as it was necessary to personify the content of rehabilitation-educational work on formation of communication means in non-speaking children of the junior preschool age, we have designed a profile of the preconditions of verbal communication formed in the abovementioned groups (Fig. 2).

The children were distributed into three groups depending on the level of formation of the preconditions of verbal communication, but there were variable problems within the groups, for example, in Group 1, all children demonstrated problems with getting in contact and low initiative in communication, but had higher indicators in imitating activity. The indicators of the children of group 2 were heterogeneous: low in the motor sphere (poor coordination of movements, unsure performance of limited movements), and high enough in the level of using gestures and facial expressions, interest in object-oriented manipulative activity, which influenced the choice of correct method of task performance. Group 3 demonstrated wish and initiation of communication, but at the same time, we observed violations of phonic breathing and other prosodic components (see Table 2).

Thus, on the basis of the specific features of the preconditions of verbal communication, we have distinguished 3 typological groups of non-speaking junior preschool age children different in the level of development of speech/language competence, and have presented a “diagnostic profile” that allows assessing the dynamics in the process

of rehabilitation-educational intervention.

The analysis of the research results have shown the effectiveness of the methods approbated for the category of children under observation, which serves as one more proof of the diagnostic value of the suggested methods of investigation. Modeling communicative game-based situations is an efficient and valid means of diagnostics of the preconditions of verbal communication in non-speaking children, and may allow exercising the personified approach to the organization and content of rehabilitation-educational work in future.

The experimental study allowed us to figure out the urgent problems of differential diagnostics of non-speaking children and to characterize the levels of formation of the preconditions of communicative-verbal development. The suggested diagnostic methods may be recommended both for further similar research and for broad implementation in practical activity of educational, and specifically inclusive institutions.

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SPECIFIC METHODS OF STUDYING COMMUNICATIVE UNIVERSAL LEARNING ACTIONS OF JUNIOR SCHOOLCHILDREN WITH DISABILITIES

Abstract. The article describes the essence of universal learning actions on the basis of analysis of such normative documents as the Concept of Development of Universal Learning Actions and the Federal State Educational Standard for Primary General Education (FSES PGE). Special attention is paid to the characteristic of communicative universal learning actions, specifically in primary school children with disabilities, attending inclusive education institutions. The aim of the study is to develop a methodology for the study of communicative universal learning actions in the children of this category, and to work out the criteria for determination of the level of their formation. The methodology is focused on the study of three groups of universal learning actions: first, actions aimed at transfer of information; second, actions related to knowledge about the rules of speech etiquette and the ability to apply them in specific situations of communication; third, actions related to the peculiarities of interaction between the subjects of the process of education in various activities. The article presents the results of a tested system of methods allowing characterization of the levels of formation of communicative universal learning actions in one of the categories of primary school children with disabilities, namely: students with cerebral palsy.

Keywords: universal learning actions; communicative universal learning actions; junior schoolchildren; children's palsy; CP; children with musculoskeletal disorders.

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Universal learning action (ULA) is a key notion in such normative documents as the Federal State Educational Standard for primary general education FSES PGE) and the Conception of Development of Universal Learning Actions [1; 2; 15]. Analysis of psycho-pedagogical literature has shown that this notion is considered from different points of view in the works of such scholars as A. G. Asmolov, G. V. Burmenskaya, I. A. Volodarskaya, O. A. Karabanova, S. V. Molchanov, N. G. Salmina and others. On the basis of the abovementioned documents and psycho-pedagogical literature, we can define the notion "universal learning actions" (ULA) as the ability of the subject to actively acquire new knowledge and skills, which serve as the basis for self-development and self-perfection, and ensure the opportunity of independent acquisition of the skill "to learn" [1; 2].

Communicative ULA dealt with in our study ensure social competence and consideration of the position of other people; skills to listen and take part in dialogue; to integrate in the group of peers and build up effective interaction and cooperation with peers and adults [9; 12; 13]. It is necessary to note that junior preschool age is a sensitive period for the formation of communicative actions. It is especially important for the category of students with disabilities, for whom this kind of ULA is a basis for successful socialization. Under the Federal Law "On Education in the Russian Federation" (of December 29, 2012. № 273-FZ), the category "student with disability" is characterized as "a person with disorders of physical and/or psychological development, confirmed by the psycho-medico-pedagogical commission and preventing them from getting education without creation of special conditions [14, p. 4]. Our study focuses on such category of persons with disabilities as children with musculoskeletal disorders, which include children with cerebral palsy (CP).

Research is accomplished within the grant for scientific research in the priority areas of scientific activity of the higher education institutions – partners in network interaction (South Urals State Humanitarian Pedagogical University and Mordovian State Pedagogical Institute named after M.E. Evseyev) on the topic «Formation of universal learning actions of junior schoolchildren under the conditions of education modernizations».

In accordance with the scientific works of D. I. Boyko and G. Zh. Mikerova, the given group of pupils can be characterized in the following way: a group with motor disorders which emerge as a result of damage of the motor systems of the brain and are manifested in lack or absence of control of the central nervous system over arbitrary movements, which leads to the low level of formation of communicative skills [3; 9]. Within the framework of general education, it is necessary to create special conditions for the formation of communicative ULA in such children. These conditions should include diagnostics of the level of formation of the said actions. At the stage of summative experiment of our research aimed at diagnostics of communicative ULA in children with CP, we worked out the corresponding methods, substantiated the assessment criteria, and presented the characteristic of the level of formation of the abovementioned ULA.

Based on the analysis of special literature (D. I. Boyko, N. N. Malofeyeva, O. S. Nikol'skaya, I. A. Neyasova), we have singled out the skills ensuring the formation of the communicative ULA in persons with disabilities, including students with children's CP: establishment of cooperation in learning; formulation of questions; management of partner's behavior; skill to express one's thoughts clearly and in full in correspondence with the tasks and conditions of communication, etc. [3; 7; 8; 10]. These skills were differentiated into three groups: 1) actions aimed at transfer of information; 2) actions related to knowledge about the rules of speech etiquette and the ability to apply them in specific situations of communication by junior schoolchildren with CP; 3) actions related to the peculiarities of interaction between the subjects of the process of education, and specifically junior schoolchildren with CP in various activities. Now we will dwell on the characteristics of the methods used to study the abovementioned groups of skills.

To study the ULA of *Group 1*, we have chosen *the method of "Left and right sides" (according to J. Piaget)* [11, pp. 62-64]. Observation was conducted during individual interview oriented towards the abovementioned method. Those tested were offered the following sequence of tasks: 1. "Show me your right hand. And now the left one. Show me your right leg. And now the left one" (the task is performed with the child sitting or standing facing the experimenter). Another instruction may be as follows: "Show me my right hand. And now the left one. Show me my right leg. And now the left one." 2. Coins and pencils are laid out on the table before the child (the coin to the left of the pencil looking from

the child). The experimenter asks the question: "Is the pencil to the left, or to the right? And what about the coin?" 3. The child sits opposite the adult, who has a coin in the right hand, and a pencil in the left one. The experimenter asks the question: "Is the coin in left hand, or in the right one? And the pencil?" Proceeding from the analysis of psycho-pedagogical literature (J. Piaget, A. G. Asmolov, G. V. Burmenskaya, I. A. Volodarskaya and other researchers), the following *criteria* were chosen to assess the results obtained: comparison of the characteristics or qualities of objects with the specificity of spatial position of the observer; coordination of different spatial positions; ability to give a clear and complete answer to the question of the interlocutor [2; 11]. Taking these criteria into consideration, we distinguished the following *levels* of task completion: *low level* (the child answers the questions and performs the actions offered by the experimenter "incorrectly" in all tasks: does not take into account the differences between their position and that of another person, incorrectly compares the qualities of objects from the point of view of the observer, does not give full answers to the experimenter's questions); *intermediate level* (the child gives correct answers in two tasks only: they identify the sides correctly from their own position, but cannot take into account the position of the partner; can give short answers to the questions of the experimenter); *high level* (the child completes all tasks correctly; takes into account the difference in the position of another person, compares the qualities of objects from the point of view of different observers, gives complete answers to the experimenter's questions).

The ULA of *Group 2* were studied using the adapted method of N. E. Veraksa [5, pp. 85-86]. The diagnostic material includes three submethods, according to which the child is asked to look at series of pictures showing adults and children. In the instruction, the experimenter asks the child to choose the picture showing the correct answer and put a cross in the circle next to it. *The assessment criteria* may be presented in the following way: skills to perceive and analyze the emotional state of other people and to compare it with their own one; presence of knowledge about generally accepted norms and means of expression of attitude towards peers and adults; independence in choosing answer; ability to explain the answer (formulated drawing on the works by N. E. Veraksa, A. G. Asmolov and others). With regard to these criteria, the following *levels* were singled out: *low level* (at the given level, the development of communicative skills is evaluated on the scale from 0 to 5 points; the children do not perform the tasks of

any of the methods, or perform the tasks of one method only, and make mistakes into the bargain); *intermediary level* (at the given level, the development of communicative skills is evaluated on the scale from 6 to 10 points; the children perform the tasks of the first two submethods correctly); *high level* (at the given level, the development of communicative skills is evaluated on the scale from 12 to 16 points; the children perform all tasks of the three submethods correctly).

The ULA of *Group 3* were diagnosed with help of the method of *observation*. It was carried out at the lesson during which the experimenter could record the behavior of the children with CP under conditions of direct interaction between the child and the teacher and the peers. Analysis of the results obtained was conducted according to the following *criteria*: wish to get in contact with peers and adults; skills to organize communication including the ability to listen to the interlocutor and sympathize with them; knowledge of the norms and rules to be observed in communication with other people; knowledge of the norms and rules of behavior at the lesson; ability to adequately react to the teacher's comments and refrain from aggression towards the surrounding people (the indicators have been formulated drawing on the works of such authors as A. G. Asmolov, D. I. Boyko, E. A. Trofimchuk) [1; 3; 13]. With regard to these criteria, the following *levels* of acquisition of ULA were singled out: *high level* (the child can quietly sit at the lesson without interfering with the neighbor or misbehaving themselves; the child quietly reacts to the teacher's comments without displaying aggression; understands instructions to the tasks in the subject; if they need help, they ask the teacher or neighbor for it independently; can sustain dialogue with the teacher or peers); *intermediate level* (the child has problems with establishing contact with the teacher; in some cases cannot control themselves, can shout out answer without putting up the hand, or push the neighbor by chance – which may be a consequence of misbehavior. On the whole, the child is quiet, learns without showing aggression or apathy; can give one word answers to the questions of the teacher or peers); *low level* (the child is anxious at the lesson, keeps asking to repeat the material or may be inhibited and display apathy; is hardly ready to contact peers, can manifest unmotivated aggression or fear).

The given method was tested in the course of experimental work. 20 schoolchildren with the diagnosis "spastic diplegia of moderate degree", selected on the basis of psycho-medico-pedagogical commission certificates, took part in the

experiment. 10 children comprised the experimental group (EG), and 10 pupils made up the control group (CG). Now we are going to dwell on the characteristic of the level of formation of communicative ULA in junior schoolchildren with CP.

In the course of testing with the method of "Left and right sides" (according to J. Piaget), the experiment participants of both the EG and the CG showed practically the same results. 50% of those tested in both groups did not cope with the task: the junior schoolchildren failed to answer a single question, or complete a single task. The same number of the subjects (50%) were referred by us to the category of those with the intermediary level of formation of the skill to transfer information. This part of the experiment participants managed to complete two tasks out of four. The following difficulties were recorded: the junior schoolchildren with CP could not quickly orient themselves in the questions asked, gave only one word answers, and displayed no initiative in communication.

The following results were obtained while performing tasks of the second experimental series (according to the method of N. E. Veraksa): the schoolchildren with CP of both the EG and the CG have the intermediary (30%) and low (70%) level of formation of the actions associated with the acquisition of knowledge about the rules of speech etiquette and the skills to use them in concrete situations of communication. We believe that the problems might have been brought about by the fact that children with CP have movement coordination disorders; that is why it is difficult for such children to put a cross in the corresponding circle and to adequately characterize the actions of other people. *Intermediate level* was demonstrated by 30% of the participants of both groups. They matched the action with the task correctly, but performed the task slowly, which prevented them from completing the task to the end. Those tested could analyze emotional state of other people and compare it with their own one, and they were able to explain their position. Many junior schoolchildren could not match emotions with pictures, as well as tasks with actions, and were rather anxious; often, they could not explain their position on the actions in the pictures and could not formulate a conclusion.

While performing tasks of the third experimental series, in which we studied actions associated with the specificity of interaction between the schoolchildren with CP and their peers in various kinds of activity, *high level* of formation of the given skills was not shown by any experiment participant of the EG and CG. This testifies to the fact that children with CP have problems with interaction with typical

peers. *Intermediate level* of development of ULA was demonstrated by 40% of those tested in both groups: the children are able to engage in dialogue with the teacher, ask classmates for help independently, but fail to understand the task in full; these children can hardly interact in group work, and do not show initiative. *Low level* of formation of the actions under study was recorded in 60% of the children of both EG and CG: the children are passive at the lesson, are not willing to establish contact with the pedagogue and peers, do not take part in group activity, can shout out the answer or begin to speak loudly without motivation, and display aggression.

Thus, the peculiarities of the study of the communicative universal learning actions of junior schoolchildren with disabilities can be presented in the following way:

1. It is necessary to understand the basic terminology (ULA represent generalized methods of action performance serving as a basis for orientation of schoolchildren across various subject areas ensuring the opportunity of independent acquisition of the skill to "learn"; the communicative ULA are actions granting social competence, conscious effort of the pupils to take into consideration the positions of other people, and the ability to build up effective interaction and cooperation with peers and adults).

2. In order to study the communicative universal learning actions of junior schoolchildren with disabilities it is necessary to adapt the methods existing in general education (we have adapted the method "Left and right sides" (according to J. Piaget), the method of N. E. Veraksa; we used observation to study the actions associated with the specificity of interaction between the subjects of education).

3. With the purpose of assessment of the results obtained, it is imperative to substantiate the criteria (we have singled out the assessment criteria of actions on transfer of information; on acquisition of the knowledge about the rules of speech etiquette and the skills to use them in various situations of communication; on the specificity of interaction between the subjects of education).

4. The results of our study of the given actions testify to the fact that in the area of transfer of information, the subjects of the experiment had a command of certain verbal means, could almost correctly give arguments in favor of their choice, and were able to conduct dialogue with the interlocutor and the experimenter. The children gave mostly short answers to the questions asked, and had problems with constructing complex sentences (for example, while constructing utterances, there were numerous pausese associated with the process of looking for the right words to say); they

often needed the experimenter's help, for instance, leading questions which allowed building up a constructive dialogue. Characterizing the peculiar features connected with acquisition of knowledge about the rules of speech etiquette, it should be noted that in their majority, the children possessed the knowledge concerning the familiar social or everyday reality, but they sometimes failed to use their knowledge adequately for solution of concrete practical problems, which speaks of poor formation of the corresponding skills. The process of interaction between the children with disabilities was also distinguished by certain specific features, for example, the children rarely expressed wish to exercise joint actions with their peers and did not show initiative; they were able to engage in dialogue both with adults and peers, but could not always perform the task because they did not understand the instruction; it was very seldom that they took part in group activity, and when they did, they were aggressive and spoke loudly.

5. It was found out in the course of diagnostics that junior schoolchildren with disabilities had intermediate and low levels of formation of communicative ULA. Thus, purposive rehabilitation-educational work of the teacher, psychologist and defectologist is necessary for the formation of these actions in the schoolchildren of this category.

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ORGANIZATION AND CONTENT MODEL OF THE SYSTEM OF COMPLEX SUPPORT FOR CHILDREN WITH SEVERE MULTIPLE DEVELOPMENTAL DISORDERS

Abstract. The article describes an organization and content model of the system of complex support for children with severe multiple developmental disorders (SMDD). The model has been designed with the purpose of organization of the system of complex support for children with SMDD, enhancing socialization of the children of the given category via granting accessible and high quality complex rehabilitation and abilitation. The design of the model of the system of complex support for the children of the given category has been carried out within the pilot project of the Ministry of Labor and Social Protection of the Russian Federation aimed at specification of the approaches and formation of the system of complex rehabilitation and abilitation of persons with disabilities, including children. Organization of the system of complex rehabilitation and abilitation of children with SMDD presupposes the creation of principally important conditions: complex and systemic character of rehabilitation and abilitation activities, continuity of the process of complex support, constructive interaction and succession in the work of specialists and institutions, professionalism of the staff, and accessibility of rehabilitation and abilitation activities. The model of the system of complex support for children with SMDD includes the following interconnected blocs: normative-legal, administrative, systemic, and control and assessment blocs. The article contains recommendations on the development of the system of complex support for children with SMDD: unification of interdisciplinary and terminological apparatus; elaboration of regional legal documentation in the field of normative definition of the category of children with SMDD, creation of the coordinating council for the development of a detailed plan of implementation of the suggested model, etc.

Keywords: children with disabilities; children with disabilities; severe multiple developmental disorders; complex support.

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Approaches to the creation of a system of complex rehabilitation and abilitation of persons with disabilities, including children among whom researchers single out the category of children with severe multiple developmental disorders are being formed in Russia today.

Children with severe multiple developmental disorders (SMDD) are those with a combination of two or more severe psychophysical disabilities (severe impairments of vision, hearing, speech, intellectual development, etc.), for example: combination of deafness and poor vision, intellectual disability and blindness, severe musculoskeletal disorder and speech impairment (M. V. Zhigoreva, I. YU. Levchenko, N. M. Nazarova). Researchers note that children with SMDD have specific features of development and specific needs and ought to be granted obligatory complex support (T. A. Basilova, M. V. Zhigoreva, K. S. Lebedinskaya, I. YU. Levchenko, O. S. Nikol'skaya, A. V. Khaustov and others) [4; 6; 8; 12; 13; 17].

Analysis of statistical information of medico-social expertise over the period 2014-2016 showed that about 1% of children in Sverdlovsk Oblast had the status of "child with disability". And the statistical information available does not allow singling out the target group of children with SMDD because disability is diagnosed on the basis of one disorder only. It has been revealed that in most cases the status of "child with disability" is established on the basis of the following groups of disorders:

– psychological and behavioral disorders (30% of the total number of cases of child disability);

– nervous system disorders (17% of children with disabilities);

– congenital defects (developmental disorders), deformations and chromosome abnormalities (15% of children with disabilities);

– endocrine diseases, nutrition and metabolic disorders (14 % of children).

We can make a supposition that among the most widespread groups of children with disabilities there are children, who do not only have a disease serving as a basis for certification of disability but also possess other developmental disorders that allow referring them to the category of children with SMDD.

These data have been confirmed by the statistics given by the State Public Inpatient Institution of social services "Ekaterinburg Children's Boarding House for Children with Intellectual Disability". Analysis of the nosological groups to which the inmates of the boarding house belong shows that the most widespread disorders are the following:

– psychological and behavioral disorders (2014 — 99,6 %; 2015 — 100 %; 2016 — 98,3 %), among which, intellectual disability prevails (2014 — 91,1 %; 2015 — 92,6 %; 2016 — 97,9 %);

– nervous system disorders (2014 — 71,6 %; 2015 — 84,8 %; 2016 — 82,2 %), including cerebral palsy and other paralytic syndromes (2014 — 27,9 %; 2015 — 33,7 %; 2016 — 35,1 %);

– diseases of the eye and its adnexa (2014 — 67,4 %; 2015 — 62,7 %; 2016 — 80,3 %);

– endocrine diseases, nutrition and metabolic disorders (2014 — 37,1 %; 2015 — 41 %; 2016 — 50,6 %);

– congenital defects (developmental disorders), deformations and chromosome abnormalities (2014 — 39,4 %; 2015 — 38,3 %; 2016 — 35,9 %).

The parameter values make it possible to draw a conclusion that almost every inmate has psychological and behavioral disorders, mostly in the form of intellectual disability, and other diseases (cerebral palsy, eye diseases, etc.), which lead to the emergence of the phenomenon of "severe multiple developmental disorders".

The aim of our research consisted in design of a model of the system of complex support for children with severe multiple developmental disorders. The following *tasks* were accomplished in the course of the model design:

– to formulate a set of normative-legal provisions regulating the activity targeted at complex support for children of the abovementioned category in the field of health protection, education, social services, culture, sport, employment services and activity of nonprofit organizations on the basis of analysis of the normative-legal documentation of the international, federal, and regional levels;

– to study and analyze the methodological materials of the Ministry of Labor and Social Protection of the Russian Federation recommended for approbation and implementation within the pilot project on specification of the approaches to the formation of the system of complex rehabilitation and abilitation of per-

sons with disabilities, including children.;

– to work out suggestions for normative-legal regulation of interdepartmental interaction between organizations belonging to various departments and agencies ensuring succession in the work with children with SMDD;

– to work out and substantiate a model of the system of complex support for children with SMDD in Sverdlovsk Oblast;

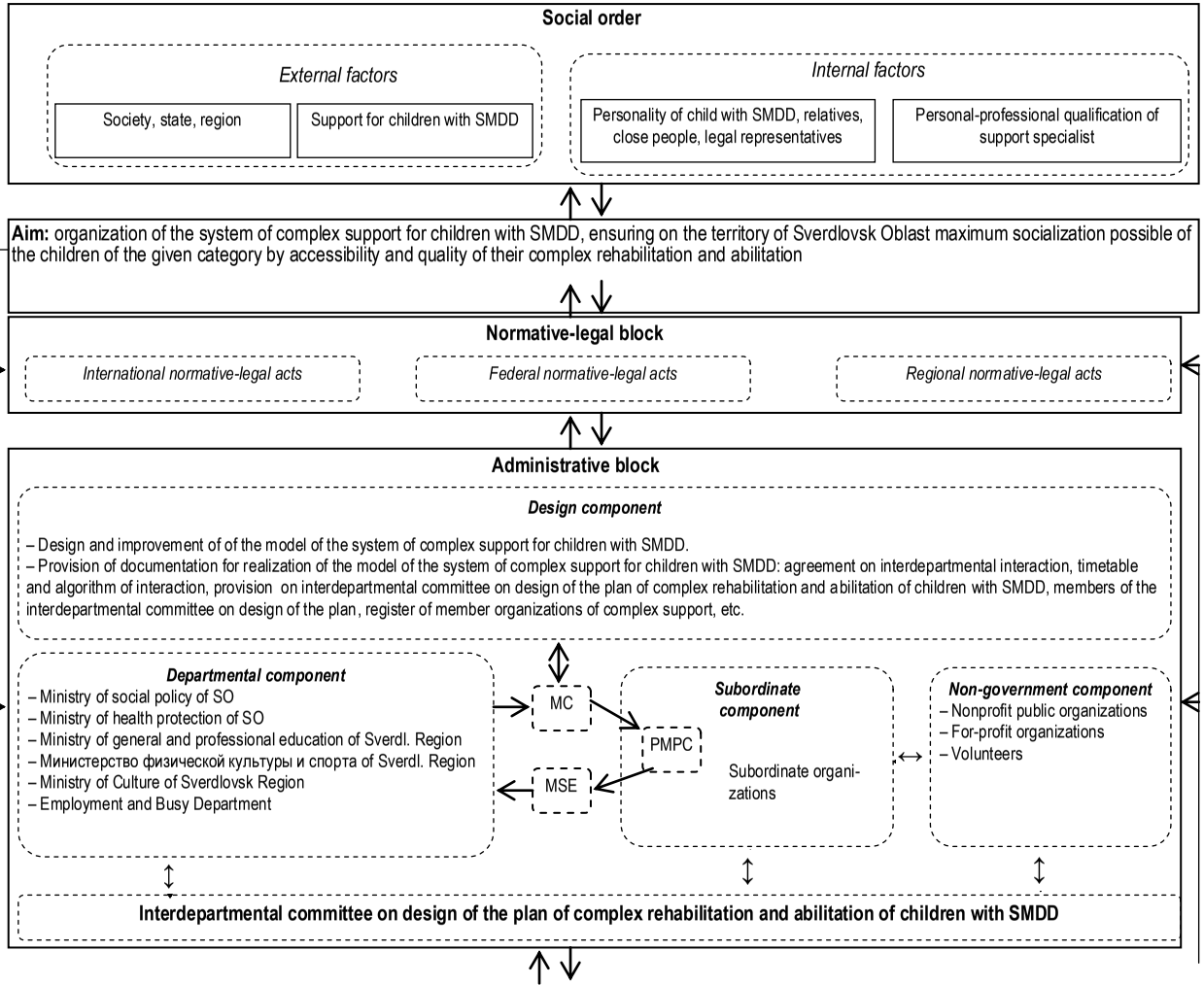
– to describe the aspect of organization and content of the model of the system of complex support for children with SMDD and its functional content;

– to work out and present the system of management assessment of the quality of complex support for children with SMDD and quality control of this activity as part of the work towards formulation of requirements to the module of automated information-analytical system.

On the basis of the analysis of normative-legal documentation, scientific-methodological research and national and regional experience [1; 2; 3; 5; 7; 9; 11; 13; 14; 15; 17], we have worked out an organization and content model of the system of complex support for children with SMDD *aimed at organization of the system of complex support for children with SMDD, enhancing socialization of the children of the given category via granting accessibility and high quality of their complex rehabilitation and abilitation.*

Complex rehabilitation and abilitation of children with SMDD includes medical, social, psychological, physical culture and sport, professional and other aspects which facilitate the realization of the main components of support: care, education, assistance and counseling. These four components make up the core of interaction with children with SMDD in the main spheres of life: board, education, work, spare time, etc. The actions of all people engaged in the work with the child should be coordinated. To this end, it is necessary to form a team of specialists taking into account the child's urgent needs, to discuss the activity of the members of the team, to determine the aims of rehabilitation work and its general and concrete tasks collectively.

The organization and content model includes the following interconnected blocks: normative-legal, administrative, system, and control and assessment blocks (see Fig. 1).


Social order
External factors
Society, state, region
Support for children with SMDD
Internal factors
Personality of child with SMDD, relatives, close people, legal representatives
Personal-professional qualification of support specialist
Aim: organization of the system of complex support for children with SMDD, ensuring on the territory of Sverdlovsk Oblast maximum socialization possible of the children of the given category by accessibility and quality of their complex rehabilitation and abilitation
Normative-legal block
International normative-legal acts
Federal normative-legal acts
Regional normative-legal acts
Administrative block
Design component
– Design and improvement of of the model of the system of complex support for children with SMDD.
– Provision of documentation for realization of the model of the system of complex support for children with SMDD: agreement on interdepartmental interaction, timetable and algorithm of interaction, provision on interdepartmental committee on design of the plan of complex rehabilitation and abilitation of children with SMDD, members of the interdepartmental committee on design of the plan, register of member organizations of complex support, etc.
Departmental component
– Ministry of social policy of SO
– Ministry of health protection of SO
– Ministry of general and professional education of Sverdl. Region
– Министерство физической культуры и спорта of Sverdl. Region
– Ministry of Culture of Sverdlovsk Region
– Employment and Busy Department
MC
MSE
PMPC
Subordinate component
Subordinate organi-zations
Non-government component
– Nonprofit public organizations
– For-profit organizations
– Volunteers
Interdepartmental committee on design of the plan of complex rehabilitation and abilitation of children with SMDD

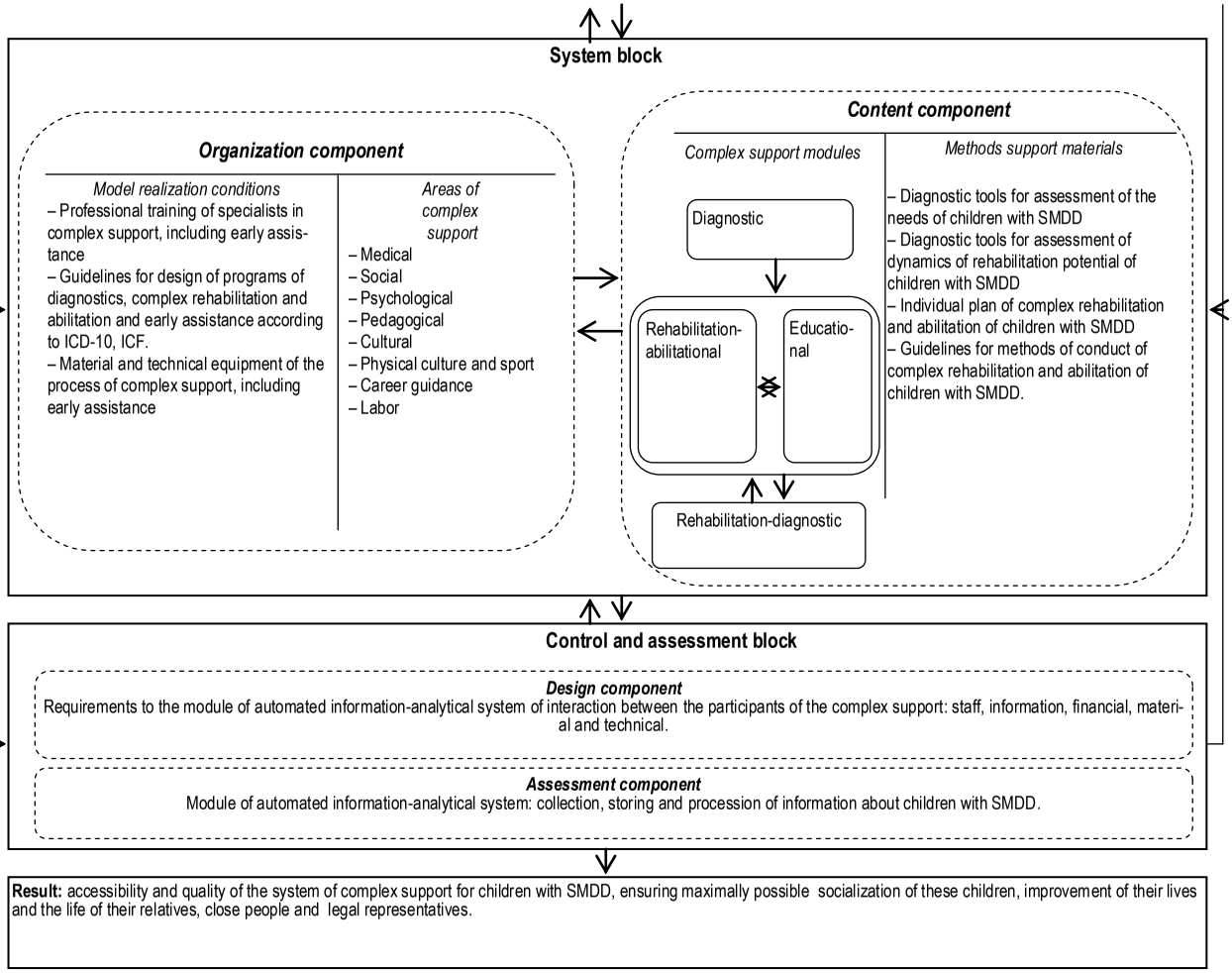


Figure 1. Organization and content model
of the regional system of complex support for children with SMDD

The normative-legal block is based on the analysis of the normative-legal documentation of the international, federal, and regional levels.

The administrative block contains the following interconnected components:

– design component (design and improvement of the model of the system of complex support, provision of documentation for its realization);

– departmental component realized by the ministries of social policy, health protection, general and professional education, physical culture and sport, culture and the department for employment of the population;

– medical commission making decisions on issues of medical rehabilitation and referral to psycho-medico-pedagogical commission (PMPC) and medico-social expertise (MSE);

– federal public institution "Chief Bureau of MSE";

– subordinate component (PMPC, subordinate organizations providing services of complex rehabilitation and abilitation);

– non-government component (non-profit and public organizations, for-profit organizations, volunteers).

The block designates authorities and zones of responsibility of the institutions taking part in the complex support for children with complex developmental disorders under the current legislation.

We have defined the main principles of interdepartmental interaction, which may include:

– the principle of complex and systemic approach to organization of the process of support for children with SMDD;

– the principle of voluntary participation in the processes of complex support for the children of the given category;

– the principle of confidentiality;

– the principle of granting equal opportunities of getting high quality rehabilitation and abilitation services.

The system block of the model is represented by interconnected components:

– organization component determining the conditions of model realization (professional training of specialists in complex support, including early assistance, presence of guidelines for design of programs of diagnostics, complex rehabilitation and abilitation and early assistance) and complex support areas (medical, social, psychological, pedagogical, physical culture and sport, cultural, career and employment);

– content component, based on distinction of the complex support modules (diagnostic, rehabilitation-abilitational, educational, rehabilitation-diagnostic) and their methods support materials (diagnostic tools for assessment of the needs of chil-

dren with SMDD, diagnostic tools for assessment of dynamics of rehabilitation potential of children with SMDD, individual plan of complex rehabilitation and abilitation of children with SMDD);

– guidelines for methods of conduct of complex rehabilitation and abilitation of children with SMDD.

The control and assessment block of the organization and content model of the system of complex support for children with SMDD contains:

– design component (requirements to the module of automated information-analytical system of interaction between the participants of the complex support);

– assessment component (module of automated information-analytical system ensuring interaction between the complex support participants, collection, storing and procession of information about children with SMDD).

The experience of design and testing of the organization and content model of the system of complex support for children with SMDD allowed us to formulate recommendations on its implementation in the following aspects:

– unification of terminological apparatus used by representatives of different departments and organizations;

– elaboration of regional legal documentation in the field of normative definition of the category of children with SMDD with the purpose of granting these children the rights to accessible and high quality complex support and legal regulation of interdepartmental interaction;

– enhancement of the educational mission targeted at translation of value-based attitude to the children of the given category into sociocultural environment, at prevention and propedeutics of severe developmental disorders among the population, and children's orphanhood by joint effort of the specialists, public organizations, parents, mass media, etc.;

– creation of the coordinating council for the development of a detailed plan of implementation of the suggested model and control of its execution;

– design and implementation of requirements to the organization of statistical registration of children with SMDD and computer-based systems of collection and control of information about these children;

– standardization and unification of the services of complex support for children with SMDD;

– preferential development of the systems of early complex support for children with developmental disorders;

– organization of an interdisciplinary scientific-methodological center for consolidation of effort and accumulation of information in the field of perfection of the methods of

differential diagnostics, rehabilitation and abilitation of children with complex disorders, specifically at an early age;

– intensification of activity of public organizations and charitable foundations for the benefit of children with SMDD and their parents (legal representatives).

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INCLUSIVE EDUCATION AT PRESCHOOL EDUCATION INSTITUTIONS UNDER THE CONDITIONS OF THE FSES FOR PRESCHOOL EDUCATION: PRACTICE, PROBLEMS, PERSPECTIVES

Abstract. The paper deals with the issue of creation of a complex of conditions (normative-legal, program-methodological, information-analytical, and staff) for the realization of inclusive education at a preschool education institution of the general type taking into account the Federal State Educational Standard for Preschool Education FSES PE), as well as the question of advantages and problems of realization of inclusive educational practice at a preschool education institution. The author provides a detailed description of the normative support for inclusive education at a preschool education institution, and of the basic principles and goals in designing inclusive educational environment for children with disabilities. The paper specifies stable tendencies in the all-Russian practice of inclusive education creation, which would allow administrators, specialists in methods and professionals working with the given category of children in kindergartens of the general type to figure out possible problems and perspectives in designing the given process at an education institution. The materials of the paper are theoretically and practically significant for administrators, specialists in methods and professionals working with children (teachers-logopedists, music teachers, pedagogues-psychologists, care givers, PT instructors, etc.) in realization of inclusive education of learners under the conditions of the FSES PE.

Keywords: inclusion; inclusive education; preschool children; preschool education institutions; inclusive educational space; special educational conditions; children with disabilities; SEND; disabilities.

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By the end of the 20th century, integrated education which is realized via creation of rehabilitation groups at general education schools and compensatory groups at general-purpose preschool education institutions becomes the leading strategy of teaching children with disabilities in the USA, Great Britain, Sweden and other countries. Practice shows that formation of such groups or classes leads to the exclusion of such children from the full social life of the school or kindergarten and creates problems for the formation of constructive communicative relations between children with disabilities and their typically developing peers and adults. The modern tendencies of special education focus on transition from integration to inclusion, i.e. joint teaching and upbringing of children with disabilities and their peers with typical development.

Inclusion guarantees involvement of each child in the education process via design and implementation of an adapted general education program which corresponds to the abilities and potential of the child with disability, and facilitates satisfaction of individual educational needs. Inclusion of the children of the given category is ensured also through creation of special conditions in accordance with the specific features of their psychophysical development.

The Federal law "On Education in the Russian Federation" interprets inclusive education as a guarantee of equal access to education for all learners taking into account diversity of their special educational needs and individual capacities [15]. The necessity to create equal starting opportunities for leavers of preschool education institutions, and specifically children with disabilities is stressed in the FSES PE [13].

In accordance with the normative-legal basis of modern inclusive education, mixed (inclusive) groups are formed on the application submitted by the parents (legal representatives) based on the conclusion of the psycho-medico-pedagogical commission. It should be borne in mind that observation of the child's interests should become the decisive criterion for making decision about inclusive education of the child, because inclusion is not "favorable" for all children with disabilities [10].

The total number of learners in an inclusive group has been reduced. Two thirds of the group members should be children with the level of psychophysical development corresponding to the norm, and one third is to be made up of children with a disability (for example, with musculoskeletal, intellectual, auditory or visual disorder), or of children at an early age with-

out marked primary deviations in development but lagging behind the age-related norm (including children with disorders of the emotional-volitional sphere).

The maximum number of children in an inclusive group is determined with reference to the age (younger than 3 years and older than 3 years) and the category of the children with disabilities. Within the age-related category "younger than 3 years of age", 10 children are enrolled in an inclusive group, including not more than 3 children with disabilities.

Children older than 3 years of age are grouped in the following way:

– 10 children, including not more than 3 deaf children, or blind children, or children with musculoskeletal disorders, or children with moderate or severe intellectual disability, or children with multiple defects;

– 15 children, including not more than 4 children with poor vision and/or children with amblyopia and strabismus, or children with impaired hearing, or children with severe speech disorders, or children with mild intellectual disability;

– 17 children, including not more than 5 children with disorders of psychological development [12].

Inclusive groups may comprise children with auditory, visual, speech and musculoskeletal disorders, intellectual disability, disorders of psychological development, behavioral disorders, as well as children with multiple disorders of psychophysical development.

Creation of inclusive educational environment rests on the principles of interdisciplinary, individual approach, social interaction (active inclusion of all participants of the education process in rehabilitation-educational work), variability, module organization of educational programs, and the principle of family-oriented support.

Under the FSES PE, the content of rehabilitation work and/or inclusive education should be included in the educational program of a preschool institution. Educational activity in inclusive groups is based on a number of extremely important conceptions which should be accepted by all subjects of the educational space (school administration, pedagogues, specialists and parents). The pivotal conceptions consist in recognition of the value of a person irrespective of their abilities and achievements, the person's need for communication, friendship, all-round development, etc. [5].

Nevertheless, it is necessary to remember that while creating special conditions for "special" children, we must not violate the principle of equal right for the other children attending the inclusive group. Inclusive approach should presuppose a possibility to change the educational situation, to create

new forms and methods of organization of the education process, which would take into consideration individual personal properties of all pupils. In order to manage the inclusive processes in the group, we should use command forms of interaction, carry out timely diagnostics and monitoring of inclusive processes, take into account interests of the children with disabilities and those of the typical children, of the parents, pedagogues and administration. Unfortunately, there are no legal documents yet which would regulate the activity of inclusive groups in maximum detail and clarity.

Analyzing the modern normative-legal basis, we can single out the following most significant conditions for inclusive practice realization in the general-purpose preschool education institution:

– professional qualification of the pedagogues and specialists realizing the inclusive approach;

– organization of the adapted developing object-oriented space of the education process;

– organization of efficient relations between all participants of the education process, and inclusion into this process of the parents of children with disabilities in the first place.

To create a complex of conditions for inclusive education in a preschool education institution it is necessary to work out:

1) normative documentation (provision on enrollment of children with disabilities in inclusive preschool education institutions; provision on monitoring learning abilities of children with disabilities in inclusive education institutions; guidelines for design of individual educational plans and variable educational programs; local acts on psycho-pedagogical support and council of preschool education institution);

2) staffing strategy (creation of a team of specialists capable of solving the problems set and working towards achieving the desired results);

3) organization-methodological materials (differential educational plans and adapted educational programs with reference to types of disability; individual educational plans and variable educational programs for children with disabilities; plans of pastoral activity in the group; advanced training of pedagogues);

4) psycho-pedagogical support (special psycho-pedagogical support (teacher-logopedist, pedagogue-psychologist, defectologist, physiotherapy instructor, etc.); tutor support; organization of the work of psycho-medico-pedagogical council of the preschool education institution; development of tolerant relations and interaction;

5) principles of creation of the adaptive educational environment of the preschool education institu-

tion (accessibility of playing and other rooms (removal of barriers); technical means of granting comfortable access (assisting means and technologies); rehabilitation-educational subject-based environment for upbringing, education and socialization; rooms (zones) for recreation, restoration of working capacity and health-promotion);

6) information support (propagation of ideas of inclusive education across the surrounding community).

Thus, inclusion of children with disabilities in the education process of a preschool education institution needs changes in the organization of the entire pedagogical activity of the institution: it is necessary to study and implement new forms, conditions and methods of organization of the education process with reference to the individual peculiarities of children. Such modernization requires creative contribution of every participant of the education process – pedagogues, parents, children and administration.

Analyzing the modern practice of inclusive education, we can single out the following advantages of this system. First, it is favorable for the children with disabilities because their level of development improves in all spheres. Typical peers serve for them as examples; new habits and skills are acquired functionally; and learning is supported by the safe personal qualities.

Children growing in correspondence with developmental norms begin to realize that all people are different; this situation initiates tolerance and develops skills to establish and maintain friendly relations with the people who differ from them and the ability to sympathize and cooperate, and develops a creative approach to life.

For the pedagogue, inclusion has a positive impact as it makes them master new pedagogical methods taking into account individual personal properties of children. Pedagogues begin to better understand the individual personal properties of children, their perception of children becomes more holistic, and they develop empathy and reflection.

The preschool education institution realizing inclusive practices should be ready for certain difficulties. While organizing activity aimed at creation of inclusive educational space, pedagogues come across:

– absence of reliable technologies of design of individual educational routes for children with disabilities;

– negative attitude of the parents of typically developing children to the presence of children with disabilities in the group;

– low level of information of the population about the inclusive education opportunities;

– absence of experience of creation of inclusive groups where chil-

dren with disabilities can stay the whole day or part of it;

– absence of a system of gradual inclusion of children with disabilities in a group of typically developing children;

– absence of a system of training specialists to teach typical children to interact with children with disabilities.

In terms of management organization, there emerge problems with inadequate interaction between the specialists belonging to different departments and agencies, therefore it is essential to consider the existing regional experience of interdepartmental interaction, and specifically the one accumulated in Sverdlovsk Oblast [9; 14].

The information support of inclusive education needs more intensive participation of the mass media, public organizations and workers of art to form tolerance with reference to persons with disabilities in the society.

As a result of solution of the abovementioned problems, inclusive education may facilitate socialization, support for personal development and formation of preconditions to learning in preschoolers with disabilities.

By way of summing up, we would like to note that today it is possible to single out several stable tendencies in the development of inclusive education of children with disabilities. First, we can see the growing number of children with disabilities in the inclusive educational environment due to the increase of the number of children with severe developmental disorders, as well as children at an early age with developmental problems or the risk of their emergence. Second, innovative variable forms of preschool education for children with disabilities between the ages of 2 months and 7 years are being developed, in which inclusion can be full or partial, systematical or temporary. Implementation of various models of provision of early assistance to children with disabilities (according to departmental belonging or kind of disability), creation and functioning of short-term groups "Special Child", and the work of the Russian Lecotheque are exceptionally important.

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PATHOGENESIS OF MENTAL UNDERDEVELOPMENT IN HEREDITARY DISEASES ACCOMPANIED BY BRAIN LESIONS

Abstract. On the basis of clinical experience and materials of special literature, it is traditionally suggested to single out three groups of pathogenetic factors of mental underdevelopment in hereditary diseases. These factors may include structural lesions of the brain, metabolic disorders or epileptic processes. In structural disorders of brain development of hereditary genesis, the pathological change of brain formation, complicating its normal functioning, is the main pathogenetic factor of mental underdevelopment. In metabolic genetic diseases (hereditary metabolic disorders) brain lesion is associated with toxic effect of some neurometabolic drugs and deficiency of others. In monogenic idiopathic epilepsies, epileptic seizures and/or prolonged epileptiform (between seizures) activity emerging on the electroencephalogram of the developing brain may lead to the formation of "epileptic developmental encephalopathy". Pathogenetic variants of mental underdevelopment should be taken into account while planning medical and rehabilitation activities. In hereditary diseases, a combination of these three factors in different variants is often observed, for example, in phakomatoses, and specifically in cases of tuberous sclerosis, the existing structural brain lesion is, as a rule, accompanied by symptomatic "structural" focal epilepsy, aggravating mental development. To prescribe adequate treatment, make plausible prediction and prevent birth of sick siblings in the family, it is extremely important to determine the right nosological form of the hereditary disease, to confirm it with laboratory tests, and not simply state the presence of "genetically determined syndrome" in the child.

Keywords: hereditary diseases; nervous system; mental underdevelopment; pathogenetic factor; metabolic genetic diseases; monogenic idiopathic epilepsies.

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As is known, hereditary diseases [6, p. 936] are one of the main causes of the psychological underdevelopment syndrome, or inherited intellectual disability (oligophrenia).

It should be stressed at once that the popular conception of hereditary diseases as "those passed down from the parents" is not exact enough. It would be more correct to say that hereditary diseases are disorders caused by mutation ("breakdown") of the genetic material of gametes (sex cells) and inherited from the parents. "Breakdown" of the genetic material takes place in the chromosomes, nuclear DNA genes, or mitochondrial DNA. But the parents and other relatives of the patient may be healthy, and may not carry the mutant gene in the case if the "breakdown" takes place directly in the sperm cell or ovum of the child's parents – the so-called sporadic mutation *de novo* (new random mutation). For example, about 80% of the cases of Rett syndrome (RTT), coming second (after Down syndrome) among hereditary cases of intellectual disability in girls, are brought about by mutation *de novo of the* MeCP2 gene situated in X-chromosome [11].

Moreover, many forms of hereditary intellectual disability are passed by a complex non-Mendelian inheritance method, when it is next to impossible to trace genetic predisposition across generations. Thus, Fragile X syndrome (FXS), coming second (after Down syndrome) among hereditary cases of intellectual disability in boys, refers to the "trinucleotide repeat expansion" diseases [12]. Expansion (from Latin *expansio* – increase in size, number, etc.), i.e. increase of the number of nucleotide repeats in generations after meiosis, leads to the phenomenon of anticipation (Latin *anticipatio* – premature assumption) when increase of the number of trinucleotide repeats predetermines more severe manifestations of the disease in children and grandchildren in comparison to the older generation.

A number of well-known cases of Angelman syndrome (AS) and Prader-Willi syndrome (PWS) accompanied by psychological underdevelopment are not caused by gene

mutation directly but by epigenetic factors, specifically by the "uniparental disomy" phenomenon when a diploid offspring reveals homologous chromosomes of singular (maternal or paternal) origin [4, pp. 9-14].

We believe that pathogenesis of psychological underdevelopment in hereditary diseases may be associated with three groups of pathogenetic factors: structural lesions of the brain, metabolic brain disorders and epileptic processes. Detailed clinical and paraclinical examination with obligatory inclusion of neurovisualization (preferably magnetic resonance imaging of the brain) and electroencephalography (preferably not only in wakefulness but also during daytime and nighttime sleep) should be carried out to distinguish these groups.

In structural defects, i.e. congenital disorders of brain development of hereditary genesis, the pathological change of brain formation, complicating its normal functioning, is the main pathogenetic factor of psychological underdevelopment. This may be illustrated by the cases of neuronal migration disorders, such as heterotopias (from Greek *heteros* — "other" and *topos* — "place") of the grey matter, when the major part of neurons stays in the periventricular (around the ventricle) brain region (without reaching the cortex), and lissencephaly (which means "smooth brain" in Greek), when the brain remains "smooth" due to the absence of normal convolutions [1, pp. 183-232].

In metabolic genetic diseases (hereditary metabolic disorders) brain lesion is associated with toxic effect of some neurometabolic drugs and deficit of others. This situation can be illustrated by well-known phenylketonuria, previously known as "phenylpyruvic oligophrenia" [10]. In phenylketonuria, the child's organism accumulates phenylalanine and its products, specifically ketoacids (phenylpyruvic acid, phenylacetic acid, and phenyllactic acid) producing toxic effect upon the brain and preventing transformation of tryptophan into serotonin. The deficit of tyrosine, from which thyroxine and catecholamines, specifically the dopamine neuromediator are synthesized in normal development, is none the least important.

Early diagnostics of metabolic hereditary diseases and their pathogenetic treatment, in the cases when it has been worked out, and diet therapy give a chance to normalize the psychological status. Thus, prescription of biotin in biotinidase deficiency [3, pp. 71-74] in all cases under examination has lead to full recovery from "metabolic encephalopathy".

In monogenic idiopathic epilepsies, epileptic seizures and/or prolonged epileptiform (between seizures) activity emerging on the

electroencephalogram of the developing brain may lead to the formation of “epileptic developmental encephalopathy” [7; 13]. We can illustrate it by Dravet syndrome [9] and other “epileptic encephalopathies of infancy”, which, in spite of the absence of significant structural and metabolic brain defects, are accompanied by arrested psychological development, and sometimes even by loss of habits acquired before. In this case, it is only the selection of effective anticonvulsant therapy, sometimes in combination with immunotherapy with the help of glucocorticoids and special ketogenic diet that gives a possibility to avoid formation of the psychological underdevelopment syndrome.

In hereditary diseases, a combination of these three pathogenetic factors in different variants is often observed, for example, in phakomatoses, and specifically in cases of tuberous sclerosis [2, pp. 27-31], the existing structural brain lesion is, as a rule, accompanied by symptomatic “structural” focal epilepsy, aggravating psychological development. In hereditary metabolic diseases, the primary metabolic defect may lead both to secondary, mostly atrophic changes in the brain and to symptomatic “metabolic” focal epilepsy [5, pp. 31-34].

In conclusion, it should be noted that to prescribe adequate treatment, make plausible prediction and prevent birth of sick siblings in the family, it is extremely desirable to determine the right nosological form of the hereditary disease, to confirm it with laboratory tests, and not simply state the presence of “genetically determined syndrome” in the child.

Thus, various factors (structural, metabolic and epileptiform) or their combination may play a certain role in the pathogenesis of disorders of psychological development, which should be taken into account while planning therapeutic and rehabilitation activities.

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ARTICULATION AND ITS DISORDERS (A THEORETICAL STUDY FROM THE POSITION OF NEUROPSYCHOLOGY)

Abstract. The article analyzes the causes of differences in acquisition of articulate speech in preschool children (aged from 1 to 6 years). The analysis has been performed from the positions of neuropsychology on the basis of generalization of the data from the literature on the topic and the author's own experience of many years. It is shown that rearticulation and spontaneous articulation are different kinds of speech. The author stresses that articulation is effected by different levels of brain structure. Rearticulation is realized by the secondary (gnostic-praxic) cortex of the brain, and spontaneous articulation — by the tertiary (symbolic, linguistic) one. Accordingly, the first kind of articulation refers to the phonetic level of the speech functional system, the second one — to the phonemic (phonological) level. The article shows that the levels of acquisition of phonetic and phonemic articulation do not always coincide. Consequently, we may observe dissociations: the child is able to repeat words, and cannot articulate them spontaneously. Reverse cases, when the child is able to produce spontaneous articulation but cannot repeat words, are possible but less typical. However, they are less common. The suggested approach made it possible to arrive at the following conclusions: a) about the specificity of development of articulation skills and about the peculiar character of the children's expressive speech; b) about the main algorithms of speech acquisition at different stages of speech development. The article includes illustrative material in the form of clinical observations. They carry the main anamnestic information, describe the behavior of the child during consultation, and the general state of their speech and articulation skills. The article contains analyses of clinical statuses of children and their speech diagnoses.

Keywords: children's speech; speech absence; preschool logopedics; preschool children; articulation; spontaneous articulation; neuropsychology; articulate speech.

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Problem statement. Within the framework of traditional neurology, the notion of praxis formulated by H. Liepmann [15] is widespread. Further developing the theory of H. Liepmann, A. R. Luriya [9] singled out two kinds of articulation praxis: afferent praxis and efferent praxis. Afferent articulation praxis (AAP) is associated with the secondary areas of the *parietal* cortex of the left hemisphere; efferent articulation praxis – with the secondary areas of the *premotor* cortex of the same hemisphere (Fig. 1).

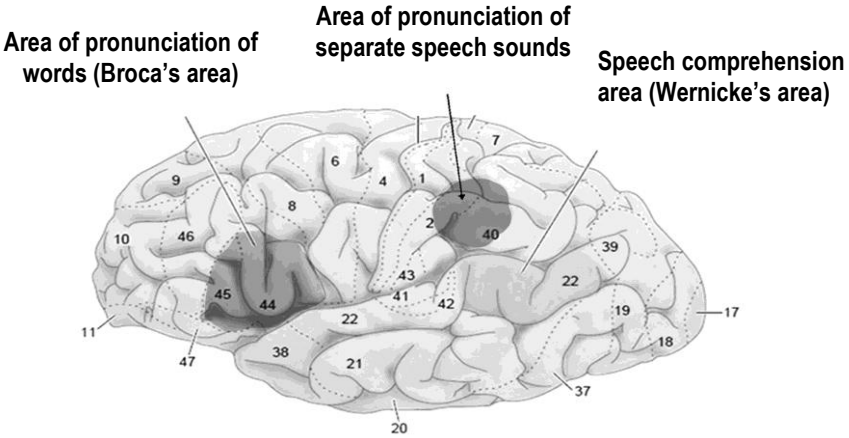

Figure 1. Main *brain regions* involved in *language* processing

In spite of the fact that the abovementioned functions have been studied well enough, special literature *does not give proper attention* to the idea that utterance articulation is effected on two different levels of speech, and specifically on the level of *rearticulation* and the level of *spontaneous* speech. Essential differences between their linguistic specificity and brain organization are not emphasized in literature. Meanwhile, it is beyond doubt that there is principal distinction between linguistic and neuropsychological essence of rearticulation and spontaneous speech and, respectively, between the brain mechanisms involved in their realization.

In view of the above, it is necessary to specify that the child acquires articulation as the necessary component of any oral speech both on the basis of verbal auditory gnosis (*rearticulation*) and on the basis of phonemic competence, in neuropsychology referred to as phonemic awareness (*spontaneous* speech). It is quite clear that these are different phenomena. In order to repeat a speech sound or a word, even without understanding it, it is enough to hear it (distinctly) and then to translate it into articulatory movements. But in order to pronounce a word spontaneously, without repeating it after somebody else, it is necessary to have a certain idea about its phonemic composition. Each articuleme in the word pronounced spontaneously plays a certain semantic role, and is, therefore, an equivalent of a phoneme. The phoneme can be translated into a letter, if the word is realized in the written variant of speech, and not in the oral one. A letter is also an equivalent of a phoneme. This allows stating the following: in word rearticulating, articulemes are phonetic units (provisionally – units of speech), and in pronouncing the word spontaneously, articulemes are phonemic units (provisionally – units of language).

Based on what has been said above, it seems important to note the following. The child acquires speech by ear, but in an unconscious and conscious utterances hearing plays different roles. Articulation without the auditory images of speech sounds and words, i.e. in utterances produced on one's own, are more likely to be called spontaneous articulation (SpArt). Such consideration "distracts" from the purely praxical essence of the speech motor act, which goes beyond the frames of articulatory movements proper and serves the task of transfer of the *sense* of the pronounced entity.

Without taking into account the differences between articulation operations in these kinds of speech, it is impossible to understand the specificity of various articulation disorders, and specifically why in clinical practice we come across: a)

children who understand words and repeat them, but cannot pronounce words spontaneously; b) children who understand words, can say some of them on their own, but cannot repeat them (seldom!).

This fact is paid no attention to in literature, and it is only natural that the question about the causes of the discussed *dissociations* in acquisition of articulation skills is left beyond the scope of special research. Meanwhile, their discovery is of prime importance both for neuropsychological and neurolinguistic understanding of the phenomenon of articulation as a kind of speech and its disorders. It is equally significant for the choice of ways of correction of articulation defects.

Peculiarities of brain organization of the aspect of speech articulation.

According to N. A. Bernstein [1], higher psychological functions (HPF) are governed by two levels of brain organizations, which he called gnostic-praxical (level D) and symbolical (linguistic – level E). Such functional differentiation of the given levels is also supported by the founder of neuropsychology A. R. Luriya [9]. As follows from the terms themselves and their generally accepted interpretations, speech on the gnostic-praxical level (rearticulation) is limited to perception and reproduction of speech acts and does not spread upon their semantic component; on the symbolic, linguistic level speech acts (spontaneous speech) are performed in order to extract *meaning* from the utterance perceived or to express though in the word. In her book "Developmental Phonetics" [6], E. N. Vinarskaya writes: "… it is desirable to have "two sciences about sounds"; one of them would focus on speech, the other – on language. This corresponds to the view of speech sounds as phonetic and phonemic units by the founders of phonology S. V. Knyazev [8] and N. S. Trubetskoy [13]. Keeping in mind periodization of child development, this position should be complimented by the assumption that *in each developmental period* there is *its own phonetics and its own phonology*" [6, p. 8]. As we see, E. N. Vinarskaya, the same as many contemporary linguists, correlates phonetic system with *speech*, and phonemic system – with *language*.

The suggested division of articulation skills as belonging to rearticulation and spontaneous speech seems to be absolutely imperative and highlighting many previously fuzzy phenomena of speech disorders, and not only in children but also in adults with aphasia. This idea was expressed by the author in her earlier publications [4; 3; 2].

Articulate speech disorders and their brain mechanisms. Articulation disorders have different manifestations at each stage of on-

togenesis. Articulate speech development periodization used in the given paper is based on the literature on speech ontogenesis [7; 10; 14; 12], as well as on the assumption that the child must have a well-formed functional basis of speech (thinking, memory, attention). This has been shown in another work written in co-authorship with O. Yu. Tsvirko [5]. It is quite evident that pathological conditions of the vocal apparatus muscles (paralyses, pareses) should be also excluded.

The results of our observations show that the inability to articulate in children of different ages acquiring speech can be *primary* and can belong to the following kinds:

– total absence of articulate speech;

– partial presence of rearticulation with absence of ability to speak on one's own;

– dissociated state of articulate speech, when rearticulation is impossible, and fragments of independent (spontaneous) speech may be present.

As a result of our search for the reasons of these variants of disorders we have found out that they might be attributed to two main factors: 1) poor formation of the primary functions, specific for the ability to articulate – auditory verbal gnosis and phonemic awareness; 2) disruption of *ties* between the areas which should be specialized in the given period of verbal speech development. Below, these two causes will be dealt with in detail with relation to each variant, including the ties between brain hemispheres.

The table indicates the stages of expressive speech development and includes disorders characteristic of each of them.

The table shows that four stages of speech development are supported by the gnostic-praxical level of brain organization of speech function, and the fifth level – by the higher symbolic (linguistic) level.

Let us dwell in more detail on most informative clinical variants of expressive absence of speech.

Table.

Kinds of "expressive" absence of speech

Stage of speech development	Kind of articulate speech disorder	Disorder variants and their brain mechanisms
I. Beginning with 5-6 months	Absence of cooing, babbling	Poor state of reflective sphere (cooing) and ability to listen to the speech of surrounding people (babbling)
II. By 9-11 months	Absence of onomatopoeias	First — non-verbal auditory agnosia; second — inadequacy of interzonal ties between the auditory area of the right hemisphere and the speech motor secondary parietal cortex of the left hemisphere
III. (about 1 year)	Absence of onomatopoetic words	First — verbal auditory agnosia; second — inadequacy of interzonal ties between the secondary temporal auditory area of the hemisphere and the speech motor secondary parietal cortex of the left hemisphere
IV. Beginning with year 1	Absence of ability to repeat words	First — verbal auditory agnosia — 2; second — inadequacy of interzonal ties between the second temporal auditory area of the hemisphere and the speech premotor cortex of the left hemisphere
V. Beginning with year 1.5	Absence of ability to say words spontaneously	First — inadequate level of formation of phonemic awareness; second — inadequacy of ties between the *tertiary* temporal cortex and speech premotor area of the left hemisphere

Variant 1. Total inability to articulate

Clinical example1: Boy G. 4.5 years of age. Complaints: absence of speech with ability to understand it.

Anamnesis. The data about the perinatal period contain separate records about mild symptoms of intracranial hypertensia.

According to the parents, in infancy there were no significant deviations in motor development and non-verbal sphere, but own articulate speech did not emerge in due time. Speech comprehension developed without deviations.

At the consultation. The child has well-balanced body build, is flexible and active. Gets in productive contact: performs tasks connected with constructing and other

non-verbal actions on the object-oriented level quickly and correctly. Points at objects named. He does everything without verbal comment. Does not answer questions, even the simplest ones. He is rather active in non-verbal occupations: easily passes from one game to another without losing interest in what he is doing and making actions look complete.

The specific feature of the case is the child's inability to arbitrarily perform any tasks referring to the sphere of praxis. The simplest communicative and semantic gestures have not been formed in the hand and finger praxis: the child cannot reproduce the needed postures even by imitating. He ignores them completely, the same as verbal comment, even onomatopoetic one. Lately, we have noticed only humble attempts to imitate the "voices" of some animals. Enhanced, expressive stimulation of production of visual and acoustic images of gestures (mimetic actions) by the experimenter is, as a rule, unsuccessful. It was impossible to make the child produce even a pointing gesture during examination.

A similar picture was observed in oral praxis: arbitrary control of oral organs is absolutely absent (with the necessary muscular potential present). The child cannot even perform the task of blowing a piece of paper off the palm.

Analysis. The total amount of the symptoms revealed allows us to come to the conclusion that the child suffers from severe expressive absence of speech demonstrated on the background of a "break" in ontogenetic development of the gestural-mimetic and intonational-prosodic phase of communication with the surrounding people. Inadequacy of conducting systems connecting the acoustic (secondary temporal) cortex and the articulatory (secondary speech motor) cortex, both afferent and efferent ones, is, evidently, the brain mechanism causing the expressive speech disorder.

Variant 2. Rearticulation is present, spontaneous articulation is not observed

These children do not understand speech addressed to them (or understand it to a very limited degree), but rearticulate extremely easily in the form of echolalias. Inability to express thoughts verbally and, consequently, inability to take part in verbal communication acts made us refer them to the category of non-speaking children.

Clinical example 2: Boy M., 3.5 years of age, consulted in connection with complaints on absence of speech.

Anamnesis. Pregnancy without complications. Birth by planned caesarean section. The child was born with anal atresia and had sur-

gery on the third day. Later he had three more operations for the same condition (the last one at 7 months of age). Troublesome. Infancy was characterized by delay of psychoverbal development noticeable to the parents. At present, the child attends the development center for children with autism spectrum disorder (ASD). The parents report improvement of his behavior: he has become interested in cartoons, pictures in books, etc.

At the consultation. Visually registered strabismus and skull deformation: excessive thickness of temporal bones and expansion of parietal bones, and flat occiput. The latter is attributed by the parents to lying much on the back in the postsurgery periods.

Figure 2. Inability to rearticulate (repeat) words

Figure 3. Inability to articulate words spontaneously (on one's own)

The boy's behavior at the consultation is adequate. Gets in productive contact. Shows interest in tasks. Interacts with the specialist. His movements are clumsy. Can hardly hold a pencil in his hand.

Conduct of diagnostics of psychological development is complicated. We could only state that he understands familiar words well (points at pictures when hears a word). This allows us to suppose primary safety of verbal thinking.

Independent speech is characterized by babbling. Speech activity is reduced. Systemic kinesthetical apraxia is revealed: oral, hand, and finger. Absence of onomatopoeias may be due to articulation apraxia.

Analysis. Considerable delay of general motor and speech development based on severe systemic apraxia. Secondary disorder of psychological development.

Variant 3. Rearticulation is absent, spontaneous speech is partially present

Speech comprehension in the children of this group is partially limited. They cannot repeat speech sounds and words, but try actively to produce spontaneous speech. The latter mostly consists of words incomprehensible to other people ("own lingo"), having peculiar intonation, and granting no chance to express thought verbally. All this, the same as absence of speech in variant 2, prevents the children from verbal communication and serves as a basis for referring them to the category of non-speaking children.

This variant of speech absence is the rarest one. It refers to the group of dissociated according to the peculiarities of speech development. It may be explained by the phenomenon of hypercompensation due to which the processes of spontaneous rehabilitation of the speech defect take the child up to a higher hierarchical level of brain organization of speech. As a result, the symbolic (linguistic) level is included in speech bypassing the gnostic-praxical level typical of gradual speech acquisition. Inadequacy of the processes of speech and word gnosis, which is manifested by inability to repeat verbal stimuli, prevents children from finding the articulemes equivalent to the sounds pronounced, and they try to "invent" their own ones. Practice shows that the children of this group are quick-witted and active, especially in their verbal behavior.

Due to a change of views on the brain mechanisms of various forms of aphasia undertaken by the author lately [13; 10, p. 36-46; 14, p. 1316], the given variant of speech absence may be correlated with aphasia which is part of the classical neurological classification of Lichtgaim-Wernice and is called "conduction aphasia" in it.

Clinical example 3: Boy A., 4 years of age, consulted in connection with complaints on developmental speech disorder. Family left-handedness (mother is left-handed), but the dominant eye is the right one.

Anamnesis (according to mother). Pregnancy and birth without complications. Number of points on the Apgar score is 8/9. He gave his first cry on time, feeding was active. Infancy: cooing and babbling on time. Speech developed according to the norm up to one year. At the age of one he got a terrible fright, and speech stopped developing. Before this consultation, the neurological diagnosis was: disorder of psychological development. He undergoes cortexin therapy regularly once every three months.

At the consultation. The boy is active; the behavior is adequate. Gets in productive contact. Smiles often. Assembles frames and stacking toy according to his age. Judging by these skills and other nonverbal actions, his cognitive development, and specifically thinking, is primarily intact.

The child comprehends speech and performs oral instructions.

He points at object-based pictures but does not name the objects shown in them. His own speech is presented by separate specific sound complexes resembling Russian words in their general prosodic pattern ("own lingo"). Some of them can be related with certain objects. The child's utterances are accompanied by adequate gestural-mimetic actions.

Oral praxis is severely disabled. The same as articulatory praxis. In addition, there are disorders of hand and fingers kinesthetic praxis. Can produce onomatopoeias. The boy performs rhythm reproduction tests. He comprehends the meaning of plot-driven pictures.

Analysis. Expressive alalia based on systemic disorders of praxical articulation sphere. The specificity of the case consists in hypercompensation of the speech defect by inclusion of the symbolic (linguistic) level of the brain organization of speech.

The examples described do not make up a complete list of variants of articulation disorders, but are the most illustrative ones in terms of theory and practice of the study of children's speech development.

Conclusion. The approach to the issue of expressive absence of speech suggested by the author of the given study allows coming closer to the end of the discussion, which has been carried on for years, about the relevance of the term *motor alalia*. The beginning of the discussion can be related to the conception of alalia by V. K. Orfinskaya, who distinguished linguistic alalia alongside gnostic-praxical one [11]. The supporters of exclusively linguistic nature of

alalia and aphasia, whose views have been shared by the author of the given paper until lately, challenge the given theory with conviction arguing that linguistic alalia as a phenomenon of speech disorder cannot have agnostic or apraxical nature. They explain it by the fact that such functions as gnosis and praxis do not belong to a linguistic level, but are sure to have salient prelinguistic significance. Nevertheless, the observations provided in the given paper demonstrate that this statement does not refer to all kinds of articulatory activity. Articulation, consisting in recoding of articulemes into *phonemes* (units of exceptionally linguistic level) can be reasonably referred to linguistic level operations. Thus, the variants of expressive alalia, in which speech comprehension is intact and rearticulation is impaired, may be considered as severe absence of speech (alalia) of the type of articulation apraxia, and the variants in which rearticulation is present but spontaneous speech is absent – as absence of speech (alalia) of linguistic nature.

A similar train of reasoning can be used to resolve the problem of the discussion (by A. R. Luriya and E. N. Vinarskaya) on the subject of legitimacy/illegitimacy of distinction of motor aphasias.

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A REVIEW OF THE BOOK BY M. G. KHRAKOVSKAYA "APHASIA. AGNOSIA. APRAXIA. REHABILITATION TECHNIQUES" (2017)

Abstract. A review of the book by M. G. Khrakovskaya *Afaziya. Agnoziya. Apraksiya. Metodiki vosstanovleniya* [Aphasia. Agnosia. Apraxia. Rehabilitation Techniques]. SPb.: Nestor-Istoriya, 2017, 309 pp.

"Aphasia. Agnosia. Apraxia. Rehabilitation Techniques" by M.G. Khrakovskaya appeared in print in 2017. The author is a speech and rehabilitation therapist, a neuropsychologist with over 50 years of practical clinical and scholarly experience and a PhD in Psychology. She has also authored special courses *Aphasiology* and *Neuropsychology in Practical Speech Therapy* for undergraduate students of special pedagogy feculties and for participants of advanced training courses. Ms. Khrakovskaya was the initiator and, since 1989, has been supervisor of the on-going St. Petersburg Workshop "Neuropsychology and Speech Therapy. Theory and Practice".

The monograph opens with a review of various aspects and modern trends of rehabilitation practices in both Russia and worldwide (Chapter I), and then goes on to present the author's own research results and guidelines in methods of teaching: *Writing Skills Rehabilitation* (Chapter II); *Specifics of Thinking Disorders and Rehabilitation in Patients with Aphasia* (Chapter III); *An Original Approach to Speech System Rehabilitation in Patients with Semantic Aphasia* (Chapter IV); *Calculation Abilities Rehabilitation in Patients with Acalculia* (Chapter V); and *Gnostic Functions Rehabilitation in Patients with Occipitoparietal Focal Lesions* (Chapter VI). The author also shares her original experience of the development and application of a specific method for quantitative assessment of neuropsychological examination results of focal brain lesion patients. The original assessment system, suggested by the author, is skillfully combined with a set of diagnostic tests for examining aphasia, agnosia, and various types of apraxia patients in consistence with A. Luria's approach. This opens up a way to measure the severity of a disorder both based on individual symptoms of a syndrome and on the syndrome in its totality, as well as to gage positive changes in the

structure of the damage throughout the therapy. The authored techniques in methodology make it possible to activate the deficient functional system as a whole by capitalizing on its relatively unaffected segments instead of concentrating on restoration of the damaged segment, as is traditional for other rehabilitation training methods. This involves activation of the properties established and automated in adults and specific features pertaining to each of the targeted psychological functions — writing, calculation, mentation, and speech in patients with semantic aphasia. All the proposed techniques imply "by-passing" the central defect in order to address the relatively intact or easier recoverable psychological function levels. The rehabilitation methods are aimed at creating, and capitalizing on, conditions wherein the affected functions are activated by means of patients gradually progressing from simpler to increasingly more complicated tasks. These "gentle" techniques have helped a majority of the author's patients to restore their speech and other psychological functions and return to normal professional activities.

Keywords: aphasia; agnosia; apraxia; logopedics; higher psychological functions; neuropsychology; aphasiology; restoration of higher psychological functions; authored methods; review.

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The book "Aphasia. Agnosia. Apraxia. Rehabilitation Techniques" by M.G. Khrakovskaya appeared in print in 2017. The author is a speech and rehabilitation therapist, a neuropsychologist with over 50 years of practical clinical and scholarly experience and a PhD in Psychology. She has also authored special courses *Aphasiology* and *Neuropsychology in Practical Speech Therapy* for undergraduate students of special pedagogy faculties and for participants of advanced training courses. Ms. Khrakovskaya was the initiator and, since 1989, has been supervisor of the on-going St. Petersburg Workshop "Neuropsychology and Speech Therapy. Theory and Practice".

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The safer morphological level of the linguistic system and the regularities of word building and word form derivation are used for rehabilitation of writing skills in cases of phonemic analysis disorders.

The technique of rehabilitation of thought disorder is designed in correspondence with the disorder mechanisms in various aphasia syndromes. On the one hand, special attention is paid to the restoration of the system of notions as verbal components of thinking and the ability to operate words in all diversity of their meanings, which is impaired in all aphasia syndromes. In posterior aphasia syndromes, in addition to rehabilitation of the verbal components of thinking, essential attention is paid to rehabilitation of the imagery components: ability of purposive analysis of directly perceived objects and situations, as well as visual images. In all cases of aphasia, work on rehabilitation of interaction between verbal and imagery components and planning and regulating role of speech in the process of thinking is involved.

Creation of the method of speech rehabilitation in semantic aphasia embraces the whole complex of systemic disorders of verbal, optico-spatial and mental activity typical of this syndrome. Taking into account the fact that expressive speech of such patients remains relatively safe, though somewhat impoverished in terms of vocabulary and syntactic constructions, the author suggests using linguistic experience and stereotypes of speech associations as basic support units. The series of exercises worked out by the author restore the morphological word building and word form derivation models and actualize syntactic relations. To restore the functional meanings of grammatical morphemes (prefixes, inflexions, suffixes, etc.), the exercises employ word combinations automated in speech practice with their further inclusion in spatial and temporal constructions which, at the initial stages of work, have unequivocal correspondence to images, specifically visual ones, from the patient's life experience.

To overcome acalculia, the author uses numbers ordered in rigid spatial sequences which are regarded as a certain "bound" context fixing the relationships between the numbers both in the imagery and verbal aspect. Speech stereotypes, such as automated counting (ordinal and, later, tabular), serve as stepping stones for presenting a system of exercises with their gradual complication, specifically increasing the number of operations, counting by groups, etc.

In the methods of visual gnosis rehabilitation, when the ability to control gaze direction is restored at the initial stages of rehabilitation, as well as in rehabilitation of the motor component of writing via training to produce graphic motor skills gearing, lower sensorimotor levels of functional system organization become the basic ones for the impaired organization levels.

All the proposed techniques imply "by-passing" the central defect in order to address the relatively intact or easier recoverable psychological function levels. The rehabilitation methods are aimed at creating, and capitalizing on, conditions wherein the affected functions are activated by means of patients gradually progressing from simpler to increasingly more complicated tasks. These "gentle" techniques have helped a majority of the author's patients to restore their speech and other psychological functions and return to normal professional activities.

We would like to say some words about the material composition and the style of the author of the monograph. The topic itself: "Aphasia. Agnosia. Apraxia." is classical, unfathomable and urgent. The area subtitled "Rehabilitation Techniques" is subdivided within

this global field of investigation. It should be noted that the content of the monograph fully coincides with the topic designated in the title.

The literature on the topic is reviewed exquisitely, logically and in detail, singling out the leading conceptions in the history of the science over the last decades of the 20th and the first decades of the 21st century, and providing analysis of contemporary research in aphasiology in various fields including the countries of Europe, America and Asia. The advantages of A. Luria's approach to the understanding of the mechanisms of disorders of speech, gnosis and praxis, the same as the necessity of designing rehabilitation program on the basis of this understanding, have been substantiated in a convincingly argumentative manner.

The book appeared just on time. Nothing similar in the volume of issues of rehabilitation work has been published over the last few decades. The book analyzes and generalizes not only home research and methods of rehabilitation but also foreign ones. And in a number of cases, the author provides extended reviews of works abroad presenting not only separate authors but whole scientific trends and schools of today.

The book is not only timely but also up-to-date. The author has an excellent command of new terms and notions from the adjacent sciences, mainly from linguistics and neuropsychology. This, above all, allows the author to convince the reader in the relevance of a certain scientific approach or procedure.

The main part of the monograph – the methods of rehabilitation work, is written in full correspondence with the theoretical positions about the mechanisms of speech disorders and other psychological functions. The author presents solid scientific foundations for the suggested rehabilitation programs in different sections: oral speech, writing, counting, and verbal mental activity. M. G. Khrakovskaya, to her credit, is scientifically honest and considerate in her attitude to the authors of the previously published works which have been used, creatively continued and expanded (see, for example, references to V. V. Oppel'). Moreover, the author of the monograph under review managed to give a theoretical basis for many techniques suggested by other scholars and successfully used in practice without theoretical foundation.

Apart from a detailed description of the methods and concrete techniques, the book offers a vast array of didactic material which can be used by both the experienced logopedist and a beginner specialist in the field.

The book is written using a scientific academic style and clear-cut, comprehensible language. Each

sentence, each idea is unfolded and logically complete.

We believe that this is a serious scientific work, carried out in the best classical traditions, which will be read both by specialists in the theory of compensation of psychological functions and by practical neuro-rehabilitation therapists, including logopedists, neuropsychologists, and neurologists to their advantage. The significance of the work goes far beyond the boundaries of aphasiology. Logopedists, defectologists, psychologists, pedagogues working with children with alalia, general speech underdevelopment, dysgraphia, and dyslexia will find in the monograph information useful for them both in theoretical and in practical aspects. It is not by chance that the main scientific work by V. K. Orfinskaya, one of the giants of home logopedics, dealt with comparative analysis of aphasia and alalia. The monograph under review can also serve as a teaching guide for students of faculties of special pedagogy.

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APPENDIX

Submission Guidelines for Prospective Authors

DEAR COLLEAGUES!

Materials for publication are accepted only by e-mail for the purpose of their orderly and safe storage.

The editorial board of *Special Education* accepts articles in the fields covered by the journal in case the article has not been published before. All articles are reviewed by independent experts. The final decision about the publication of the article is taken by the editorial board. If the article is rejected by the board the author is sent a well-founded refusal to publish the article. Doctors of sciences and post-graduate students are exempt from payment for the publication.

All submitted articles are tested by the "Antiplagiat" system. If the text of the article violates the norms of originality and contains borrowed ideas without reference to the source of citation the article shall be rejected in accordance with the norms of the scientific community.

All papers have to be written in DOC/DOCX format using Microsoft Office Word for Windows meeting the following requirements:

- article length — 8—12 pages (about 20 000 characters including spaces);
- paper size — A4;
- font — Times New Roman (if the author uses rare fonts it is necessary to attach separate files with these materials);
- font size — 14;
- margins — 2 sm;
- line spacing — 1,5.

References to the literature are given in the body of the text in square brackets. They contain the number of the source in the list of literature and in case of citation – the corresponding page, for example: "Citation…" [5, c. 56—57]. The numbered list of literature (not less than 15 sources) is given at the end of the article according to GOST P 7.05—2008.

Sample List of Literature

A book of one author	**Иванов, И. И.** Название книги / И. И. Иванов. — М. : Наука, 2004. **Внимание!** Пробел до и после знака «двоеточие»
A book of 2-3 authors	**Иванов, И. И.** Название книги / И. И. Иванов, П. П. Петров, С. С. Сидоров. — М. : Наука, 2004.
Dissertation	**Иванов, И. И.** Название : дис. … д-ра пед. наук : 07.00.02 : защищена 22.01.04 : утв. 15.07.04 / Иванов Иван Иванович. —Екатеринбург**,** 2004**.**
	Иванов, И. И. Название : дис. … канд. ист. наук : 07.00.02 : защищена 22.01.04 : утв. 15.07.04 / Иванов Иван Иванович. — Екатеринбург**,** 2004**.**
An article in a collection	**Иванов, И. И.** Название статьи **/** И. И. Иванов, А. А. Петров // Название сборника / Урал. гос. пед. ун-т. — Екатеринбург, 2004**.**
An article in a journal	**Иванов, И. И.** Название статьи **/** И. И. Иванов // Наука и жизнь. — 2004. — № 1.
Electronic resource (according to GOST 7.82—2001)	**Иванов, И. И.** Компьютерная графика [Электронный ресурс] : рабочая программа : для студентов-заочников / И. И. Иванов ; Урал. гос. пед. ун-т. — Электрон. дан. и прогр. — Екатеринбург, 2006. — 1 дискета. — Систем. требования : IBM PC, Windows 95, Word 6.0.
	Российская государственная библиотека [Электронный ресурс] / ред. И. И. Иванов ; Web-мастер Н. Козлова .— Электрон. дан. — М. : РГБ, 2003 — . — Режим доступа: http//www.rsl.ru.

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Separate files should be created for pictures (black-and-white, no halftones): in vector formats - AI, CDR, WMF, EMF; in raster formats - TIFF, JPG with the resolution not less than 300 dpi in true size; diagrams from the programs MS Excel, MS Visio and so on are to be submitted together with the original file, containing the data. If pictures in raster formats contain text they should be submitted in separate MS Word file for purposes of text editing.

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5. Classification code of the topical section - GRNTI code (the code could be found on the site of grnti.ru) and VAK code (VAK code is to be found in the Section of "Номенклатура специальностей научных работников" vak.ed.gov.ru)

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