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DIFFERENCES IN MEANS OF COMMUNICATION AMONG NON-SPEAKING JUNIOR SCHOOLCHILDREN WITH MODERATE AND SEVERE INTELLECTUAL DISABILITY

Abstract. The article deals with the problem of differentiation of the means of communication in non-speaking junior school children with moderate and severe intellectual disability. The authors present a modified version of a technique of modeling communicative situations using video shooting to explore the characteristics of non-verbal and feasible verbal means of communication in children of this category. Based on the analysis of results of the pilot study the authors single out the main diagnostic criteria of differentiation of moderate and severe intellectual disability in non-speaking children in terms of formation of communication means. The article offers a comparative description of the means of communication in non-speaking children with moderate and severe intellectual disability according to the selected criteria and highlights specific typological features of communication means in cases of complicated forms of intellectual disability which lead to different qualitative characteristics (intellectual disability complicated by severe motor impairment or autism spectrum disorders). The revealed features should be taken into account by teachers implementing specific individual development programs while determining the content of the subject "Speech and Alternative Communication" and the rehabilitation course "Alternative Communication".

Keywords: communication means; communication situation; oligophrenopedagogy; children with intellectual disability; mild intellectual disability; severe intellectual disability; junior schoolchildren; speech disorders; speech underdevelopment; pedagogical diagnostics.

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The stress in education of persons with marked intellectual disability is laid not on the academic component but on formation of life competences which "allow the disabled person to reach maximally possible self-dependence in solution of day-to-day problems and ensure inclusion in social life" [13, p. 347]. Ability to communicate is one of the significant life competences. It is facilitated by acquisition of the means of verbal and non-verbal communication. Still persons with moderate and severe intellectual disability have serious problems with acquisition of speech, non-verbal means and adequate use of available means in situations of real

communication [2; 3; 7]. Special educational needs of children of this category demand introduction of special academic subjects and rehabilitation courses which are absent in the content of education of typically developing children: “Speech and Alternative Communication”, “Alternative Communication”.

Special literature has many references to the polimorphemic nature of the contingent of pupils with moderate and severe intellectual disability and significant differences between moderate and severe intellectual disabilities in terms of development of speech and non-verbal means of communication [2; 4; 5; 7; 11; 15].

But the requirements to the content and acquisition results of the academic subject “Speech and Alternative Communication” and the rehabilitation course “Alternative Communication” for children with moderate and severe intellectual disability are formulated in legal-normative documents of the Federal level [13; 14] in a general way, though there are notes that it is necessary to take into account individual peculiarities, which is stressed even in the terminology used in the given documents: “individual level of education”, “special individual development program”, etc.

Thus, the analysis of literature and educational practice reveal the following discrepancies and contradictions:

- between the recognition of differences between students with moderate and severe intellectual disability in terms of formation of communication means and the absence of criteria for differential diagnostics in the given sphere;
- between the need to differentiate and individualize the content of education in the sphere of formation of communication means in the children of the given category and inadequate investigation of “the initial state” of the communication means at the junior school ages (8-10).

Consequently, the problem of research of peculiarities of non-verbal and feasible verbal communication means in 8-10 year old schoolchildren with moderate and severe intellectual disability and absence of commonly used speech becomes especially urgent. With this end in view, we carried out a summative experiment in 2015 on the base of the budgetary education institutions Krasnoyarsk General Education School # 5 and Krasnoyarsk General Education Boarding School # 3. 14 schoolchildren of grades 1-3 with moderate and severe intellectual disability and absence of commonly used speech took part in the experiment.

In accordance with the aim of research and the above mentioned contradictions we formulated the following research tasks.

1. To modify the existing methods to achieve the aim of the summative experiment.

2. To single out the criteria of differential diagnostics of moderate and severe intellectual disability in terms of formation of communication means at junior school age.

3. To differentiate the state of communication means in schoolchildren with moderate and severe intel-

lectual disability according to the distinguished criteria.

4. To single out typological groups of children of the given category significant for differentiation of instruction in learning the academic subject "Speech and Alternative Communication" and the rehabilitation course "Alternative Communication".

We used **the technique of modeling communicative situations using video shooting** worked out by A. V. Mamaeva [12] in order to accomplish the first task. The given technique was modified by us in accordance with the research aim and peculiarities of those tested.

The experimentator modeled three situations corresponding to the business-situational form of communication.

1. Plot-driven game ("Having Tea").

2. Object-manipulative activity with toys (stacking toys, matryoshka dolls, etc.).

3. Playing lotto.

Communication situations were modeled in a sequence. The time of realization of each model of interaction with the child depended on his wish but did not exceed 15-20 minutes. The whole situation of interaction was video recorded. We analyzed the 5 minutes of the situation video during which the children were most active.

As a result of undertaken analysis, we singled out the main **diagnostic criteria of differentiation of moderate and severe intellectual disability** and absence of commonly used speech taking into account communication means:

– categories of signs used in communication;

– characteristic of successive ordering;

– initiative in communication.

Categories of signs used in communication. It is well known that the following sequence of emergence of communication means is observed in the process of typical psychophysical development: expressive-mimic (smile, look, mimicry, expressive movements of the hands and body, vocalizations); object-oriented (locomotor and object-like movements and postures); verbal means. For example, a smile as a communication means appears at the end of the first – beginning of the second month of life, a contact look – at 1.5-2 months of life, the first gestures (attention claimers, invitations, pointing and negative evaluation) – at 6-8 months of life; speech evolves during the second year of life of a baby [9].

Dysontogenesis is characterized not only by a delay in the formation of communication means but also by their qualitative specificity [3; 11], which is most vividly expressed in cases of multiple disorders and makes correlation of the level of psychophysical development with any age parameters impossible [13, p. 338].

In the course of experiment we separately registered expressive-mimic (look, mimicry, smiles), object-oriented (gestures) and verbal signs (interjections, syllables, babbling words and several commonly used words).

Characteristic of successive ordering. Ability to connect several

signs simultaneously or successively in a single utterance ensures understanding of communication. Preverbal language of infants is predominantly simultaneous; linear successive utterance schemes (consisting both of words and non-verbal signs) appear in ontogenesis somewhat later, during the second year of life [1; 6; 10; 12].

Initiative in communication. The emergence of initiative actions towards the grown up person is one of the leading criteria of formation of the need to communicate which is demonstrated by the child quite clearly by the age of 2 months [8; 9].

In the framework of accomplishment of the third task we registered distinct differences in the means of communication in schoolchildren with moderate and severe intellectual disability and absence of commonly used speech according to the criteria defined above. The results of a comparative analysis are presented in Table 1.

Let us dwell in more detail on the description of communication means of schoolchildren of grades 1-3 with moderate and severe intellectual disability and absence of commonly used speech according to the criteria enumerated above.

Moderate intellectual disability. Children use all categories of communication means with a considerable percent of usage of verbal means (more than 25% of the total) consisting mostly of babbling, simplified and simple commonly used words. Expressive-mimic and object-oriented means enhance, make more precise or substitute oral speech. For example, Vlada K. (aged 9) became delighted when she was decorating a cake with candles and began to smile pointing at herself and saying: "Ya, et'yu" and blow out air as if she were blowing out a candle.

Using symbols has a semantic and communicative charge. Communication means were used to claim attention, express a request or demand, answer a question, ask a question and communicate information. Let us illustrate this on the example of a concrete child – David S (aged 9).

Table 1

Diagnostic criteria of differentiation of moderate and severe degrees of intellectual disability

Criteria	Moderate intellectual disability	Severe intellectual disability
Categories of signs used in communication	– They use signs of all categories; – verbal means are represented by babbling, simplified and commonly used words; – the means have a semantic and communicative charge	– They mostly use expressive-mimic means; – object-oriented means are suppressed; – verbal means are represented mostly by echolalias and vocalizations; – the used means usually have no semantic and communicative charge
Characteristic of successive ordering	Successions of two signs predominate, sometimes they include 3 signs.	They use successions of 1-2 signs
Initiative in communication	They use initiating utterances.	They show no initiative in communication; additional stimulation is usually necessary for actualization of response utterances

Table 2

Variants of usage of communication means

Variant of usage	**Example**
Claiming attention	Attracting attention to himself, he smiled, looked the teacher in the eyes and patted his hand
Request, demand	Having decorated a cake, he saw cups made ready for drinking tea, reached out for them and said: “Give”
Answer to a question	When he was shown a candle and asked “What is it?” answered: “Pya-pya-pya” and blew out air
Asking a question	Decorating a cake he picked up a berry and before putting it into the cake looked questioningly at the teacher and waited for an approving answer
Communicating information	Having seen animal toys got up from the table and began to imitate different animals by postures and sounds
Praise	When he did an exercise correctly he patted himself on the chest and said: “Piz” (meaning *priz*)

Children can unite signs of different categories into ordered successions (they mostly use successions of 2 united signs, very seldom – 3 signs). For example, while decorating a cake, Nikita K. (aged 10) takes cream from a saucer, looks questioningly the teacher in the eyes and after the answer echoes: “Kem” looking at it and then puts it in the cake saying: “Uda” (syuda). When asked the question “How do you blow out a candle?”, Nastya S (aged 10) looks the teacher in the eyes, then looks at the candle and blows at it; after that she looks the teacher in the eyes again and waits for approval of her correct action.

Both response and initiating utterances are observed. Initiating utterances were used to attract attention, express a request, rarely – to communicate information, and extremely rarely – to ask a question or get additional information from the interlocutor.

Severe intellectual disability. In most cases, children use a limited

range of expressive-mimic means represented by smiles, contact look, mimicry (which is usually subtle and inexpressive). Expressive-mimic signs as communication means are not used actively enough; they are mostly used to attract attention, to demonstrate reception of instruction and satisfaction with interaction or activity. For example, on completing the task, Yan U. (aged 9) looks the teacher in the eyes; when asked the question "Is the cake beautiful?", Maksim B. (aged 8) laughed.

Object-oriented signs are suppressed, make up less than 25% of the total number of signs and usually appear in the form of repeated imitating gestures. The specificity is reflected in the fact that verbal means are used rather actively (more than 25% of the total number of signs). And the verbal means are characterized by qualitative specificity and are represented by vocalizations and in very rare cases – by echoing separate words. Thus, object-oriented and verbal signs are not actually communication means, do not carry semantic charge, are not aimed at establishing contact with the interlocutor; they only express emotional-expressive aspect of interaction, and do it in a very subtle way at that. Autistic features and negative behavioral manifestations observed in these cases cannot be regarded as the leading disability; they have a secondary nature in the structure of marked intellectual disability. The children use successions of 1-2 signs and don't show initiative in communication; additional stimulation is usually necessary for actualization of response utterances. For example, Grisha N. (aged 8) looked the teacher in the eyes for a short time while he was explaining the task; but he did so only after the teacher had attracted his attention by patting Grisha on the shoulder. In response to an invitation to eat the cake, Maksim B. (aged 8) echoed the imitating gesture of biting off. On seeing a cake, Irina P. (aged 9) volalized: "Ukh" and reached for the cake.

It is quite evident that Table 1 reflects only typical manifestations; considerable individual deviations may be found in some cases. What is more, the peculiarities of non-verbal and feasible verbal communication means presented above may be complicated by disorders which bring about another qualitative specificity. We have singled out two more typological groups, which corroborates and makes more precise the special literature data about differentiation of the contingent of schoolchildren with moderate and severe intellectual disability from the point of view of their need of special educational conditions [13, p. 340]:

1) schoolchildren with intellectual disability complicated by severe motor impairment;

2) schoolchildren with intellectual disability complicated by autism spectrum disorders.

Intellectual disability complicated by severe motor impairment (CP). Verbal signs and such expressive-mimic signs as look and smile prevail. Object-oriented means and mimic expressions made up less than 25% of the total number of signs. Babbling, simplified and a small number of simple commonly used

words pronounced illegibly (for example, *da, be* — koza, *yakaka* — yagodka, *seti* — svechka, *tot* — tort, etc.) which were mainly used to answer questions and to accompany actions in the form of echoing the teacher's words. Expressive-mimic means are represented by rare contact glances and a subtle smile. Object-oriented signs were used only as imitations. Deficiency of mimicry and object-oriented means is caused by severe motor impairment; priority is given to verbal signs which function as compensatory ones in the process of communication; and even those signs are underdeveloped as a consequence of dysarthria. Thus, for example, to demonstrate reception of information children echoed a part of the instruction. In response to the request to decorate a cake with a berry, Irina P. (aged 9) echoed: "Yakaka". Children mostly use ordered successions of one, seldom two united signs. We observed response and a small number of initiating utterances.

It is necessary to note that children with marked anarthritic disorders (inability to pronounce sounds and syllables and repeat words) did not take part in our experiment. It is possible that marked anarthritic disorders actualize other compensatory mechanisms.

Intellectual disability complicated by autism spectrum disorders. Children of this group demonstrate predominance of verbal signs in the form of echolalias and vocalizations and suppression of expressive-mimic and object-oriented means or their use in the form of imitation. Verbal signs were used as echolalias and vocalizations without semantic or communicative charge. Verbal signs dominated in some children; others mostly demonstrated a combination of expressive-mimic and verbal signs. Expressive-mimic signs were represented by a contact look (which was characterized by a short duration and was directed at the teacher's face or near it, and very seldom – in the teacher's eyes) and a smile used to attract attention, demonstrate reception of instruction, corroboration of correctness of action or expression of satisfaction with activity. In all children of the given group, object-oriented means were insignificant (less than 25% of the total number of signs) and were used only in the form of imitation. The children could unite signs and model ordered successions. They seldom, if ever, and not all of them showed initiative in communication; stimulation was needed even to actualize response utterances. For example, Nastya S. (aged 10) reiterates the task as an echolalia and after its completion looks at the teacher. Maksim M. (aged 9) accompanied his actions with vocalizations, for example, while decorating a cake he pronounced "Plya, plya, plya", while pouring tea into cups he said "M-m-m", answering the question "Yes?" he vocalized "A-a-a-a". Maksim N (aged 9) looked at the teacher and protruded his lips as if blowing out a candle, but he did so only after the teacher had shown him this gesture and patted him on the shoulder to attract his attention to the gesture.

Thus, we singled out 4 typological groups of schoolchildren of grades

1-3 with moderate and severe intellectual disability and absence of commonly used speech on the basis of the revealed peculiarities of communication means:

1) schoolchildren with moderate intellectual disability;

2) schoolchildren with severe intellectual disability;

3) schoolchildren with intellectual disability complicated by severe motor impairment;

4) schoolchildren with intellectual disability complicated by autism spectrum disorders.

The above mentioned groups have distinct differences according to the following criteria:

– categories of signs used in communication;

– characteristic of successive ordering;

– initiative in communication.

The revealed peculiarities should be taken into account in differentiation of the content of the academic subject “Speech and Alternative Communication” and the rehabilitation course “Alternative Communication”.

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