

# CORRECTION OF EMOTIONAL-VOLITIONAL SPHERE IN MENTALLY RETARDED PRESCHOOLERS WITH AUTISTIC SPECTRUM DISORDERS USING ELECTRONIC EDUCATIONAL RESOURCES

<sup>a</sup>EVGENIA V. ZOLOTKOVA, <sup>b</sup>MARINA A. LAVRENTYEVA, <sup>c</sup>OLGA S. GRISHINA

*Mordovian State Pedagogical University named after M. E. Evseviev, Studencheskaya str., 11 A, Saransk, Russia, 430007*

*email: <sup>a</sup>zzolotkova@yandex.ru, <sup>b</sup>lavrentyeva1866@yandex.ru, <sup>c</sup>grishina0609@yandex.ru*

Acknowledgments: The research was supported by the grant from the Russian Foundation for Basic Research on the topic "Designing Interventions in Special Education for Strengthening the Emotional-Volitional Sphere of Mentally Retarded Preschool Children with Autistic Spectrum Disorder" (N 20-013-00367 A).

**Abstract:** Underdevelopment of the emotional-volitional sphere in mentally retarded preschool children with autism spectrum disorders (ASD) causes significant social adaptation challenges for them. It has been proven that the effectiveness of interventions for enhancing the emotional-volitional sphere may be improved by the use of electronic resources that are seen as a highly promising tooling for developing the emotional-volitional adaptive skills of children with ASD, but there are no focused studies to support these assumptions in relation to the mentally retarded preschoolers with ASD. The paper reflects the results of the extrapolation of A-Spectrum game complex into the context of enhancement of the emotional-volitional sphere of mentally retarded preschoolers with ASD and provides scientific evidence of its pedagogical potential.

**Keywords:** emotional-volitional sphere, intervention, mentally retarded preschoolers, autism spectrum disorders, electronic educational resources.

## 1 Introduction

The term *emotional-volitional sphere* is mainly used in the applied research in studying the regulation of certain activities in certain conditions and is defined as the human characteristic reflecting the content, quality, and dynamics of his emotions and feelings, including the ways of their regulation. The emotional-volitional sphere of mentally retarded children with the autism spectrum disorders (ASD) is characterized by certain peculiarities arising from the concomitance of two "nuclear" deficiencies. According to the researchers, the distinctive feature of such children in the "triggering" of volition is the lack of intentions and motivation, and high suggestibility. In general, their activity is characterized by a lack of arbitrary regulation of behavioral acts, rapid satiety and impulsiveness. Emotions are superficial, diffusive, and weak; and not always commensurate with the situation. As a rule, child's emotional reactions and behavior are unpredictable even in familiar everyday situations. The complexity of the emotional-volitional disorders in this category of children requires special approaches to the interventions from psychological and pedagogical support specialists.

At the current stage, the psychological and pedagogical support for mentally retarded preschool children with ASD is marked by a certain contradiction: the urgent need to improve the efficiency of special education by introducing innovative educational tools, including electronic educational resources on the one hand, and insufficient domestic experience in this field, the limited use of innovative resources designed to support the indicated process and the lack of developments directly relating to this category of children with special needs, on the other hand. One of the ways to address this contradiction can be the analysis of collective experience accumulated by the professional community in the use of similar resources based on proper methodological foundations and developments. Consequently, the search for promising tools in the area of informatization-digitalization of support for people with disabilities should be carried out in the format of a targeted research aimed at unveiling their potential for work with mentally disabled preschool children with ASD. Thus, the need to identify the potential of the A-Spectrum game complex - the only electronic educational resource in Russian language available for children with ASD today - for enhancement of the emotional-volitional sphere in mentally

retarded preschool children with ASD heightens the relevance of this research.

## 2 Literature Review

Many researchers underline that the problem of development of emotional-volitional sphere is compounded in case of persistent and severe underdevelopment of cognitive and personal sphere. Organic lesion of the cerebral cortex in the intrauterine and early periods have a negative impact on the development of emotional-volitional sphere (Lebedinsky et al., 1990; Ogunde, 2018). Such children experience severe changes in the emotional-volitional sphere leading to the autonomy of basal emotions, their undifferentiation, limitation, and instability. The children with organic brain disorder were found to experience the reduced range of feelings and the extreme expressions of fun, joy, and sadness (Shipitsyna, 2005; Kisova & Komkova, 2019).

Mental retardation may be concomitant with any other form of atypical development. In considering cases of concomitant impairments - mental retardation and autism spectrum disorders - scientists tend to believe that each of the deficiencies in the multiple disorder gets amplified (Sturmey, 2002; Matson & Shoemaker, 2009; Lakhan, 2013; Morozov et al., 2016; Schuengel et al., 2019).

The researchers note that even with the mental development disorder of a general type, every child with ASD has profound individual distinctions, including the emotional reactions. The feelings shown by mentally retarded preschool children with ASD are flat, with two extremes of pleasure and dissatisfaction, characterized by instability, low differentiation, arising in response to a strong irritant, while actions of such children are imitative and follow a certain pattern. In most cases, the children belonging to the category under study predominantly experience self-centered emotions manifesting in a high appreciation of only those people who are significant and liked by a child (Joseph & Ittyerah, 2015; Gordeeva, 2018; Cibralic et al., 2019; Chaidi & Drigas, 2020).

Scientific papers emphasize that the volitional sphere in mentally retarded preschool children with ASD is severely underdeveloped. As a result, they have difficulties in controlling their behavior and actions. Their actions are impulsive. Such children do not show initiative, cannot subordinate their actions to the demands of adults, the group to which they are a part, do not set and are not willing to achieve the goals (Ageranoti-Belanger et al., 2012; Karpushkina & Vasyutina, 2019; Zolotkova & Tsyplakova, 2019).

Individualization is the centerpiece in special education for such children, and their educational trajectories need constant adjustment. In order to perform any task, or any activity, preschoolers need constant support from an adult, the guidance and encouragement motivating a child to achieve the end result, and to finish what was started (Shipitsyna, 2005; Semago, 2017; Evlampieva, 2017; Nikolskaya et al., 2019).

When reviewing possible approaches to positive interventions in the emotional-volitional sphere of mentally retarded preschool children with ASD, close attention should be given to information and communication technologies. Information and communication technologies are an indispensable part of the system of education, a tool for building the society of a new breed (Lavrentyeva & Melnikova, 2016). In the field of psychological and pedagogical support for children with health limitations, some experience has already been gained in the use of information and communication technologies for special education purposes (Arhipova & Sergeeva, 2015; Concepcion, 2017; Arkhipova et al., 2017; Arkhipova & Shemyreva, 2018). In the recent decade, the integration of information and communication technologies in education and socialization of

individuals with ASD is an urgent theoretical and practical challenge, which is in many ways tied into the specifics of their psychophysical and personal development (Mintz et al., 2012; Whyte et al., 2015). There is a certain number of web resources with information on autism, therapy methods, including video games that can help to develop necessary skills in children with ASD. Most of these resources are in English, such as <http://iautistic.com/>; <http://autism-apps.com/>; <https://autismapps.wikispaces.com/>; <http://learningworksforkids.com/>, there is also a Russian-language resource: <http://autism-info.ru/>. The resource <http://do2learn.com/> offers a few simple games for children with ASD: The Feelings Game allows to explore emotions of different people; The Facial Expressions helps a child to learn how to recognize different facial expressions by selecting and changing the position of the human face parts [<http://do2learn.com/games/facialexpressions/face.htm>]. It should be noted that the use of virtual reality tools and electronic educational resources in the development of emotional and social adaptation skills in children with ASD is presented at the most promising in the English-speaking sector (Ploog et al., 2013; Ip et al., 2018; Kumazaki et al., 2019).

One of the first Russian-language electronic educational resources is A-Spectrum, which offers interactive games for children with ASD (Mineeva O. & Mercibo) (Program and Didactic Complex of Games for Children with Autism A-Spectrum: Methodological Recommendations, 2020). This resource is a selection of specialized games that can be used in the work with children of different ages and having different level of development. It can be used in work with children unable to understand the speech of others, unable to speak, and when autism is concomitant with intellectual disability, and sensory impairment.

Summarizing the above, it should be underlined that mentally retarded preschoolers with ASD have severe emotional-volitional impairments, which can be tackled only through individualization of remedial action using electronic educational resources as the effective tools.

### 3 Research Methodological Framework

The purpose of the research was to extrapolate the A-Spectrum game complex into the context of intervention for enhancing the emotional-volitional sphere of mentally retarded preschool children with ASD and to identify its pedagogical utility for the targeted interventions in the indicated field. For achieving the stated purpose, the following objectives were established and addressed: theoretical underpinning of the use of the A-Spectrum game complex for enhancing the emotional-volitional sphere of mentally retarded preschool children with ASD; and testing, consolidation and discussion of the obtained results. The research was based on such methods as: theoretical - analysis of scientific literature and pedagogical phenomena reflecting various aspects concerned with the use of electronic resources for correction of the emotional-volitional sphere of mentally retarded preschool children with ASD; empirical - generalization, systematization and interpretation of pedagogical experience in this field (both own and collective accumulated by the whole pedagogical community); pedagogical design; comparative analysis and synthesis of empirical data based on the testing results of the A-Spectrum complex. The research was conducted on the basis of Kindergarten of Compensating Type N 91 in Saransk. Eleven children aged five to six participated in the research, four of them have intellectual underdevelopment and early infantile autism, and seven children have intellectual underdevelopment with autism symptoms. All children participating in the ascertaining experiment have a major defect, mental retardation (F-70 according to ICD-10), which is complicated by disorders in the emotional-volitional sphere.

## 4 Results and Discussion

### 4.1 Theoretical Underpinning for the Use of the Game Complex A-Spectrum to Enhance the Emotional-Volitional

### Sphere of Mentally Retarded Preschoolers with ASD and Its Testing

For revealing the specifics of the emotional-volitional sphere of mentally retarded preschool children with ASD at the preliminary stage of experimental research, the following methods were used: Emotional Faces (N. Ya. Semago, 2017) and Study of Understanding the Emotional States of People in the Picture (Yu. A. Afonkina, G. A. Uruntaeva), adjusted to the typological and individual peculiarities of the research participants.

Analysis of the data obtained by observation found significant deviations in the development of emotional-volitional sphere of mentally retarded preschool children with ASD. The majority of children had difficulties expressing their emotions and feelings about what was happening, and were superficial and showed lack of differentiation. Self-aggression, negativism, heightened anxiety, and mistrustfulness were observed in children's behavior. The preschoolers demonstrated the low sense of self-protection and the threshold of emotional discomfort in their relationships with the outer world. In the play activity, along with the observed energy, children found it hard to understand the adult's instructions and differentiate the emotional state of people around them by their gestures, body movements, and facial expressions, which is the main reason for inertia and inadequate emotional responses. All this has a significant impact on the emotional state, which disorder is associated with increased excitability and irritability. Children have low motivation for play, and insufficient volitional regulation, which leads to the lack of initiative, high suggestibility, and passivity when performing productive activities.

While 54.5% of mentally retarded preschoolers with ASD communicated freely when getting down to the diagnostic tasks referred to above, the rest of the children needed a preliminary conversation to get prepared for the tasks. Some preschoolers (36.4%) had great difficulties recognizing emotions, down to complete impossibility to identify certain emotions, despite the vivid realistic pictures offered to them. Some children (36.4%) reacted inadequately to the proposed pictures, showing self-aggression, focusing for too long on certain parts of the face, mainly teeth. Preschoolers assessed a face with teeth as wicked, even though it was a smile. When working on the task, 9% of children demonstrated high distractibility and restlessness, they were wandering around the room aimlessly, then got back to the task again. Qualitative characteristics: mentally retarded preschoolers with ASD have heightened anxiety, lack of imagination, in most cases, they are unable to adequately identify the emotional state, and have difficulties in recognizing emotions. Some children could only differentiate emotions with the help of an adult. It was especially difficult for them to repeat emotions depicted in the photographs, most of them failed this task.

The obtained diagnostic results served as a basis for designing the intervention targeted to overcome the revealed problems.

In the course of research, several intervention modules were designed, their content was tailored to the specific needs of such children as concerns their emotional-volitional sphere and was based on technical capabilities of the electronic educational resource A-Spectrum. The electronic educational resource A-Spectrum was adjusted to meet the research purpose. The positive features of the computer game complex A-Spectrum for children with autism spectrum disorders deserve to be mentioned. It strengthens the motivational readiness of children for classes; offers specialists a wide range of settings for varying degree of complexity to take into account the individual characteristics of children; and develops basic skills (watching and seeing, listening and performing, understanding and choosing) that cannot develop in the children of this category in the appropriate sensitive period without external assistance.

The first intervention module sought to train children's skill of visual perception of different emotional states and their comparison with a reference. We used a series of Perfect Match

games directed at matching the identical emotions by integral and differential attributes, their movement in space contributed to a clear visual representation of the demonstrated emotional state.

The next module of intervention targeted the skill of recognizing sounds characteristic of certain emotional expressions (laughter, crying; growling, hissing, purring, etc.). This module included a combination of games for comparing sound and image of a certain emotion (Hearing-Seeing-Guessing) which engage auditory-speech memory and auditory predictions.

The skill of naming an emotion (name-skill) and the skill of reproducing an emotion (echo-skill) were developed within the third module. This module was implemented based on such techniques as commenting (Guess the Action game), observation and commenting (Kitty-Kitty-Mew), matching the emotional state and its name (Word Trapper game), repetition of sound strings (Tick-Tock-Sounds game). The use of the ABA therapy elements helped to drill the skill of naming and reproducing an emotion consisting of the name-skill and the echo-skill.

Another intervention module strengthened the skill of distinguishing different emotions and behaviors based on their functions, attributes and categories (different behavioral acts, situations with moral bearings). It engages complex perception, analysis, synthesis of emotional states and behavioral patterns in the simplest everyday situations based on interactions within the adult-child and peer-peer dyads.

For measuring the effectiveness of intervention, the post-intervention check was held, which confirmed positive changes in the development of the emotional-volitional sphere of the experiment participants, as evidenced by higher qualitative and quantitative results after targeted intervention with the use of an electronic educational resource A-Spectrum.

#### 4.2 Consolidation and Discussion of the Obtained Results

The great benefit of the A-Spectrum electronic educational resource is the continuous tracking of the task success analytics for each participant. Results are provided in the graphs showing the history of child's victories in each game over a certain time interval. The analytics of qualitative task performance indicators allows to see the dynamics of task success in the games over a chosen period of time, and improvement or decline in the quality of game tasks performance. Each point on the graph represents the ratio of correct actions to the total number of actions in the game. All games (those that ended with victory and those that were not completed) are taken into account. Also the graph shows the time (average or total) spent on successful passing of the game over a chosen time interval. The analytical data allows to build an individual trajectory of intervention tailored to individual features of each participant.

However, the organic brain lesion in the children leading to persistent intellectual disorders, compound underdevelopment of speech in combination with dysontogenesis of distorted type significantly reduced the effectiveness of intervention. Tasks targeting the children's ability to compare the image of an emotion and its verbal denomination turned out to be especially challenging. Games that required engagement of the auditory-speech memory and the auditory prediction capabilities to cope with the tasks, in most cases, caused strongly negative reactions of preschoolers. Complex perception, analysis, synthesis of emotional states and behavioral patterns, even in everyday situations well familiar to the child, were almost impossible. The intervention focused on enhancing the skill of distinguishing emotional and behavioral expressions by their functions, attributes and categories, and of recognizing different behavioral acts and situations with moral bearings consumed a considerable amount of time but yielded little success. It can be argued that the process of special education requires from a special education teacher constant adjustment of the employed methods and content, use of individualized approaches and creation of the most optimal conditions to implement the appropriate intervention. After two months of regular targeted intervention

sessions, the low dynamics was observed in 30% of children. The overcoming of stagnation became possible through multiple repetitions of the same material, delayed introduction of new elements into the process of education, and constant consolidation of the learned skills.

However, in general, we may assert that the implemented intervention had a positive impact on the emotional-volitional sphere in mentally retarded children with autism spectrum disorders, helped to address some distortions in the perception of emotional expressions, to broaden the children's understanding of emotional states and people's feelings, and helped children to learn adequate behavior patterns in the simplest everyday situations. Therefore, the use of a specialized electronic educational resource for more effective intervention to enhance the emotional-volitional sphere of mentally retarded preschool children with ASD yields positive results.

#### 5 Conclusion

The conducted research ascertained that the enhancement of emotional-volitional sphere of mentally retarded children with ASD may become more effective with the targeted intervention relying on the A-Spectrum game complex as one of its powerful resources. Its adjustability to the research purposes makes it possible to strengthen the children's skills of recognizing and reproducing various emotional states, which helps them to adequately interact with peers and adults in common everyday situations. The implemented intervention is unique in that it used thus far the only Russian-language electronic educational resource taking into account age, typological and individual characteristics of such children.

The materials produced by the authors may be useful for the psychological and pedagogical support specialists working with this category of preschoolers with special needs in their research and practice.

#### Literature:

1. Ageranioti-Belanger, S., Brunet, S., D'Anjou, G., Tellier, G., Boivin, J., Gauthier, M.: *Behaviour Disorders in Children with an Intellectual Disability*. Paediatrics & Child Health, 17(2), 2012. 84-88 pp. Available from <https://doi.org/10.1093/pch/17.2.84>
2. Arhipova, S. V., Bobkova, O. V., Gamajunova, A. N., Zolotkova, E. V., Minayeva, N. G., Ryabova, N. V., Babushkina, L. E.: *Specific Aspects of Information and Communication Technologies Application by Teachers within the Inclusive Education*. Ponte, 73(10), 2017. 77-88 pp. Available from <http://www.pontejournal.net/mainpanel/abstract.php?TOKEN=gRkgF5411G&PID=PJ-WLGCV>
3. Arhipova, S. V., Sergeeva, O. S.: *Features of the Information and Communication Technology Application by the Subjects of Special Education*. International Education Studies, 8(6), 2015. 162-170 pp. Available from <https://www.learntechlib.org/p/161594/>
4. Arhipova, S. V., Shemyreva, S. Yu.: *Use of Information and Communication Technologies by the Specialists Providing Support to Children with Multiple Developmental Disorders*. Problems of Modern Pedagogical Education, 58-2, 2018. 18-24 pp. Available from <https://www.elibrary.ru/item.asp?id=32636374>
5. Chaidi, I., Drigas, A.: *Autism, Expression, and Understanding of Emotions: Literature Review*. International Journal of Online Engineering, 16, 2020. 94-111 pp. Available from [https://www.researchgate.net/publication/339210193\\_Autism\\_Expression\\_and\\_Understanding\\_of\\_Emotions\\_Literature\\_Review](https://www.researchgate.net/publication/339210193_Autism_Expression_and_Understanding_of_Emotions_Literature_Review)
6. Cibralic, S., Kohlhoff, J., Wallace, N., McMahon, C., Eapen, V.: *A Systematic Review of Emotion Regulation in Children with Autism Spectrum Disorder*. Research in Autism Spectrum Disorders, 68, 2019. DOI: 10.1016/j.rasd.2019.101422. Available from [https://www.researchgate.net/publication/336839617\\_A\\_systematic\\_review\\_of\\_emotion\\_regulation\\_in\\_children\\_with\\_Autism\\_Spectrum\\_Disorder](https://www.researchgate.net/publication/336839617_A_systematic_review_of_emotion_regulation_in_children_with_Autism_Spectrum_Disorder)

7. Concepcion, H.: *Video Game Therapy as an Intervention for Children With Disabilities: Literature Review and Program Protocol*. Therapeutic Recreation Journal, 51(3), 2017. Available from <https://doi.org/10.18666/TRJ-2017-V51-I3-8416>
8. Evlampieva, G. A.: *Theoretical and Intervention Approaches to Socialization of Autistic Preschool Children Established in the Russian Special Psychology*. Universum: Educational Psychology, 2(32), 2017. Available from <http://7universum.com/ru/psy/archive/item/4262/>
9. Gordeeva, E. P.: *Complex Approach to the Nature of Emotional States in Mentally Retarded Preschoolers with Autistic Spectrum Disorders*. Academic Publicistic Writings, 4, 2018. 152-158 pp. Available from <https://www.elibrary.ru/item.asp?id=34900045>
10. Ip, H. H. S., Wong, S. W. L., Chan, D. F. Y., Byrne, J., Li, Ch., Yuan, V. S. N., Lau, K. S. Y., Wong, J. Y. W.: *Enhance Emotional and Social Adaptation Skills for Children with Autism Spectrum Disorder: A Virtual Reality Enabled Approach*. Computers & Education, 117, 2018. 1-15 pp. Available from <https://doi.org/10.1016/j.compedu.2017.09.010>
11. Joseph, L., Ittyerah, M.: *Recognition and Understanding of Emotions in Persons with Mild to Moderate Mental Retardation*. J. Psychosoc. Rehabil. Ment. Health, 2, 2015. 59-66 pp. Available from <https://doi.org/10.1007/s40737-014-0019-9>
12. Karpushkina, N. V., Vasyutina, S. V.: *Improvement of Emotional Self-Regulation in Mentally Retarded Preschoolers*. Problems of Modern Pedagogical Education, 65-2, 2019. 328-331 pp. Available from <https://www.elibrary.ru/item.asp?id=42331428>
13. Kisova, V. V., Komkova, K. O.: *Specifics of Emotional Conditions of Mentally Retarded Senior Preschoolers*. Scientific Review. Pedagogical Sciences, 3-1, 2019. 41-45 pp. Available from <https://www.elibrary.ru/item.asp?id=38506230>
14. Kumazaki, H., Warren, Z., Swanson, A., et al.: *Brief Report: Evaluating the Utility of Varied Technological Agents to Elicit Social Attention from Children with Autism Spectrum Disorders*. Journal of Autism and Developmental Disorder, 49(4), 2019. 1700-1708 pp. Available from <https://europepmc.org/article/med/30511126>
15. Lakhan, R.: *The Coexistence of Psychiatric Disorders and Intellectual Disability in Children Aged 3-18 Years in the Barwani District, India*. International Scholarly Research Notices, 2013, Article ID 875873. 6 p. Available from <https://doi.org/10.1155/2013/875873>
16. Lavrentyeva, M. A., Melnikova, E. E.: *Electronic Educational Resources in Speech Therapy Practice*. Modern Knowledge Intensive Technologies, 9-3, 2016. 520-524 pp. Available from <http://top-technologies.ru/ru/article/view?id=36262>
17. Lebedinsky, V. V., Nikolskaya, O. S., Baenskaya, E. R., Liling, M. M.: *Emotional Disorders in Childhood and Their treatment*. Moscow: Publisher of MSU, 1990. 196 p. ISBN 5-211-01090-2. Available from <http://www.autism.ru/read.asp?id=69&vol=0>
18. Matson, J. L., Shoemaker, M.: *Intellectual Disability and its Relationship to Autism Spectrum Disorders*. Research in Developmental Disabilities, 30(6), 2009. 1107-1114 pp. ISSN 0891-4222. Available from <https://doi.org/10.1016/j.ridd.2009.06.003>
19. Mintz, J., Branch, C., March, C., Lerman, St.: *Key Factors Mediating the Use of a Mobile Technology Tool Designed to Develop Social and Life Skills in Children with Autistic Spectrum Disorders*. Computers & Education, 58(1), 2012. 53-62 pp. ISSN 0360-1315. Available from <https://doi.org/10.1016/j.compedu.2011.07.013>
20. Morozov, S. A., Morozova, T. I., Belyavsky, B. V.: *On the Question of Mental Retardation Concomitant with Autism Spectrum Disorders*. Autism and Developmental Disorders, 14(1), 2016. 9-18 pp. Available from <https://www.elibrary.ru/item.asp?id=26191982>
21. Nikolskaya, O. S., Baenskaya, E. R., Liling, M. M.: *Autistic Child: Ways to Help*. Moscow: Terevinf, 2019. 289 p. ISBN 978-5-4212-0557-9. Available from <https://lib.rucont.ru/efd/703501>
22. *Program and Didactic Complex of Games for Children with Autism A-Spectrum: Methodological Recommendations*. Mersibo LLC, 2020. 38 p. Available from <https://mersibo.ru/shop/a-spektr>
23. Ogunde, M. O.: *Behavioural and Emotional Disorders in Childhood: A Brief Overview for Pediatricians*. World J Clin Pediatr, 7(1), 2018. 9-26 pp. Available from <https://www.wjgnet.com/2219-2808/full/v7/i1/9.htm>
24. Ploog, B. O., Scharf, A., Nelson, D., et al.: *Use of Computer-Assisted Technologies (CAT) to Enhance Social, Communicative, and Language Development in Children with Autism Spectrum Disorders*. Journal of Autism and Developmental Disorder, 43(3), 2013. 301-322 pp. Available from <https://doi.org/10.1007/s10803-012-1571-3>
25. Schuengel, C., van Rest, M. M., Stanford, C. E., Hastings, R. P.: *Impact of Research About the Early Development of Children with Intellectual Disability: A Science Mapping Analysis*. Frontiers in Education, 4:41, 2019. Available from <https://www.frontiersin.org/articles/10.3389/educ.2019.00041/full>
26. Semago, N. Y.: *Intervention to Enhance the Affective-Emotional Sphere in Children at Risk of Autism Disorders*. In Inclusive education: Continuity in inclusive culture and practice: Proceedings of the Fourth International Research & Practice Conference; June 21-23, 2017. Moscow: Moscow State University of Psychology and Education, 2017. 504-511 pp. Available from <https://www.elibrary.ru/item.asp?id=29733549>
27. Shipitsyna, L. M.: *An "Ineducable" Child in Family and Society. Socialization of Children with Intellectual Disabilities*. Saint Petersburg: Speech, 2005. 477 p. Available from <https://infourok.ru/shipicinalm-neobuchaemiy-rebenok-v-semei-obschestve-1301906.html>
28. Sturmey, P.: *Mental Retardation and Concurrent Psychiatric Disorder: Assessment and Treatment*. Current Opinion in Psychiatry, 15(5), 2002. 489-495 pp. Available from [https://journals.lww.com/co-psychiatry/Abstract/2002/09000/Mental\\_retardation\\_and\\_concurrent\\_psychiatric.5.aspx](https://journals.lww.com/co-psychiatry/Abstract/2002/09000/Mental_retardation_and_concurrent_psychiatric.5.aspx)
29. Whyte, E. M., Smyth, J. M., Scherf, K. S.: *Designing Serious Game Interventions for Individuals with Autism*. Journal of Autism and Developmental Disorder, 45, 2015. 3820-3831 pp. Available from <https://doi.org/10.1007/s10803-014-2333-1>
30. Zolotkova, E. V., Tsypliyakova, I. V.: *Theoretical and Practice-Oriented Foundations for the Development of the Emotional-Volitional Sphere in Preschool Children*. In N. V. Ryabova (Ed.), Education for Persons with Health Limitations: Theory, Practice and Prospects: Monograph. Saransk: Editing and Publishing Center of MSPI, 2019. 9-46 pp. ISBN 978-5-8156-1068-2. Available from <http://library.mordgpi.ru/ProtectedView/Book/ViewBook/1450>

#### Primary Paper Section: A

Secondary Paper Section: AM, AN, FG, FL