Specificities of Communication in Children with Intellectual Disorders

Oksana V. Zashchirinskaia^{*}

Department of Pedagogics and Pedagogical Psychology, Saint Petersburg State University, Saint Petersburg, Russian Federation

Abstract: Objective: The purpose of this work is to study the characteristics of communication in children with intellectual disabilities.

Background: The study of the specificities of communication in children with intellectual disabilities has become more and more relevant in the past few years.

Method: The methodological basis of this study was the combination of various theoretical methods of cognition.

Results: In the process of writing this work, the author studied the techniques of verbal and non-verbal communication. The works of Russian and foreign authors, as well as methods of improving communication in children with intellectual disabilities, were considered. It was found that the impact of intellectual disabilities with mild mental retardation on the cognitive, behavioural and emotional-personal spheres of the communicative process naturally entails the emergence of serious difficulties in establishing contacts with people around, and therefore in the process of social adaptation of the child in general.

Conclusion: The practical significance of this work lies in the study of the characteristics of communication in children with intellectual disabilities, which will be useful for psychologists, teachers and medical workers. The study and research of this topic will provide further opportunities for the development of a program of psychological influence to optimise communication for children with intellectual disabilities and their adaptation in society.

Keywords: Intellectual impairment, mental retardation, social interaction, social adaptation, non-verbal communication, verbal communication.

INTRODUCTION

Among children with mild mental retardation, social interaction, in general, is manifested in a simplified form. They use a less wide range of communication tools and respond less differently to information from other people. When studying the phenomenology of communication in the presence of intellectual underdevelopment, the specificity of the levels of social interaction between two individuals or within a group is taken into account. Each level is characterised by certain parameters since within the framework of social psychology dyad, small and large groups have common characteristics as social groups, but are associated with different involvement of an individual in social communication [1]. Within the framework of this study, it is necessary to consider social interaction in a small group, and, first of all, in a peer group. Children with mild mental retardation have characteristic problems of adaptation to the social environment at the micro and macro levels. For successful work, it is necessary to identify the main factors that hinder their constructive communication.

Taking into account the forecast of social adaptation of children with mild mental retardation, the following parameters of its assessment were used. First, researchers point to the degree of intellectual underdevelopment and its impact on other mental processes. Secondly, such a parameter is individual personality traits of a child, which include the characteristics of temperament, the forming character, individual personality characteristics, the structure of his motives and needs. Thirdly, the phenomenon of purposeful activity is also taken into account - the presence and frequency of actions in a child as an active communicator, capable not only of organising interaction with the outside world but also of conditioning self-development [2]. Fourthly, the factor of endurance is considered - the ability to withstand and cope with constant or temporary loads and difficulties arising for a long time. In addition, one cannot ignore the adaptation to the requirements of the that is, the correspondence environment. of behavioural reactions to external conditions, which correlates with the adequacy of the actions used.

Emotional balance and the degree of stability of its manifestation, that is, the ability to consciously respond to external influences, frustration, and cope with negative emotional reactions, serves as an indicator of the child's social adaptation. A significant parameter of

^{*}Address correspondence to this author at the Saint Petersburg State University, Saint Petersburg, Russian Federation; Tel: +7812 363 66 33; E-mail: zashchirinskaia5112@ubogazici.in

social adaptation is the nature of interests and motivations, which determines the formation of their motivational-need sphere in children: how much it is structured and hierarchically organised. The motivational structure of the personality largely determines the prognosis of socialisation. A positive assessment of the selected parameters can serve as an indicator of the individual's successful social adaptation to social requirements [3]. The regularity lies in the fact that with the maximum involvement of individual characteristics of adaptability, the likelihood of a positive forecast of social adaptation of children with mild mental retardation increases. It should be emphasised that one of the most important parameters in optimising the process of socialisation of these children is self-control [4].

METHODOLOGY

The research carried out in this work was based on theoretical methods of scientific knowledge. In the context of this study, the following were used: theoretical analysis of the literature, synthesis and analysis of data, system analysis of data.

To consider terms and concepts in the context of the subject of this work, a theoretical analysis of scientific literature was used. The features of communication in children with intellectual disabilities were considered. In the context of this work, the articles of foreign researchers were analysed. The works of foreign and Russian scientists were considered, such as: scientific publications, books, practical manuals. The information about children with mental retardation. the characteristics of communication in such children were analysed, theories and proposals presented by the authors of the works were regarded.

One of the research methods used in the context of this work was synthesis. Synthesis is a method of scientific research, the essence of which is studying phenomena as a whole, on the basis of combining elements related to each other into a single whole. The synthesis in this work was used to theoretically study the characteristics of communication in children with intellectual disabilities. Several communication features have been identified in children with intellectual disabilities. Analysis, as a method of scientific knowledge, involves the division of phenomena into separate component parts. Features of verbal and nonverbal communication were analysed using this method of scientific knowledge. Certain features of communication were considered that affect the process of social adaptation in children with intellectual disabilities. The search for possible solutions to communication problems in children with intellectual disabilities was analysed.

The next method of scientific knowledge used was systematic data analysis. Systematic data analysis was used to analyse scientific publications on the characteristics of communication in children with intellectual disabilities. The authors analysed information about the features of communication that affect the socialisation of children in society.

A review of scientific articles by foreign authors made it possible to conclude that the problem of communication features in children with intellectual disabilities has not been sufficiently studied. The results of the analysis of the reviewed works indicate the need for further study of the communication features as mentioned above for the successful adaptation of children with intellectual disabilities in society. During the research, the works of Cockerill, McDaniel, Matheson and other researchers were considered. In his work, Cockerill noted that genetic disorders could be a possible problem of impaired intelligence and communication in children. The author investigated the issues of learning disabilities, speech problems, as well as vision and communication problems in children with intellectual disabilities. Researcher McDaniel considered a strategy for screening complex verbal, simple verbal, simple visual, and spatial working memory in children with intellectual disabilities. The author has developed a strategy that can be used by professionals who are interested in testing the ability of their clients to remember and retrieve newly obtained information. Matheson's article discusses the problem of emotion recognition deficit in children with intellectual disabilities. This study suggests a practical value for studying patterns of aggression and subsequent clinical interventions.

Researchers Rodas, Zidik and Baker investigated the increased mental health risks of children with mental retardation, namely the increased risk of developing other psychological disorders. The authors conducted a study in the families of children with mental retardation.

RESULTS

For modern medical psychology, the most important task is to create conditions for the development of

children's ability to self-determination in the changing circumstances of life. Communication can be viewed as a special form of activity between several people. Its result is the establishment of contact between people. The development of communication as a type of activity implies the formation of certain skills, taking into account the influence of psychological defence mechanisms in children [5].

Communication, according to the works of domestic and foreign researchers, is of particular importance as an object of research in the context of their relationship with other mental phenomena such as personality and cognition. The relationship between communication and activity is most fully elucidated in the works of representatives of the Moscow and Leningrad psychological schools [5-12]. Within the framework of the work of these schools, the influence of the communication process on the development of personality was investigated [13, 14], as well as the question of the importance of communication for the development of human cognitive processes [15].

M.I. According to Lisina, for children. communication is an active action, with the help of which a child can exchange information and experiences with the people around him, and also satisfy his needs [11]. Also, M.I. Lisina identifies the ontogenetic sequence for the formation of means of communication with adults and with peers in children. The first to develop are expressive-mimic means of communication, which are responsible for the direct expression of emotions and are directly related to the expression of the child's subjective state. Then, when a child interacts with an adult, object-effective means appear, which are no longer associated with a subject, but with actions he performs, directed at external objects. And already in the last place, speech means of communication are formed - verbal communication, the main instrument of which is human speech in all its diversity.

With this means of communication, a sequential process of formation takes place in accordance with specific periods of ontogenesis. In interaction with peers under conditions of normative intellectual development, these basic conditions of interaction with close people are formed by the age of three against the background of an increase in the independence and purposefulness of child's actions. Researchers define the following parameters of communicative activity during the period of adaptation to the schooling of younger students. First, the author refers to them as

social sensitivity – the child's ability to perceive the impact of communication partners and respond to them. In addition to it, communication initiative is also important – the ability to address another person on their own initiative. In the phenomenology of communication, the emotionality of interaction stands out separately, which is formed in each individual personality based on personal experience and individual properties [16].

In medical psychology, the study of the communication process, interpersonal interaction of children is of particular interest in the context of the development of training programs and the development of socialisation strategies [17-23]. The problem of developing communication in children is associated with the problem of adaptive resources that allow such children to effectively cope with emerging difficulties, understanding them correctly and effectively overcoming them.

Based on the research results of M.I. Lisina, it can be concluded that the adaptation of a younger student in a peer group directly depends on the development of communicative abilities during the interaction, both verbal and non-verbal [11]. An analysis of the sociometric status of junior schoolchildren during the adaptation period shows the presence of motivational difficulties in establishing contacts with peers, which are due to egocentric behaviour, and insufficiently developed desire for cooperation. The importance of communication for children becomes most obvious during the transition of children to schooling. Communication difficulties become the basis of the goal for psychological intervention due to the importance of the communication process during the period of school adaptation. This is due to the fact that a child does not learn to communicate with other people; it is difficult for him to communicate, to acquire knowledge and forms of new behaviour. Communication experience cannot be acquired from books or other sources, but can only be obtained directly through involvement in relationships with people [24].

The adaptation period becomes extremely important for the formation and development of communication abilities in children with mild mental retardation. Communication skills, according to A.V. Mudrik, are a complex that combines the qualities of a person as a social and as a psychological character [24]. Communication skills are developed through a variety of social interactions and in the process of purposeful communicative development. The level of development of communication skills directly affects the quality of life of children with mild mental retardation. The development of their communicative sphere is a criterion for the success of the socialisation process, in which adaptation is the primary stage [25-30].

To solve the set tasks, complex systems have been developed to support families raising children with mild mental retardation, combining one-time treatment, rehabilitation and correction. Including for them, numerous technologies of social rehabilitation have been tested based on ideas about mental disorders of the type of persistent intellectual underdevelopment. The research focuses on taking into account the severity of a decrease in intelligence and the characteristics of the personality development and communication skills of a child [28, 31-33]. It can be concluded that the study of the specifics of the communicative sphere in children with mild mental retardation is of significant interest in developing their adaptive skills.

The communicative development of children with mild mental retardation differs from the development of their peers without intellectual underdevelopment from the very first days of life. This characterises by a lack of interest in the environment, inertia of their response. and a reduced degree of emotional manifestations in contact with the mother. The whole range of observed reflects communication disorders both the characteristic features of the intellectual underdevelopment in such children and the features of the development of other areas of mental activity in them.

In children with mild mental retardation, verbal communication disorders are manifested in the fact that they, as a rule, begin to speak at a later age than children with a standard intellectual level (on average, at the age of 4-5 years). In general, the development of speech in such children lags significantly behind their peers. For example, when children without intellectual disabilities master the first words, only babbling is characteristic of children with mild mental retardation. The interval between different phases of speech development is also longer in these children [34]. In general, the systematic nature of violations affects the verbal and non-verbal communication of children with mild mental retardation. Underdevelopment of perception and intellect complicates the ability to competently build a speech and understand emotional states of an interlocutor,

change a position in relation to what is happening in the course of a conversation. Disturbances of attention and regulation also negatively affect communication between a child with mild mental retardation and his interlocutors, since it becomes difficult to switch between different topics, as well as to fix voluntary attention. Violation of the emotional sphere is manifested both in the ability to respond to ongoing events adequately and to understand the emotions of other people. A decrease in the intellectual level negatively affects the formation of semantic connections between words and social interactions against the background of the rigidity of the course of cognitive processes, and the detailed speech statements of such children remain specific and focused on the actual needs of a child. Motility disorders not only impede sufficient mastering of object interaction with the outside world but also significantly limit the possibilities of non-verbal communication since there are stable limitations in facial expressions and gestures [34, 35].

Dialogue speech in children with mild mental retardation is characterised by certain features. There is a reduced initiative of such children when initiating a dialogue, their inability to start a conversation. Difficulties in the development of expressive speech, emotional disturbances, and difficulties in the implementation of cognitive processes are reflected in the ability to understand an interlocutor, take into account different points of view, correctly assess the questions asked and productively formulate answers to them.

For children with mild mental retardation, mastering monologue speech due to impaired cognitive (attention and imagination), regulatory and volitional processes is largely difficult since it is difficult for such children to plan, follow certain communication and behaviour strategies that arise during the implementation of various mental operations [34, 36].

Summing up all of the above, it can be said that mild mental retardation in children is a complex poly structural phenomenon characterised by a whole range of disorders that affect the development of their communicative abilities. Moreover, these features can be caused both by the direct influence of the existing intellectual pathology and by the indirect influence of reduced intelligence on the development of interaction between a child and the social environment, which is manifested in the formation of certain communication styles, the classification of which was proposed by

Oksana V. Zashchirinskaia

O.V. Zashchirinskaia [37]. This classification will be discussed below.

A child may feel comfortable in formal situations and show no desire to dominate the communication process. This style of communication is called partially adapted since the communication process as a whole remains intact, and a child himself experiences only minor difficulties in certain aspects of verbal and nonverbal communication.

In communication, a child may experience insufficient development of self-control and immaturity of emotional manifestations, which corresponds to a maladaptive reactive style of communication, which prevents the child's successful social adaptation.

In the process of communication, a child is able to steadily demonstrate the characteristic signs of personality disorders, then his ability to understand the mental state of others will be reduced. These manifestations of behaviour can be attributed to the disjunctive-reactive style of communication, in which not only the ability to adequately express one's thoughts and feelings is impaired but also to understand an interlocutor.

In some cases, the child's desire for social isolation is observed, which outwardly resembles behaviour in autism spectrum disorders, this style of communication is called egocentric and is characterised by serious distortions of the structure of the communicative process.

As mentioned above, communication plays various roles in the life of children: information exchange, planning and organising joint activities, perception, and understanding of a partner. Communication skills include: speech, mimic, pantomimic. In his research, A.V. Mudrik points out that the conditions of the educational process can burden the process of communicative development [24]. For example, this is expressed in the fact that primary school students have a number of difficulties in realising their communicative potential. This feature is due to the transition to a new leading type of activity - educational. In contrast to normative development, with mental retardation, play actions dominate even against the background of a change in the social environment. All this contributes to a decrease in age indicators in the formation of the skills of formalised pedagogical communication and interpersonal interaction with peers, which in turn requires a targeted impact on the development of communication skills - both verbal and non-verbal.

The analysis of the study of the peculiarities of communication showed that in the conditions of teaching in the first grades, children with a mild degree of mental retardation show a pronounced need for communication without focusing on the success of interpersonal contact [18, 38]. While in normatively developing children, it decreases, and 30% of the examined children, against the background of an intellectual decrease, are distinguished by persistent difficulties in communication with peers. The data from these studies also demonstrate that children with mild intellectual disabilities are more interested in the relationships between play partners and those normatively developing children are more interested in the attributes of play.

The process of communication of children with a mild degree of mental retardation during the period of their adaptation to schooling clearly demonstrates that their communication is formed and developed in accordance with mental laws in ontogenesis, but has a number of specific features, the general character of which is fixation at earlier stages of development. Accordingly, it is necessary to consider this phenomenon as a variant of underdevelopment, that is, to apply wide possibilities of compensation for existing violations. However, even the possibilities for potential compensation will be limited by the existing methods of intervention and the age of its initiation.

When communicating with peers, children with mild mental retardation are characterised by the expression of emotions, accompanied by changes in intonation and the expression of emotions, inadequate in various changing social situations. In the communication of children with a mild degree of mental retardation, expressive-mimic manifestations are observed, overly pronounced intonations – from affects to delight, but at the same time emotions in such children are difficult to differentiate and realise; they are generally impulsive [39, 40].

Another feature of the communication of children with mild mental retardation is the persistent limitation of statements, phrases, and speech turns, which is expressed in the use of additional sounds, stereotyped words, and phrases. There is a significant dominance of response statements over proactive ones. The above features clearly demonstrate the complexity of the process of verbal and non-verbal communication in children with mild mental retardation. To realise the goals of psychological impact, it is necessary to purposefully develop the child's non-verbal communicative abilities, due to which he learns to speak and understand another, assimilate new information, express himself, and also enter into different relationships [41].

When comparing the level of development of nonverbal communication in children of primary school age diagnosed with "F70 - mild mental retardation" and "F83 - specific mixed disorders of psychological development", one should note differential variations. Despite the fact that intellectual disabilities can be of a deeper and irreversible nature, the picture of underdevelopment of the components of the communicative sphere in children with various intellectual disabilities with diagnoses F70 and F83 (according to [42]) is generally similar - communication skills are much worse developed than in children with a level of intelligence within the age norm. They have significant communication difficulties; there is a smaller range of communication techniques. However, with mixed specific disorders of psychological development, these features are, as a rule, episodic in nature and are largely reversible [27].

Thus, the impact of intellectual disabilities with mild mental retardation on the cognitive, behavioural, and emotional-personal spheres of the communicative process naturally entails the emergence of serious difficulties in establishing contacts with people around them, and, therefore, in the process of social adaptation of a child as a whole.

DISCUSSION

Many foreign and Russian researchers have considered in their scientific publications the peculiarities of communication in children with intellectual disabilities. Let's analyse some works of foreign authors.

In the work of Cockerill, the features of communication of children with intellectual disabilities are highlighted. The author notes that learning disabilities and other problems can be a consequence of genetic diseases [20]. Children with intellectual disabilities may have limitations in the assimilation of new educational material, problems with speech, as well as significant difficulties in business communication. The author indicates the need and importance of the joint work of specialists, the child's family, and teachers. Additional and alternative communication options such as signatures, symbols, and various paralinguistic means of information

exchange can play an important role in developing social communication and the search for compensatory resources for a child's learning.

In the article *Playing it cool: Temperament, emotion regulation, and social behaviour in preschoolers,* the authors examined the complex aspects of the interaction between temperament regulation and emotional regulation and predicted social functioning quality [23]. The authors note that most of the research that scientists have done in the past has focused on predicting social competence and externalising problems. By using evidence-based research for a group approach to teaching emotion regulation that includes both parents and teachers, children can learn to socially interact with other children and adapt better in society.

McDaniel's research paper discusses a strategy for screening complex verbal, simple verbal, simple visual, and spatial-working memory [29]. The author noted that the strategy is described in such a way that it can be used by other professionals who are interested in testing the ability of their clients to store and retrieve newly obtained information. The procedure was found to discriminate well between different levels of mental retardation, correlate reasonably well with IQ, and have relatively good retest reliability.

Matheson's article looks at emotion recognition deficits. The author believes that this phenomenon is associated with aggression [40]. In this study, the author developed new techniques to study emotion identification skills in 19 aggressive and 15 non-aggressive adults with mental retardation. Emotion identification improved with an increase in the number of contextual cues in both groups. The obtained data are of practical importance for the study of models of aggression and subsequent clinical interventions.

Scientists Rodas, Zeedyk, and Baker, in their study, noted that children with mental retardation are at increased risk of developing other psychological disorders [43]. The researchers monitored children with intellectual disabilities and their parents. In the results of the work, the authors noted that the psychological health of parents affects the psychological state of children. The authors note that the father's depression was a significant moderator of the relationship between parenting and child behaviour problems.

The study, which was conducted by scientists in the article *Symptoms and development of anxiety in*

children with or without intellectual disability, is an important step towards the study of anxiety symptoms and disorders in children with moderate and borderline intellectual disabilities, as well as children with typical cognitive development [44]. The results of the study showed that children with intellectual disabilities have a higher level of anxiety over time. The value of the intervention is discussed in terms of the importance of screening and treating anxiety in children with intellectual disabilities.

CONCLUSIONS

This study theoretically examines the issue of communication features for children with intellectual disabilities, including mental retardation.

The ontogenetic sequence of the formation of means of communication with adults and with peers in children was considered. The process of adaptation of a younger student in a group of peers was considered. The author notes that adaptation in a peer group directly depends on the development of communicative abilities during an interaction, both verbal and nonverbal. The adaptation period becomes fundamental for the formation and development of communication skills in children with mild mental retardation. The author examined the level of development of communication skills and its impact on the quality of life of children with mild mental retardation.

Verbal and non-verbal communication in children with mild mental retardation was considered. In children with mild mental retardation, violations in verbal communication are manifested in the fact that they begin to speak at a later age, and the development of speech in such children significantly lags behind their peers. The author is inclined to believe that the main cause of violations in verbal communication in children with mild mental retardation is the systematic nature of violations. A weighty reason is also under the development of perception and intellect, which makes it difficult for children to competently build their speech and understand the emotional states of an interlocutor. A decrease in the level of intelligence in children negatively affects the formation of semantic connections between words. Another violation is motor impairment. This impedes the normal development of object interaction with the outside world and also significantly limits the possibilities of non-verbal communication since there are stable restrictions in facial expressions and gestures. Mild mental retardation in children is a

complex poly structural phenomenon characterised by a number of disorders that affect the development of their communication skills. Insufficient development of self-control and immaturity of emotional manifestations in children with intellectual disabilities were noted. This prevents a child from successfully socialising in society. In some cases, researchers have observed the child's desire for social isolation from society. However, when communicating with peers, children with mild mental retardation are characterised by a limited and inadequate expression of emotions, accompanied by changes in intonation and locomotion in various changing social situations.

After analysing all the above facts, it can be noted that impaired intelligence with mild mental retardation affects the cognitive, behavioural, and emotionalpersonal spheres of the communicative process, and also naturally entails the emergence of serious difficulties in establishing contacts with people around and in the process of socialisation of a child as a whole. The study presented in this paper includes expanded information on the characteristics of communication in children with intellectual disabilities. This work is of practical importance for teachers, psychologists, and doctors who work with children with intellectual disabilities.

ACKNOWLEDGEMENTS

None.

REFERENCES

- [1] Christensen L, Baker BL, Blacher J. Oppositional Defiant Disorder in children with intellectual disabilities. Journal of Mental Health Research in Intellectual Disabilities 2013; 6(3): 225-244. <u>https://doi.org/10.1080/19315864.2012.661033</u>
- [2] Jacobs E, Mazzone S, Simon P, Nader-Grosbois N. The unforeseen influence of parents' socialisation behaviors on the social adjustment of children with intellectual disabilities. Psychology 2019; 10(9): 1275-1301. https://doi.org/10.4236/psych.2019.109083
- [3] Melekhov DE. Social psychiatry and psychiatric clinic. Journal of neuropathology and psychiatry 1972; 73 (3): 389-396.
- [4] Galkina VA. Technology of the formation of self-control in the learning process in younger schoolchildren with mild mental retardation. Education and science 2015; 2 (121): 104-116. <u>https://doi.org/10.17853/1994-5639-2015-2-104-116</u>
- [5] Granovskaya RM, Nikolskaya IM. Psychological protection in children. Saint Petersburg: Rech 2001.
- [6] Abramenkova VV. Psychology of childhood in the context of the child's relationship in the world. Psychology issues 2002; 1: 3-16.
- [7] Abulkhanova-Slavskaya KA. Strategy of life. Moscow: Mysl 1991.
- [8] Ananiev BG. Man as a subject of knowledge. Saint Petersburg: Piter 2001.
- [9] Andreeva GM. Social Psychology. Moscow: Aspect-Press 2009.
- [10] Kolominskiy YaL, Rean AA. Social educational psychology. Saint Petersburg: Piter 1999.
- [11] Lisina MI. Formation of the child's personality in communication. Saint Petersburg: Piter 2009.

- [12] Elkonin DB. Age psychology. Moscow: Academy 2007.
- [13] Asmolov AG, Volodarskaya IA, Salmina NG, Burmenskaya GV. Cultural-historical system-activity paradigm of designing school education standards. Psychology issues 2007; 4: 16-23.
- [14] Lazursky AF. Personal classification. In: Gippenreiter YuB, editor. The psychology of individual differences. Moscow: CheRo 2000; p. 472-492.
- [15] Bodalev AA. Acmeology and modern problems of education. World of Education 2005; 2:13-25.
- [16] Kozlova EA, Ovchinnikova AA. Development and correction of the emotional-volitional sphere in primary school children with intellectual disabilities in the process of adaptation to school. Perm: PPGU 2014; p. 107-111.
- [17] Guslova MN, Sture TK. Psychological study of mothers raising disabled children. Defectology 2003; 6: 28-30.
- [18] Mastyukova EM, Moskovkina AG. Family education of children with developmental disabilities. Moscow: Vlados 2003.
- [19] Moskovkina AG, Pakhomova EV, Abramova AV. Study of stereotypes of teachers' and parents' attitudes towards a mentally retarded child. In: Dobryakov IV, Zashchirinskaia OV, editors. Psychology of the family and the sick child. St. Petersburg: Rech 2007; p. 376-379.
- [20] Cockerill H. Supporting communication in the child with a learning disability. Current Pediatrics 2002; 12 (1): 72-76. <u>https://doi.org/10.1054/cupe.2001.0251</u>
- [21] Hou L, Antion MD, Hu D, Spencer CM. Dynamic translational and proteasomal regulation of fragile X mental retardation protein controls mGluR-dependent long-term depression. Neuron 2006; 51 (4): 441-454. https://doi.org/10.1016/i.neuron.2006.07.005
- [22] Knapp M, Hall J, Horgan T. Nonverbal communication in human interaction. Boston: Cengage Learning 2013. <u>https://doi.org/10.1515/9783110238150</u>
- [23] Blair KA, Denham SA, Kochanoff A, Whipple B. Playing it cool: Temperament, emotion regulation, and social behaviour in preschoolers. Journal of School Psychology 2004; 42 (6): 419-443. https://doi.org/10.1016/j.jsp.2004.10.002
- [24] Mudrik AV. Generalisation in the process of education. Moscow: Pedagogical Society of Russia 2001.
- [25] Levchenko IYu, Tkacheva VV. Psychological assistance to a family raising a child with developmental disabilities. Moscow: Prosveshcheniye 2008.
- [26] Mallaev DM, Omarova PO, Bazhukova OA. Psychology of communication and behaviour of mentally retarded schoolchildren. Saint Petersburg: Rech, 2009.
- [27] Mamaichuk II. Psychological assistance to children with developmental problems. Saint Petersburg: Rech 2001.
- [28] Shipitsyna LM. Hearing impaired child in family and community. Saint Petersburg: Rech 2009.
- [29] McDaniel WF. A strategy for screening memory functions in individuals with mental retardation. Research in developmental disabilities 1998; 19 (4): 317-325. https://doi.org/10.1016/S0891-4222(98)00011-0
- [30] Winarni TI, Schneider A, Hagerman RJ. Early intervention combined with targeted treatment promotes cognitive and behavioural improvements in young children with fragile X syndrome. Case Reports in Genetics 2012. <u>https://doi.org/10.1155/2012/280813</u>

Received on 30-10-2020

Accepted on 10-11-2020

Published on 27-11-2020

DOI: https://doi.org/10.6000/2292-2598.2020.08.04.2

© 2020 Oksana V. Zashchirinskaia; Licensee Lifescience Global.

This is an open access article licensed under the terms of the Creative Commons Attribution Non-Commercial License (<u>http://creativecommons.org/licenses/by-nc/3.0/</u>) which permits unrestricted, non-commercial use, distribution and reproduction in any medium, provided the work is properly cited.

- [31] Ivanov ES, Isaev DN. Mental retardation: content, definition and modern theories of mental retardation. Home-schooling and rehabilitation for mentally retarded young people: a guide for parents. St. Petersburg: Publishing house of the St. Petersburg association of public associations of parents of disabled children "GAOORDI" 2000.
- [32] Isaev DN. Psychosomatic approach and model of psychosomatic disorders in children and adolescents. Clinical psychology 2003; 2: 148-152.
- [33] Rybnikov VYu, Zashchirinskaia OV. Phenomenology of agerelated patterns of communication disorders in children and adolescents with mild mental retardation. Psychotherapy bulletin 2013; 47: 71-85.
- [34] Rosenberg S, Abbeduto L. Language and communication in mental retardation: Development, processes, and intervention. New Jersey: Psychology Press 2013. https://doi.org/10.4324/9780203771624
- [35] Vuijk PJ. Motor performance of children with mild intellectual disability and borderline intellectual functioning. Journal of Intellectual Disability Research 2010; 54 (11): 955-965. <u>https://doi.org/10.1111/j.1365-2788.2010.01318.x</u>
- [36] Broman SH. Retardation in young children: a developmental study of cognitive deficit. London: Routledge 2013. <u>https://doi.org/10.4324/9780203056868</u>
- [37] Zashchirinskaia OV. Communication disorder in children and adolescents with mild mental retardation: phenomenology, model, socialisation: thesis of Doctor of Psychology. St. Petersburg: Nikiforozav All-Russian Centre of Emergency and Radiation 2013.
- [38] Tsvetkova LS. Technique of neuropsychological diagnosis of children. Moscow: Pedagogical Society of Russia 2000.
- [39] Jahoda A, Pert C, Trower P. Frequent aggression and attribution of hostile intent in people with mild to moderate intellectual disabilities: an empirical investigation. American Journal on Mental Retardation 2006; 111(2): 90-99. <u>https://doi.org/10.1352/0895-</u> 8017(2006)111[90:FAAAOH]2.0.CO;2
- [40] Matheson E, Jahoda A. Emotional understanding in aggressive and nonaggressive individuals with mild or moderate mental retardation. American Journal on Mental Retardation 2005; 110 (1): 57-67. <u>https://doi.org/10.1352/0895-</u> 8017(2005)110<57:EUIAAN>2.0.CO;2
- [41] Lamminpia AM, Zashchirinskaia OV, Shelepin YuE. Psychophysiological analysis of the processes of reading and understanding texts. Human physiology 2015; 41 (2): 23. <u>https://doi.org/10.1134/S0362119715020097</u>
- [42] International statistical classification of diseases and related health problems 10th revision. [cited 2016 Jul 7]: Available from: http://www.icd10data.com/About.
- [43] Rodas NV, Zeedyk SM, Baker BL. Unsupportive parenting and internalising behaviour problems in children with or without intellectual disability. Journal of Intellectual Disability Research 2016; 60 (12): 1200-1211. https://doi.org/10.1111/jir.12332
- [44] Green SA, Berkovits LD, Baker BL. Symptoms and development of anxiety in children with or without intellectual disability. Journal of Clinical Child and Adolescent Psychology 2015; 44(1): 137-144.

https://doi.org/10.1080/15374416.2013.873979