

7. Naidonova, L., Voznesenska, O., Sknar, O. (2020). Prostir artterapii: tvorchist yak zadzerkallia realnosti [The space of art therapy: creativity as a mirror of reality]. Kyiv : FOP Nazarenko. [in Ukrainian].
8. Chernikova, O. (2025). Verbalnyi i neverbalnyi ta kompleksnyi memy: klasyfikatsiia za sposobom podannia ta spryiniattia informatsii v Internetseredovyschi (na materialy anhlomovnykh kinomemiv) [Verbal, non-verbal and complex memes: classification by the method of presenting and perceiving information in the Internet environment (based on English-language movie memes)]. Visnyk Kyivskoho natsionalnoho linhvistychnoho universytetu. Seriia Filolohiia. 18 ( 1), 151–156. [in Ukrainian].
9. Jung, C. G. (1964). Man and His Symbols. London: Aldus Books. [in English].
10. Lüscher, M. (1990). The Lüscher Color Test. New York: Pocket Books. [in English].
11. Goethe, J. W. von. (1970). Theory of Colours. Cambridge, MA: MIT Press. [in English].
12. Prokhorenko, L. I., & Zasenka, V. V. (2024). Inclusive and Barrier-Free Education for Persons with Special Needs in the Context of War: An Experimental Study. *Osoblyva dytyna: navchannia i vykhovannia*, 116(4), 193–210. [in Ukrainian].

***Матеріал надійшов до редакції 5.12. 2025 р.***

**УДК 159.946.4:159.922.7:616.855**

**Крістіна Тороп,**

доктор педагогічних наук,

старший науковий співробітник відділу освіти дітей з порушеннями інтелектуального розвитку

Інституту спеціальної педагогіки і психології

імені Миколи Ярмаченка НАПН України

E-mail: torop.kristina@gmail.com

ORCID iD 0000-0002-2330-1960

**Тетяна Дрюк,**

вчитель-дефектолог вищої категорії, вчитель-методист

директор КЗО «Дніпропетровський обласний методичний ресурсний центр» ДОР»

E-mail: [ntp77@ukr.net](mailto:ntp77@ukr.net)

**Анастасія Дрюк,**

магістр з української філології: літературні та мовнокомунікативні студії  
Національний університет «Острозька академія»,  
вчитель КЗО «Спеціальна школа» ШАНС «ДОР»  
E-mail: anasyasiadruk16@gmail.com

**Kristina Torop,**

Doctor of Pedagogical Sciences

Senior Researcher

Mykola Yarmachenko Institute of Special Pedagogy and Psychology  
of the NAES of Ukraine

E-mail: torop.kristina@gmail.com

ORCID iD 0000-0002-2330-1960

**Tetiana Driuk,**

Teacher-Defectologist of the Highest Category, Methodologist Teacher

Director Municipal Educational Institution

«Dnipropetrovsk Regional Methodological Resource Centre»

of the Dnipropetrovsk Regional Council

E-mail: [dtp77@ukr.net](mailto:dtp77@ukr.net)

**Anastasiia Driuk,**

Master's Degree in Ukrainian Philology: Literary and Linguo-Communicative Studies The National  
University of Ostroh Academy

Teacher Municipal Educational Institution

«Special School 'Shans»

of the Dnipropetrovsk Regional Council»

E-mail: anasyasiadruk16@gmail.com

**ПСИХОЛІНГВІСТИЧНІ ОСОБЛИВОСТІ МОВЛЕННЄВОГО ТА ЕМОЦІЙНОГО  
РОЗВИТКУ ДІТЕЙ З ІНТЕЛЕКТУАЛЬНИМИ ПОРУШЕННЯМИ, РОЗЛАДАМИ  
АУТИСТИЧНОГО СПЕКТРА Й СЕЛЕКТИВНИМ МУТИЗМОМ**

**PSYCHOLINGUISTIC FEATURES OF SPEECH AND EMOTIONAL DEVELOPMENT IN  
CHILDREN WITH INTELLECTUAL DISABILITIES, AUTISM SPECTRUM  
DISORDERS, AND SELECTIVE MUTISM**

**Анотація.** У статті здійснено спробу описати психолінгвістичні особливості мовленнєвого та емоційного розвитку дітей з інтелектуальними порушеннями, розладами аутистичного спектра та селективним мутизмом. Дослідження ґрунтується на аналізі мовленнєвих проявів, емоційно-комунікативних реакцій та стратегій опрацювання мовної інформації з-за допомогою моделі емоційної регуляції й сучасних уявлень науковців про нейробіологічні механізми, які пов'язані з роботою мигдалин та медальної скроневої частки – структури, які відіграють вирішальну роль у кодуванні емоційно значущих мовних сигналів. Зокрема, спираючись на актуальні емпіричні дослідження, у статті висвітлено, що ігрові, візуальні та психолінгвістично структуровані методики можуть істотно підтримувати розвиток дітей з інтелектуальними порушеннями, аутизмом чи селективним мутизмом. Запропонований комплекс інтервенцій спрямовано на активізацію розвитку ключових мовних рівнів – фонологічного, семантичного, морфологічного, наративного – одночасно регуляцією афективних процесів, зменшенням інтенсивності тривожних проявів і підсилення мовленнєвої мотивації дитини. Автори статті наголошують на потребі подальших емпіричних робіт і розробленні спеціалізованих програм підготовки майбутніх педагогів.

Перспективи дослідження полягають у подальшому розробленні та апробації програм психологічної й психолінгвістичної підтримки, спрямованих на посилення психологічної стійкості, розвитку мовленнєвої діяльності й формування адаптивних комунікативних стратегій у дітей з інтелектуальними порушеннями, розладами аутистичного спектра та селективним мутизмом.

**Ключові слова:** психолінгвістика; лінгвістика; мовознавство; регулювання емоцій; розлади аутистичного спектра; селективний мутизм.

**Abstract.** The aim of the article is to define the psycholinguistic characteristics of speech and emotional development of intellectually disabled children, children with autism spectrum disorders and selective mutism as a study of manifestations of speech, emotional and communicative responses and mediators of linguistic information processing in reference to a model of emotional regulation and the known functioning of the amygdala and medial temporal lobe neurobiological processes, responsible for the representation of emotionally determined linguistic stimuli.

In specific, the article confirms based on empirical studies based on empirical research, that game-based, visual and psycholinguistic methods are highly effective in development for intellectually disabled children or those with autism or selective mutism. The compilation of mediators seeks to facilitate the connection to essential levels of linguistic development – in phonetic, semantic, morphological, narrative –through mediating impact on effective processes to decrease the overcompensation of anxiety symptoms and increase communicative motivation within the child.

Limitations of the study note future empirical studies and specialized curriculum need for prospective educators.

The projected research is within the realm of future expansion and testing of programs for psychological and psycholinguistic facilitation of intervention aimed at increasing psychological resilience, mediation of speech activity and development of adaptive communication strategies in intellectually disabled children, children with autism spectrum disorders and children with selective mutism.

**Key words:** psycholinguistics; linguistics; language sciences; emotion regulation; autism spectrum disorders; selective mutism.

**Introduction.** Current research on the speech and emotional development of children with intellectual disabilities, autism spectrum disorders, and selective mutism is a multi-component process, the structure of which intertwines neurobiological, psycholinguistic, and social factors. Speech development in these categories of children involves mastering lexical, grammatical, and phonetic structures, as well as developing mechanisms for perceiving, processing, and interpreting speech, which is associated with the functioning of cognitive and emotional-affective mechanisms.

Children with intellectual disabilities, autism spectrum disorders and selective mutism may experience difficulties in mastering lexical and grammatical structures, in the semantic processing of speech and in the use of language for communication.

Limited word-formation skills, reduced initiation of speech acts, difficulties in dialogical interaction, and the construction of narrative statements are often accompanied by emotional complications such as avoidance of communication and increased intensity of anxiety manifestations. Emotional states, anxiety levels, and the effectiveness of emotional regulation significantly modulate speech activity, determining individual patterns of communicative behaviour.

In the context of inclusive education, comprehensive research into the interaction of speech and emotional processes in children is particularly relevant. Therefore, an essential aspect of ensuring the effectiveness of such support is the training of teaching staff, which is seen as the transfer of specialised knowledge and the formation of professional competence, including the ability to carry out differentiated diagnosis of

educational needs, apply psycholinguistically and neuropsychologically based support strategies, and organise a inclusive educational environment for children with typical development and those with developmental disorders.

Such analysis is necessary for the scientific justification of corrective and developmental interventions, the formation of psycholinguistic support models, and the development of educational programmes capable of improving the quality of communication for children with complex developmental disorders.

**Analysis of relevant research.** Research into the speech and emotional development of children with intellectual disabilities, autism spectrum disorders and selective mutism is highlighted in the field of modern psycholinguistic and neurolinguistic approaches. The study of emotional regulation includes J. Gross's procedural model, which treats emotions as a dynamic process and describes possible points of regulatory influence (Gross, 2014). In particular, F. Dolcos' neuroimaging research demonstrates the critical role of the amygdala-medial temporal lobe system in encoding and storing emotionally significant information (Dolcos, 2004). In addition, the linguistic and psycholinguistic features of speech development in autism spectrum disorders are highlighted in the works of I. Eigsti and L. Bennetto, who found that the morphosyntactic system develops unevenly, along alternative trajectories, and that grammatical constructions in most children are simplified and structurally deficient (Eigsti & Bennetto, 2007). Semantic difficulties in children with autism spectrum disorders have been studied and analysed in depth by S. Norbury.

The researcher identified limited categorisation, reduced contextual integration, and difficulties in interpreting ambiguous statements (Norbury, 2017). I. Nedoziy has made a significant contribution to the field of pedagogy and corrective work with children with autism spectrum disorder. The researcher identified eight methods for developing social and communication skills. Her research confirms the effectiveness of comprehensive, multi-level programmes that combine behavioural, visually mediated, and socially oriented strategies (Nedoziy, 2021). Another scientific achievement is the work of M. Koskela, which, based on a systematic review, highlighted the high comorbidity of selective mutism with speech disorders and the significant dynamics of verbal activity recovery with early intervention (Koskela,

2023). Practical protocols for behavioural therapy and the method of gradually increasing the intensity of communicative stimuli were studied in detail and developed by R. Bergman, who highlighted the effectiveness of gradually expanding speech situations to overcome speech blockages in children with selective mutism (Bergman, 2013). The scientific works considered outline the basic theoretical models and empirical data that form the basis for psycholinguistically grounded interventions, which is the main goal of this study.

**Aim of the Study.** The aim of the study is to identify psycholinguistic features of speech and emotional development in children with intellectual disabilities, autism spectrum disorders, and selective mutism.

**Research Methods.** A comprehensive interdisciplinary approach was used, integrating the principles of psycholinguistics, special education, neuropsychology, and inclusive education. The combination of comparative analytical, theoretical analysis and structural-functional methods provided a comprehensive analysis of the speech and emotional-regulatory characteristics of children with intellectual disabilities, autism spectrum disorders and selective mutism.

Using comparative analytical and theoretical and methodological analysis, the authors systematised contemporary scientific views on linguistic and psycholinguistic models of speech development speech processing and production mechanisms, and identified common and differential characteristics of the semantic, grammatical and dialogical development of children in nosological groups. The structural-functional approach highlighted speech as an integrated system in which phonetic-phonological, lexical-semantic, and morphological-syntactic aspects are closely related to cognitive and emotional processes.

**Results.** Emotions play an important regulatory role: they direct attention to significant stimuli, enhance sensory perception, facilitate the selection of behavioural responses, and facilitate social interaction. In children with intellectual disabilities, autism spectrum disorders, and selective mutism, emotional processes are often impaired because these children suffer from poor concentration, difficulties in processing sensory signals and maintaining social contact, etc., which in turn affects speech comprehension, motivation to communicate, and the ability to form verbal

expressions. Therefore, emotional regulation is an important factor in the psycholinguistic development of children, as its disruption complicates the process of speech interaction, in particular the establishment of interpersonal communication. F. Dolcos neuroimaging studies show that emotionally saturated stimuli activate the amygdala, which, in turn, enhances the work of the medial temporal lobe, primarily the hippocampus and parahippocampal structures of the brain. This enhancement promotes more effective encoding, memory retention, and information retrieval. In children from specific diagnostic groups, the functioning of the amygdala–medial temporal lobe system is impaired in a number of cases (Dolcos, 2004). These neurobiological processes cause atypical mechanisms of memorising emotionally significant events, as well as reduced sensitivity to emotionally charged speech, difficulties with intonational expressiveness and unstable emotional-communicative reactions.

In addition, important theoretical research has been conducted by J. Gross, according to whom emotion is viewed as a dynamic sequence of processes: “situation – attention – evaluation – emotional response” (Gross, 2014). Emotions are formed as a result of an individual's interaction with a contextually important situation, directing attention to significant stimuli, activating cognitive evaluation, and forming a coordinated multi-level response – physiological, behavioural, and subjectively experienced. It is important that the emotional response itself changes the initial situation, creating a new cycle of emotional processing. For children with intellectual disabilities, autism spectrum disorders, and selective mutism, impairments in attention processes, cognitive evaluation, and sensory signal integration lead to atypical formation of emotional responses: emotions either do not correspond to the situation, are excessive or reduced in intensity, or are insufficiently modulated by the communicative context. Thus, according to the psycholinguistic view, emotional processes perform leading regulatory and modulating functions in speech development. They form the parameters of the intonational-prosodic organisation of utterances, influence the semantic clarification and selective actualisation of lexical units, ensure adequate recognition and interpretation of the communicative intentions of the interlocutor, and coordinate speech behaviour in conditions of social interaction.

One of the leading theoretical approaches to understanding emotional regulation is J. Gross 's procedural model. The researcher identifies five sequential and cyclical points of regulatory intervention, namely: situation selection, situation modification, attention direction, cognitive change, and response modulation (Gross, 2014). Its transdiagnostic nature makes the model particularly suitable for analysing emotional dysregulation in children with complex developmental disorders, as it allows for the investigation of mechanisms of impaired emotional processing regardless of nosological diagnosis.

Therefore, according to the model, the emotional response does not complete the cycle, but changes the initial situation, forming new emotional-cognitive conditions that become the basis for the next act of regulation.

First of all, the psycholinguistic characteristics of children with autism spectrum disorders are caused by a complex of disorders in the linguistic, cognitive and socio-communicative spheres, which, in turn, cover verbal and non-verbal communication. Most children with autism spectrum disorders experience systemic difficulties at the semantic level, i.e. limited vocabulary, difficulties in establishing categorical connections and understanding interpreting abstract concepts; at the syntactic level simplified syntactic structures, limited ability to construct complex statements; at the pragmatic level, which includes the ability to perform speech acts, interpret indirect statements, understand and be aware of implicatures, the premises of statements, and the rules of social interaction in speech, these aspects are most often found to be impaired in children with autism spectrum disorder (Weiss, & Thomson, 2014). At the level of intonational and rhythmic organisation of speech, children with autism spectrum disorder typically exhibit atypical intonational contours, disturbances in tempo, rhythm and speech methodology, which ultimately complicates the communication of communicative intentions.

The combination of linguistic, psycholinguistic, and communicative-pragmatic features forms a unique structural and functional profile of speech development in children with autism spectrum disorder and determines their unique, often atypical trajectory of emotional regulation and social interaction, which differs significantly from normative models of communicative ontogenesis (Williams & Botting, 2008).



Speech disorders in autism spectrum disorder are characterised by a high degree of heterogeneity and variability in phenotypic manifestations, namely: in most children, moderate speech and semantic-pragmatic integration disorders can be observed, while others demonstrate pronounced structural speech deficits or even a complete absence of functional verbal speech. However, existing studies indicate that the disorders relate to the structural and cognitive complexity of speech and, above all, to emotional semantics.

In addition, the phonological level of speech in some children with autism spectrum disorder remains relatively intact, although morphological and syntactic components develop slowly and unevenly. Speech is characterised by grammatical agreement disorders, incorrect use of morphemes, delayed development of the structural organisation of utterances, etc. (Weiss & Thomson, 2014).

However, with higher levels of intellectual functioning often retain echolalic speech, which indicates an alternative, atypical path to mastering the speech system. According to neuropsycholinguistic studies, these speech disorders are caused by the specific functioning of the brain networks responsible for speech processing, namely: a decrease in the functional connectivity of the lateral temporal areas, atypical patterns of activation of prefrontal structures, and discoordination between the systems of speech and emotional perception. Neurocognitive features complicate the formation of coherent speech utterances and emotional-pragmatic colouring. It is worth considering the work of Eigsti and Bennetto, which further confirms early-stage difficulties in speech processing in children with autism spectrum disorders, which directly affect the further understanding and interpretation of utterances. In their scientific work 'Beyond Pragmatics: Morphosyntactic Development in Autism, the researchers analysed more than a hundred spontaneous utterances and demonstrated that the morphosyntactic system of children with autism spectrum disorders develops unevenly: children spoke grammatically less complex constructions and had difficulties with grammatical agreement and the construction of structurally complete sentences (Eigsti, & Bennetto, 2007). It is important to note that the authors identified an atypical path of grammatical rule acquisition, in which the level of grammatical complexity did not correlate with overall speech development.

That is, scientists note a tempo delay and the specificity of morphosyntactic ontogenesis in autism spectrum disorder.

In addition, the semantic sphere of speech is characterised by persistent difficulties in forming lexical-semantic connections. According to Norbury's research, individuals with autism spectrum disorders have limitations in understanding and interpreting words, difficulties in matching linguistic units with corresponding concepts in selecting appropriate lexemes for communication. Ultimately, these impairments complicate the processing of more complex sentences that have hidden meanings, connotations, or multi-level semantic structures. According to Norbury's research, semantic deficits are related to the linguistic organisation of the lexicon and the contextual integration of information, which ultimately shapes the specific semantic profile of this group of children (Norbury, 2017).

In her scientific work, I. Nedozyim summarised and scientifically substantiated eight effective methods for developing the social and communication skills of children with autism spectrum disorders. These include: 'Peer-mediated intervention and instruction,' which promote the formation of socially desirable responses; 'Behaviour management training,' aimed at developing self-regulation; individually created 'Social Stories'; 'Social skills training'; 'Structured play groups', which provides a supportive environment for interaction; 'Technology-based instruction and intervention'; 'Video modelling'; and 'Visual supports' (Nedozyim, 2021).

Thus, the systematisation of scientific methods highlights the effectiveness of a comprehensive approach to the development of social and communication skills.

Selective mutism is an anxiety disorder in childhood that manifests itself in a persistent, situationally conditioned refusal to speak or a sharp decrease in speech production in certain social situations, while in others children, in emotionally safe conditions, speech functioning remains at an age-appropriate or near-normal level (Muris, & Ollendick, 2021). First and foremost, this manifests itself in the absence of verbal responses to the teacher's questions or instructions, or unwillingness to engage in verbal interaction with others, while at home the child exhibits full speech and communicative activity.

Selective mutism is highly comorbid with a number of mental and speech disorders, which significantly complicates differential diagnosis.

According to clinical observations and systematic reviews by specialists, approximately 38% of children with selective mutism have pre-existing speech or language disorders, confirming the assumption that they avoid speech due to fear of mistakes, ridicule, or difficulty articulating (Klein & Ruiz, 2025). It is worth noting that in some children, receptive speech and cognitive functions are preserved, although subtle expressive speech deficits are observed that are not directly related to social anxiety, which in turn emphasises the need for a comprehensive psycholinguistic assessment.

Recent systematic studies confirm that selective mutism is a complex childhood anxiety disorder with significant psycholinguistic consequences. In her research, Koskela analysed eleven cohort and case-control studies (number of participants = 292) and showed that most children with selective mutism partially or completely recover their speech activity, and 78% show significant improvement in communication skills in adolescence. At the same time, anxiety disorders, primarily social anxiety (6-54%), often persist into adulthood, emphasising the importance of early detection and timely assistance (Koskela, 2023).

In the context of psycholinguistic analysis, speech refusal in selective mutism leads to the formation of atypical trajectories of expressive speech development and may conceal mild semantic and prosodic impairments. Some children maintain an age-appropriate level of receptive language but exhibit specific expressive limitations.

In particular, structured observation of a child's behaviour in a controlled interaction setting is one of the leading methods for the initial assessment of selective mutism.

In the basic assessment model, Bergman proposes a 10-15 minute protocol that covers verbal and nonverbal interaction tasks – from simple play activities (such as blowing soap bubbles) to answering simple questions such as: 'What is your brother's name?' 'Do you have a favourite colour?' etc. Such communication allows for the recording of spontaneous reactions, speech intonation, and readiness for social interaction. It is advisable to begin speech assessment in a game context, using simple

multiple-choice questions and a modified version of the game '21 questions,' reducing the cognitive load based on recognition rather than recall (Bergman, 2013).

Corrective work involves paying special attention to the development of socio-pragmatic speech abilities in various forms of communication (Klein, & Ruiz, 2025). That is, the ability to implement various communicative intentions such as, asking clarifying questions, apologising, asking for or providing information as well as the ability to adapt speech behaviour according to the context and characteristics of the interlocutor.

The ability to use language appropriately in a given communication situation requires mastery of the rules of dialogue, such as turn-taking, staying on topic, ending a statement appropriately, and understanding non-verbal cues. In addition, significant difficulties arise when working with decontextualised language statements relating to events, thoughts or ideas that are not present in the communication situation.

Limited practice with decontextualised statements reduces a child's ability to abstract, interpret communicative intentions and participate in more complex forms of social interaction, characteristics that are common to many children with this disorder. One of the most effective and empirically proven behavioural strategies for working with children with selective mutism is the technique of gradual expansion of speech situations ("stimulus fading") through a controlled increase in the number or complexity of communicative stimuli (Hernández, & Quinto).

This approach is based on the method of gradual exposure to the stimulus and reduction of sensitivity to it: the child initiates speech in the safest possible environment (e.g., with one adult, in a familiar location), then gradually interacts with new social conditions that previously caused speech blockage (Hernández & Quinto).

Thus, emotional endurance is strengthened, and verbal behaviour is reinforced in an increasingly wider range of social contexts.

Observation of the dynamics of speech activity has revealed the effectiveness of the method due to the gradual modulation of social stimuli: an increase in the number of interlocutors, a change of location, and an expansion of the range of questions. It is important that the child accumulates as many 'successful verbal episodes' as possible,

as this will facilitate the transfer of speech activity from an individual to a broader social context.

In the context of contemporary linguistic research, neuropragmatics emerges as an interdisciplinary field, combining pragmatics, cognitive linguistics, neurolinguistics, and psycholinguistics, and allows researchers to investigate how the brain forms and then interprets communicative intentions. Underdeveloped language levels – lexical, syntactic, and semantic – remain inaccessible or insufficiently formed. Children with intellectual disabilities in many cases use compensatory, pre-linguistic means of communication gestures, vocalisations, behavioural acts (Botana, & Peralbo, 2025). From a linguistic point of view, this confirms speech disorders caused by cognitive changes and emotional dysregulation, which affect prosody, the selection of linguistic means, and pragmatic strategies in the communication process.

Traditionally, behavioural manifestations such as avoidance, 'freezing, aggressive outbursts, or destructive behaviour were mistakenly considered to be inherent in intellectual disabilities. However, modern neuropsycholinguistic approaches interpret them as a sign of communicative failure, a limited ability to interpret prosodic and semantic signals, all of which shapes the child's tendency to choose a behavioural response instead of a verbal one.

From a linguistic point of view, it should be emphasised that these disorders are not limited to 'silence' or simplified speech. They cover a wide range of deviations at different levels of the speech system, in particular:

- Phonetic speech disorders: impaired control of articulatory movements, flattened intonation curve and weakened prosodic expressiveness;
- Morphological and syntactic deviations: simplification of syntactic constructions, grammatical agreement disorders, instability in the use of morphological forms;
- Semantic limitations: difficulties in forming categorical meanings (mastering the system of generalised meanings of words), an underdeveloped or narrowed lexical-semantic network (i.e. insufficient number of interword connections and associative relationships), a tendency toward a specific type of thinking (low development of categorisation and abstraction processes);

- Pragmatic disorders: inability to initiate or maintain verbal interaction, insensitivity to the communicative intentions of the interlocutor (Botana, & Peralbo, 2025).

This indicates a complex dysregulation of the speech system, in which emotional, cognitive, and neurolinguistic mechanisms are closely intertwined.

It is important to note that, despite growing scientific interest, an analysis of professional sources shows that research on neuropragmatics in children with intellectual disabilities is developing unevenly: there was an active increase in publications in 2013-2019, but in recent years the number of publications has decreased significantly. This creates a methodological gap in understanding how to integrate social-emotional, cognitive, and linguistic processes when developing effective corrective programmes.

Therefore, in our opinion, it is worth paying attention to game-based, visual and psycholinguistically structured methods that provide natural, sensory support for speech development. Play activities play an important role for children with developmental disorders because:

- They reduce anxiety levels, gradually easing emotional tension and thus facilitating the child's integration into communicative interaction;
- They improve sensorimotor integration by coordinating the sensory pathways of perception that are necessary for articulation;
- They promote the formation of new language connections in natural conditions, i.e. it supports the emergence of associative, lexical-semantic and grammatical connections through communicative interaction;
- They optimise the processing of speech stimuli, in particular by enhancing the child's ability to recognise sounds and speech units in a playful way.

The use of interactive resources such as Wordwall, Canva, and LearningApps expands access to information, minimises cognitive load, and supports children who have difficulties with perceptual and language processing.

The study used a set of psycholinguistically oriented interventions aimed at developing phonological, semantic, syntactic, and pragmatic competences. Below is a systematic list of games and exercises that implement these speech mechanisms and

ensure the formation of key components of speech activity. The proposed set of games is an original development based on a synthesis of contemporary psycholinguistic, special educational and corrective approaches and adapted to the needs of children with intellectual disabilities, autism spectrum disorders and selective mutism:

- Educational game title: 'From gesture to word. How to play: the child first shows an action ('sleep,' 'eat,' 'drink') and then tries to name it. Expected results: development of speech initiation, support for the transition from non-verbal to verbal communication;
- Educational game title: 'Who said that?' How to play: the child is given simple sentences ('I want to draw,' 'I'm cold,' 'Let's go to the shop, etc.'). The task is to choose who could have said it (a friend, mother, teacher). Expected results: understanding of communicative intentions, formation of pragmatic sensitivity and interpretation of context;
- Educational game title: 'Put the puzzles together.' How to play: the child assembles an image from separate fragments, then describes the resulting picture and answers questions about the plot ('Who is depicted?', 'What is happening?', 'What is the mood of the characters?'). Expected results: improvement of cognitive planning and sequence of actions, stimulation of speech initiation through description of the image or plot;
- Educational game title: 'The difference between pictures' How to play: the child is shown two similar pictures with differences. The task is to find and describe the differences. For children with selective mutism, non-verbal responses are allowed in the initial stages (pointing, selecting a card), with a gradual transition to verbal responses. Expected results: development of lexical-semantic skills by naming objects, actions or characteristics, stimulation of speech initiation and development of sequential speech;
- Educational game title: 'Building simple sentences.' How to play: the teacher gives the child a set of separate words or phrases to arrange into grammatically correct sentences. Then the child reads aloud, answers the specialist's questions about the meaning of the sentences, and tries to construct a similar sentence. It is important to note that for children with intellectual disabilities and autism spectrum disorders,

grammatical structures should be highlighted in colour-coded to facilitate perception. Expected results: formation of simple sentences, development of morphological skills, i.e. agreement case forms, genders, etc;

- Educational game title: 'Reflection of emotional states'. How to play: the child chooses familiar characters (e.g. from a cartoon) that express different emotions, such as joy or fear. The teacher asks clarifying questions ('How can you tell that he is angry?') and encourages the child to reproduce the emotion with facial expressions or intonation (non-verbal responses are possible for children with mutism). Expected results: development of emotional sensitivity and recognition of basic emotions, tracing cause-and-effect relationships, improvement of prosodic skills;

- Educational game title: 'Where do animals live?' How to play: the child receives cards with pictures of animals and their habitats (forest, field, pond, house, farm). The task is to correctly match the animal and its environment, with the help of specialists or independently, and construct a simple sentence. Expected results: increased vocabulary, development of classification skills and simple sentence construction, support for cognitive organisation of knowledge about the world.

The systematic use of educational games provides a multidimensional psycholinguistic effect: the development of narrative, pragmatic, morphological, phonological and prosodic skills, reduction of anxiety, activation of speech initiation and the formation of stable communication strategies in children with developmental disorders.

First of all, there is a significant increase in verbal working-memory performance, which manifests itself in greater information retention, faster reproduction of information, and more accurate use of verbal stimuli. At the same time, phonological processing develops: in particular, the accuracy of sound analysis increases and phonemic differentiation improves. The improvement of morphological and syntactic structures is reflected in the more correct use of grammatical forms and stable mastery of word order in a sentence. The semantic system is activated, which leads to a noticeable enrichment of vocabulary, improvement of lexical selection, and expansion of categorisation skills. At the same time, narrative competence is formed: children demonstrate the ability to construct logical, orderly statements. Social and pragmatic



skills also undergo significant changes, which are expressed in a better understanding of communicative situations, increased social adaptability, and enhanced speech initiative.

The game format helps to reduce anxiety and increase motivation to participate in communication, which is especially important for children with autism spectrum disorders and selective mutism, as it significantly reduces the speech barrier and creates a safe environment for development.

**Conclusions.** It has been established that in children with intellectual disabilities, autism spectrum disorders and selective mutism, the disorders cover all levels of the language system phonological, morphological, syntactic, semantic, pragmatic and prosodic – and are combined with atypical patterns of emotional regulation, which causes atypical trajectories of communicative ontogenesis.

It has been found that emotional regulation is a key modulating factor in children's speech functioning. Based on the procedural model of emotional regulation and neuroimaging research data, disorders have been identified at the stages of attention, evaluation, and integration of sensory signals, which lead to atypical emotional responses, affecting speech initiation, the interpretation of emotional content in utterances, and the choice of communicative strategies.

The author's proposed set of educational games, created on the basis of a synthesis of neuropragmatic, psycholinguistic, and special pedagogical approaches, provides an impact on phonological, semantic, morphosyntactic, narrative, and pragmatic competences.

The prospects for research lie in the further development and testing of psychological and psycholinguistic support programmes aimed at strengthening psychological resilience, developing speech activity and forming adaptive communication strategies in children with intellectual disabilities, autism spectrum disorders and selective mutism.

#### ЖИТЕПАТҮПА

1. Bergman, R. L. (2013). Integrated Behavior Therapy for Selective Mutism: A randomized controlled pilot study. *Behaviour research and therapy*. No. 51. URL: <https://meerdanstil.be/wp-content/uploads/2015/12/Integrated-Behavior-Therapy-for->

[Selective-Mutism\\_A-randomized-controlled-pilot-study\\_Bergman-Gonzalez-Piacentini-Keller\\_2013.pdf](#) (date of access: 06.12.2025).

2. Botana, I., & Peralbo, M. (2023). EDPRA: A screening instrument for assessing early pragmatic development. *Revista de Investigación en Logopedia*. No. 13(2). P. 3186–3194.

3. Dolcos, F. (2004). Interaction between the amygdala and the medial temporal lobe memory system predicts better memory for emotional events. *Cell Press*. Vol. 42. P. 855–863. URL: [https://cabezalab.org/wp-content/uploads/2021/12/Dolcos-LaBar-Cabeza-2004\\_Interaction-between-the-amygdala-and-the-medial-temporal-lobe.pdf](https://cabezalab.org/wp-content/uploads/2021/12/Dolcos-LaBar-Cabeza-2004_Interaction-between-the-amygdala-and-the-medial-temporal-lobe.pdf) (date of access: 06.12.2025).

4. Eigsti, I.-M., & Bennetto, L. (2007). Beyond Pragmatics: Morphosyntactic Development in Autism. *The National Center for Biotechnology*. P. 1007–1023.

5. Gross, J. J. (2014). Handbook of emotion regulation. 2nd ed. New York : The Guilford Press, 689 p. URL: <https://www.iccpp.org/wp-content/uploads/2020/07/Handbook-of-emotion-regulation.pdf> (date of access: 11.12.2025).

6. Hernández, S. H., Quinto, S. M., & Martín, V. M. G. (2025). Assessing pragmatic skills in people with intellectual disabilities. *Behavioral Sciences*. Vol. 15. P. 3–21. URL: [https://www.mdpi.com/2076-328X/15/3/281?utm\\_source=chatgpt.com](https://www.mdpi.com/2076-328X/15/3/281?utm_source=chatgpt.com) (date of access: 06.12.2025).

7. Klein, E. R., & Ruiz, C. E. (2025). A physiological approach to vocalization and expanding spoken language for adolescents with selective mutism. *Behavioral Sciences*. No. 15. P. 3–24. URL: [https://doi.org/file:///C:/Users/anast\\_d6qc6h1/Downloads/behavsci-15-01013.pdf](https://doi.org/file:///C:/Users/anast_d6qc6h1/Downloads/behavsci-15-01013.pdf) (date of access: 07.12.2025).

8. Koskela, M. (2023). Long-term outcomes of selective mutism: a systematic literature review. *BMC Psychiatry*. P. 2–14. URL: <https://d-nb.info/1318773741/34> (date of access: 05.12.2025).

9. Muris P., & Ollendick T. H. (2021). Current challenges in the diagnosis and management of selective mutism in children. *Psychology research and behavior management*. No. 14. P. 159–167. URL: [https://www.dovepress.com/current-challenges-in-the-diagnosis-and-management-of-selective-mutism-peer-reviewed-fulltext-article-PRBM?utm\\_source=chatgpt.com#cit0003](https://www.dovepress.com/current-challenges-in-the-diagnosis-and-management-of-selective-mutism-peer-reviewed-fulltext-article-PRBM?utm_source=chatgpt.com#cit0003) (date of access: 07.12.2025).

10. Недозим, І. (2021). Корекція і розвиток соціальної комунікації та взаємодії у дітей з розладами аутистичного спектра. *Особлива дитина: навчання і виховання*. № 4. С. 69–81. URL: [https://doi.org/file:///C:/Users/anast\\_d6qc6h1/Downloads/91-Текст%20статті-370-1-10-20230812.pdf](https://doi.org/file:///C:/Users/anast_d6qc6h1/Downloads/91-Текст%20статті-370-1-10-20230812.pdf) (дата звернення: 08.12.2025).

11. Norbury C., & Gosse C. (2017). Language growth in children with heterogeneous language disorders: a population study. *Elsevier*. P. 812–818. URL: <https://acamh.onlinelibrary.wiley.com/doi/10.1111/jcpp.12793> (date of access: 14.12.2025).

12. Schalock, R. L., & Luckasson, R. (2021). Overview of Intellectual Disability: Definition, Diagnosis, Classification, and Systems of Supports (12e). *American journal on intellectual and developmental disabilities*. P. 1–7. URL: [https://www.aaid.org/docs/default-source/default-document-library/definition-diagnosis-classification-and-systems-of-supports-\(12e\).pdf?sfvrsn=4ea93b21\\_0](https://www.aaid.org/docs/default-source/default-document-library/definition-diagnosis-classification-and-systems-of-supports-(12e).pdf?sfvrsn=4ea93b21_0) (date of access: 08.12.2025).

13. Williams, D., Botting, N., & Boucher, J. (2008). Language in autism and specific language impairment: Where are the links. *City Research Online*. P. 3–42. URL: <https://openaccess.city.ac.uk/id/eprint/3345/1/Williams%20Botting%20and%20Boucher%202008.pdf> (date of access: 04.12.2025).

## REFERENCES

1. Bergman, R. L. (2013). Integrated Behavior Therapy for Selective Mutism: A randomized controlled pilot study. *Behaviour research and therapy*. No. 51. URL: [https://meerdanstil.be/wp-content/uploads/2015/12/Integrated-Behavior-Therapy-for-Selective-Mutism\\_A-randomized-controlled-pilot-study\\_Bergman-Gonzalez-Piacentini-Keller\\_2013.pdf](https://meerdanstil.be/wp-content/uploads/2015/12/Integrated-Behavior-Therapy-for-Selective-Mutism_A-randomized-controlled-pilot-study_Bergman-Gonzalez-Piacentini-Keller_2013.pdf) (date of access: 06.12.2025).

2. Botana, I., & Peralbo, M. (2023). EDPRA: A screening instrument for assessing early pragmatic development. *Revista de Investigación en Logopedia*. No. 13(2). P. 3186–3194.

3. Dolcos, F. (2004). Interaction between the amygdala and the medial temporal lobe memory system predicts better memory for emotional events. *Cell Press*. Vol. 42. P. 855–863. URL: [https://cabezalab.org/wp-content/uploads/2021/12/Dolcos-LaBar-Cabeza-2004\\_Interaction-between-the-amygdala-and-the-medial-temporal-lobe.pdf](https://cabezalab.org/wp-content/uploads/2021/12/Dolcos-LaBar-Cabeza-2004_Interaction-between-the-amygdala-and-the-medial-temporal-lobe.pdf) (date of access: 06.12.2025).

4. Eigsti, I.-M., & Bennetto, L. (2007). Beyond Pragmatics: Morphosyntactic Development in Autism. *The National Center for Biotechnology*. P. 1007–1023.

5. Gross, J. J. (2014). Handbook of emotion regulation. 2nd ed. New York : The Guilford Press. 689 p. URL: <https://www.iccpp.org/wp-content/uploads/2020/07/Handbook-of-emotion-regulation.pdf> (date of access: 11.12.2025).

6. Hernández, S. H., Quinto, S. M., & Martín, V. M. G. (2025). Assessing pragmatic skills in people with intellectual disabilities. *Behavioral Sciences*. Vol. 15. P. 3–21. URL: [https://www.mdpi.com/2076-328X/15/3/281?utm\\_source=chatgpt.com](https://www.mdpi.com/2076-328X/15/3/281?utm_source=chatgpt.com) (date of access: 06.12.2025).

7. Klein, E. R., & Ruiz, C. E. (2025). A physiological approach to vocalization and expanding spoken language for adolescents with selective mutism. *Behavioral Sciences*. No. 15. P. 3–24. URL: [https://doi.org/file:///C:/Users/anast\\_d6qc6h1/Downloads/behavsci-15-01013.pdf](https://doi.org/file:///C:/Users/anast_d6qc6h1/Downloads/behavsci-15-01013.pdf) (date of access: 07.12.2025).

8. Koskela, M. (2023). Long-term outcomes of selective mutism: a systematic literature review. *BMC Psychiatry*. P. 2–14. URL: <https://d-nb.info/1318773741/34> (date of access: 05.12.2025).
9. Muris, P., & Ollendick, T. H. (2021). Current challenges in the diagnosis and management of selective mutism in children. *Psychology research and behavior management*. No. 14. P. 159–167. URL: [https://www.dovepress.com/current-challenges-in-the-diagnosis-and-management-of-selective-mutism-peer-reviewed-fulltext-article-PRBM?utm\\_source=chatgpt.com#cit0003](https://www.dovepress.com/current-challenges-in-the-diagnosis-and-management-of-selective-mutism-peer-reviewed-fulltext-article-PRBM?utm_source=chatgpt.com#cit0003) (date of access: 07.12.2025).
10. Nedozym, I. (2021). Correction and development of social communication and interaction in children with autism spectrum disorders. *Special Child: Education and Upbringing*, 4, 69–81. URL: [https://doi.org/file:///C:/Users/anast\\_d6qc6h1/Downloads/91-Текст%20статті-370-1-10-20230812.pdf](https://doi.org/file:///C:/Users/anast_d6qc6h1/Downloads/91-Текст%20статті-370-1-10-20230812.pdf) (date of access: 08.12.2025).
11. Norbury, C., & Gosse, C. (2017). Language growth in children with heterogeneous language disorders: a population study. *Elsevier*. P. 812–818. URL: <https://acamh.onlinelibrary.wiley.com/doi/10.1111/jcpp.12793> (date of access: 14.12.2025).
12. Schalock, R. L., & Luckasson, R. (2021). Overview of Intellectual Disability: Definition, Diagnosis, Classification, and Systems of Supports (12e). *American journal on intellectual and developmental disabilities*. P. 1–7. URL: [https://www.aaidd.org/docs/default-source/default-document-library/definition-diagnosis-classification-and-systems-of-supports-\(12e\).pdf?sfvrsn=4ea93b21\\_0](https://www.aaidd.org/docs/default-source/default-document-library/definition-diagnosis-classification-and-systems-of-supports-(12e).pdf?sfvrsn=4ea93b21_0) (date of access: 08.12.2025).
13. Williams, D., Botting, N., & Bouche, J. (2008). Language in autism and specific language impairment: Where are the links. *City Research Online*. P. 3–42. URL: <https://openaccess.city.ac.uk/id/eprint/3345/1/Williams%20Botting%20and%20Boucher%202008.pdf> (date of access: 04.12.2025).

**Матеріал надійшов до редакції 13.12.2025 р.**

**УДК 378**

**Олександр Черета,**

аспірант Інституту спеціальної педагогіки і психології

імені Миколи Ярмаченка НАПН України

[a\\_chereda@yahoo.com](mailto:a_chereda@yahoo.com)

**Oleksandr Chereda,**

Postgraduate student, Mykola Yarmachenko Institute