PROCESSES OF SPEECH AND COMMUNICATION DEVELOPMENT IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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Abstract. *This study examines the processes of speech and communication development in children with autism spectrum disorder (ASD), analyzing their theoretical, methodological, and practical dimensions. The research highlights that speech disorders in children with ASD are not isolated phenomena, but are closely interconnected with neurological, cognitive, and social developmental processes. The study reviews key theoretical frameworks - including behavioral theory, cognitive developmental concepts, and social-communicative models - and demonstrates their complementary nature in understanding speech development in children with ASD. Special attention is given to the role of early intervention, as scientific evidence confirms that timely identification and correction of speech disorders significantly improves developmental outcomes. The study also explores evidence-based corrective-pedagogical approaches - including Applied Behavior Analysis (ABA), Picture Exchange Communication System (PECS), DIR/Floortime, social stories, and Augmentative and Alternative Communication (AAC) - and evaluates their effectiveness in developing verbal and nonverbal communication skills. Furthermore, the research emphasizes the importance of multidisciplinary cooperation, family involvement, inclusive education, and continuous monitoring in ensuring the success of the correctional-pedagogical process.*

Keywords: *autism spectrum disorder, speech development, communication skills, correctional pedagogy, early intervention, applied behavior analysis.*

Introduction

One of the most urgent problems in modern pedagogy is the scientific substantiation of the content, forms, and methodology of correctional and pedagogical work with children with autism spectrum disorder. Worldwide, the number of children in this category is increasing year by year, and this situation poses new and complex tasks not only for medicine, but also for special pedagogy, speech therapy, psychology, and social rehabilitation. In the Republic of Uzbekistan as well, the growing number of children with autism spectrum disorder has made the issues of integrating them into the education system and providing them with appropriate correctional support one of the priority directions of national educational policy. Therefore, this topic requires comprehensive scientific, theoretical, and practical-methodological study. Autism spectrum disorder is defined as a complex neurodevelopmental condition that has a broad impact on a child's intellectual, social, and emotional development.

The main manifestations of this disorder include difficulties in social interaction, limited communicative activity, stereotypical and repetitive behavior, sensory peculiarities, and difficulty adapting to changes. It is called a "spectrum" [1, p. 12.] because it does not appear in a single form, but rather across a wide range-from mild to severe and complex forms. Therefore, each autistic child has a unique developmental profile, individual needs, and potential, and approaches

to them must be differentiated accordingly. The specific features of speech and communicative development in children with autism spectrum disorder determine the basis of correctional work in this area. In such children, speech development delay, echolalia, that is, mechanical repetition of other people's words and sentences, stereotypical speech patterns, use of metaphorical and self-only-understandable language, and reduced ability to voluntarily engage in communication are often observed.

In addition, prosody-that is, the tone, stress, and tempo of speech-also shows distinct characteristics: some autistic children speak in a monotonous, flat tone, while in others the rhythm and tempo of speech change unnaturally. The pragmatic aspect of speech, meaning the ability to use language correctly and appropriately for communication purposes, is the most affected area in autistic children, which makes establishing communication with peers and adults significantly more difficult. "Nonverbal communication-gestures, facial expressions, eye contact, body posture, and distance-makes up a large part of human interaction" [2, p. 18.].

Material and Methods. In children with autism spectrum disorder, nonverbal communication skills may also be seriously underdeveloped: they may not correctly interpret others' nonverbal signals and may themselves fail to use necessary nonverbal cues adequately. "For example, reduced or absent eye contact during conversation, inability to express joy or sadness through facial expressions, and limited gestures all reduce the quality of communication and create the basis for social isolation. At this point, the task of correctional pedagogy is to develop verbal and nonverbal communication skills together in a comprehensive manner" [3, p. 55.]. Among the principles that form the methodological basis of the correctional-pedagogical process, the most important are the following.

First is the principle of early intervention: if developmental disorders are identified as early as possible and correctional support is started promptly, the results will be significantly better, because brain plasticity is at its highest level in early childhood.

Second is the principle of individual approach: each autistic child's developmental profile, strengths, difficulties, and motivational characteristics are taken into account when designing an individual educational and correctional plan. Third is the principle of systematicity and continuity: correctional work should not be limited to an institution, but should be organized continuously with the involvement of family, school, and the social environment.

Fourth is the principle of multidisciplinary cooperation: teacher, speech therapist, psychologist, medical worker, and parents work together to provide holistic and comprehensive support to the child. "The practical methods and techniques for developing speech and communication skills are extremely diverse, and each has a specific scientific basis" [4, p. 304].

Literature analysis

The behavior-analysis-based approach, Applied Behavior Analysis (ABA), is a method based on operant conditioning and positive reinforcement, allowing communication skills to be formed in a step-by-step and systematic way. Within ABA, the Verbal Behavior approach holds a special place: communicative skills are formed sequentially and consistently, from requesting and naming to imitation and answering in conversation. Many studies have confirmed that intensive ABA programs started at an early age can lead to significant progress in speech and communication skills in autistic children.

"The Picture Exchange Communication System (PECS)" [5, p. 418.] is a special method that teaches a child to express needs, wishes, and thoughts through picture cards. PECS is especially effective for autistic children with little or no verbal speech, and once they gain a means

of communication, their likelihood of using words and sentences also increases. PECS sessions begin with learning the connection between pictures and objects and gradually progress to word combinations and sentence construction. This method satisfies the child's internal need for communication and forms a positive attitude toward interaction.

Research results. The DIR/Floortime approach, based on Development, Individual Differences, and Relationship, places the child's emotional and social development at the center and involves the teacher or therapist as a partner in the child's play and activities. In this method, the adult's task is not to impose ready-made knowledge or skills, but to establish an emotional connection with the child, support their communicative initiatives, and gradually expand communicative exchanges. Because "DIR/Floortime" [6, p. 286.] sessions are based on the child's natural interests and favorite activities, internal motivation is formed, and communication develops naturally and without pressure. This method is especially effective for autistic children who are emotionally withdrawn or avoid communication.

Play therapy is widely used in the correctional-pedagogical process as the most natural and child-friendly means of developing speech and communication. Play is a child's primary activity; through it, the child becomes acquainted with the surrounding world, practices language and speech in real situations, and learns the rules of social interaction. Conversational games, role-playing games, storytelling, movement games, and sensory games all serve to expand the child's vocabulary, master grammatical structures, and practice social communication skills in a natural setting. When organizing play therapy for autistic children, it is important to create a familiar, predictable, and safe environment and then gradually introduce new social situations. Play therapy contributes not only to speech development, but also to strengthening the child's overall emotional-volitional sphere.

Speech therapy sessions are the foundation of correctional work with children with autism spectrum disorder. Modern speech therapy in work with autistic children is not limited to correcting articulation or pronunciation defects; it is built as a holistic system covering all aspects of communication, including sound, word, sentence, text, and social speech levels. In speech therapy sessions, sound imitation and phonemic awareness are developed first, followed by exercises to expand vocabulary and form grammatical structures, and then by work on connected speech, dialogue, and monologue. This sequence is individually adapted to the child's level of development. "The more systematic, early, and intensive speech therapy sessions are, the more favorable the prognosis for the development of speech and communication skills becomes" [7, p. 874.]

The social stories method was developed by Carol Gray in the early 1990s and is widely recognized as an innovative way to develop social and communicative skills in children with autism. In this method, communication and social situations encountered in a child's daily life-such as greeting, waiting for a turn, asking for help, playing with peers, and saying goodbye-are presented in the form of short, clear, and understandable stories. These stories consist of descriptive sentences (what is happening?), perspective sentences (what do others feel?), and directive sentences (what will I do?), and are aimed at improving the child's social understanding and communication abilities. Social stories teach communication rules and norms of social behavior in a pressure-free and figurative way. The advantage of this method is that it can be adapted to each child's individual needs and real-life situations and can be used effectively at home, school, and in therapy settings.

"Augmentative and Alternative Communication (AAC)" [8, p. 45.] represents one of the most promising directions in modern correctional technologies for working with this group of children. AAC systems include picture- and symbol-based communication, sign language elements, speech-generating devices, and special computer programs.

AAC not only provides a communication tool for children whose verbal speech is not developed, but also accelerates overall communicative development: in many cases, children using AAC later begin to develop verbal speech as well. This disproves the scientifically unfounded notion that AAC inhibits verbal speech. Modern technological applications and interactive communication platforms are opening new opportunities for developing independent communication skills in children and creating conditions for organizing the correctional process more effectively. The active and conscious participation of parents is also important in ensuring the effectiveness of the correctional-pedagogical process.

A child's corrective development should not be limited to the institution or therapy room; family members must be involved so that the skills learned are reinforced at home and in daily life. Parent-oriented training programs help them develop key correctional skills such as supporting communication initiatives, expanding communicative exchanges, using positive reinforcement, and managing stereotypical behavior. The presence of a family support system is one of the determining factors in the development of speech and communication skills in an autistic child. For this reason, modern correctional pedagogy views family cooperation not as optional, but as a mandatory and systematic component.

In an inclusive educational environment, the development of speech and communication skills in children with autism spectrum disorder brings both unique opportunities and certain difficulties. In such environments, these children participate in regular education, gain the opportunity to enrich their natural communication with peers, and learn social norms and communication rules through observation. However, for correctional work to be successful in an inclusive setting, important conditions are necessary: teachers must have sufficient qualifications in special pedagogy, the classroom environment must be organized in a sensory-friendly way, individualized education plans must be carefully prepared, and there must be continuous cooperation with special specialists. When inclusive education is properly organized, it serves as a unique educational environment both for the autistic child and for their peers in terms of developing tolerance, empathy, and acceptance of diversity.

Creating a scientifically grounded system for assessing the effectiveness of the correctional-pedagogical process requires a complex and multidimensional approach. "Assessment should not be limited only to speech development indicators; it must cover all aspects of communicative activity: the level of expressive and receptive speech, vocabulary size, the level of mastery of grammatical structures, the ability to initiate and maintain communication, nonverbal communication skills, social interaction, and pragmatic speech skills" [9, p. 12.]. In addition, the dynamics of stereotypical speech and behavior patterns, as well as the child's overall emotional-volitional and adaptive development, should be considered important criteria for evaluating the results of the correctional process. Assessment should not be a one-time diagnostic event, but should be organized as a continuous monitoring system, with the correctional program updated flexibly based on the results.

In the conditions of the Republic of Uzbekistan, there are specific features and promising directions for correctional-pedagogical work with children with autism spectrum disorder. Among the main problems in the national context are the limited number of special correctional

institutions, a shortage of qualified specialists such as speech therapists, correctional teachers, and psychologists specialized in autism, insufficient dissemination of scientifically accurate information about autism among parents, and the lack of correctional-methodological literature in the Uzbek language. To solve these problems, it is necessary to develop national autism strategies and programs, strengthen the system for training personnel in special pedagogy and speech therapy, adapt international scientific experience to local conditions and cultural-linguistic features, and establish cooperation between state and non-governmental organizations that promote correctional education.

Modern science continues to study the causes, mechanisms, and correctional-pedagogical opportunities of autism in greater depth. Neurocognitive research is making it possible to better understand the functioning mechanisms of the autistic brain and the neurobiological foundations of social perception and communicative processes. This knowledge opens the way to building correctional-pedagogical approaches that are more effective, scientifically grounded, and adapted to the child's neurological characteristics. At the same time, genetic and epigenetic research is helping to clarify the mechanisms of autism spectrum disorder development and may expand opportunities for early diagnosis and prevention in the future. All of this creates a new scientific foundation for correctional pedagogy and requires practical approaches to be continuously developed in connection with scientific discoveries.

A multisensory approach is also of special importance in developing speech and communication skills. By multisensory approach, we mean learning through several sensory channels at the same time, such as vision, hearing, touch, and movement. In autistic children, sensory peculiarities-some showing increased sensitivity and others reduced sensitivity-directly affect the process of teaching speech and communication. Therefore, in the correctional-pedagogical process, sensory integration principles should be taken into account, a comfortable sensory environment should be created for the child, and speech-learning exercises should be enriched with visual, auditory, and motor components. For example, presenting words together with pictures and objects, combining speech exercises with rhythm and song, and performing articulation exercises in front of a mirror are all practical forms of the multisensory approach.

Motivation also deserves special attention in the correctional-pedagogical process. Forming motivation for communication and learning in autistic children is often more complex than in typically developing children, because their interests may be unusual and very narrow. However, these very specific interests can be used as a powerful pedagogical tool: if speech and communication skills are developed through the child's favorite topic, object, or activity, the child participates more willingly and learning becomes more effective. The teacher's task is not to reject the child's interests, but to use them as a bridge for expanding communicative skills and involving the child in social interaction. A motivation-based approach helps transform the correctional process from a burden into a joyful activity for the child.

The structure and organization of the correctional-pedagogical program also directly affect its effectiveness. An effective correctional program should include the following essential components: a system of goals based on individual assessment and diagnosis for each child, short-term and long-term correctional tasks, regular and systematic sessions, a family cooperation plan, a mechanism for information exchange among multidisciplinary team members, and a monitoring system for tracking progress. The more carefully a correctional program is planned, consistently implemented, and flexibly updated, the more stable and significant the child's speech and communicative development will be. Each session should be goal-oriented, understandable, and

interesting for the child, while the acquired skills should be generalized and reinforced in different situations. The professional competence and personal qualities of the teacher are among the decisive factors determining the quality of the correctional-pedagogical process.

"A specialist working with autistic children must not only possess fundamental knowledge and skills in special pedagogy, speech therapy, and psychology, but also personal qualities such as patience, empathy, creativity, and flexibility" [10, p. 9.] Since scientific knowledge in this field is developing rapidly, the teacher must constantly engage in professional self-development and stay informed about new scientific discoveries. In addition, emotional resilience and prevention of professional burnout are also important for teachers working with autistic children, because this field requires a great deal of emotional and intellectual energy.

In conclusion, developing speech and communication skills in children with autism spectrum disorder within the correctional-pedagogical process is a multifaceted, dynamic, and continuously improving area of pedagogical activity. To achieve success in this field, it is necessary to correctly select scientifically grounded methods and adapt them to individual needs, ensure early intervention, establish multidisciplinary cooperation and active family participation, introduce a continuous monitoring and assessment system, and regularly improve the professional competence of educators.

Every autistic child is a unique person with their own potential, developmental path, and opportunities. Providing them with correct, timely, and high-quality correctional-pedagogical support is both a pedagogical and human responsibility of society toward them. Fulfilling this responsibility fully and conscientiously remains the main task of every researcher, practitioner, and family member in the field of correctional pedagogy. The study of the theoretical and methodological foundations of speech development in children with autism spectrum disorders shows that this problem is multifaceted and has a complex systemic nature. Speech disorder in the context of ASD should be considered not as a separate phenomenon, but as a process closely connected with the child's overall psychoneurological development. Based on the analysis of existing scientific literature, it can be stated that difficulties in speech development arise as a result of the interaction of biological, genetic, and social factors.

From a theoretical perspective, the mechanisms of speech formation in children with ASD are analyzed through neurological, cognitive, and communicative levels. Different theoretical approaches to speech development-behavioral theory, cognitive development concepts, and social-communicative models-each reveal a certain aspect of this process and complement one another. At the same time, scientific evidence shows that early identification of initial signs of speech disorder and the start of intervention from an early age are crucial for a child's further development. Methodologically, the combination of observation, standardized tests, speech therapy diagnostics, and family questionnaires makes it possible to assess the speech of children with ASD comprehensively. Discussion. Many studies confirm that a complex methodology based on special education, speech therapy correction, and family participation gives the most effective results in practice.

1. Autism spectrum disorder is a complex systemic disorder affecting a child's neurological development and manifesting as a set of communicative, cognitive, social, and speech-related difficulties. It is more methodologically correct to study it in the context of holistic developmental disorder rather than as an isolated clinical phenomenon.

2. Speech development is one of the most affected areas in children with ASD, and in most children speech develops with a significant delay compared with peers. The presence of speech is

one of the most important prognostic indicators for the child's future social adaptation and learning.

3. The analysis of theoretical foundations shows that difficulties in speech development arise from the interaction of biological, genetic, and social factors. It is scientifically unfounded to identify a single factor as the main cause; a complex etiopathogenetic approach is required.

4. Behavioral theory, the concept of cognitive development, and social-communicative models explain speech development in children with ASD from different perspectives. These theories do not contradict one another; rather, they complement each other and produce better results when applied together in practice.

5. The importance of early diagnosis and early intervention must be specially emphasized: scientific studies have proven that speech formation before the age of five is a decisive factor in prognosis for children with ASD. Early intervention significantly increases the child's speech and social development potential.

6. Methodologically, the combined use of observation, standardized tests, speech therapy diagnostics, and family questionnaires allows for a comprehensive and complete assessment of speech in children with ASD. Relying on only one method reduces diagnostic quality and may lead to incorrect conclusions.

7. A complex methodology based on speech therapy correction, special education methods, and active family participation has been confirmed by many international studies to produce the highest results in practice. Family involvement helps strengthen the skills the child acquires in everyday life.

In this way, the theoretical and methodological foundations discussed in Chapter One serve as a solid basis for scientifically grounding practical work on speech development in autistic children in the subsequent chapters. The processes of speech and communication development in children with autism spectrum disorder are multifaceted, dynamic, and deeply interconnected with neurological, cognitive, and social developmental processes. This study has demonstrated that no single theoretical framework or intervention approach is sufficient to address the full complexity of communication difficulties in ASD; rather, a comprehensive, multidisciplinary approach that integrates behavioral, cognitive, and social-communicative perspectives yields the most effective outcomes. Early intervention emerges consistently as the most critical factor in improving speech and communication prognosis. The combination of evidence-based methods - ABA, PECS, DIR/Floortime, social stories, adapted to each child's individual needs, provides a powerful toolkit for correctional-pedagogical practice.

Family involvement and inclusive education, when properly supported, further enhance the generalization and sustainability of communication gains. In the context of Uzbekistan, there is an urgent need to develop nationally adapted diagnostic tools, culturally relevant intervention programs, and a well-trained specialist workforce. Addressing these challenges represents both a scientific imperative and a societal responsibility toward children with ASD. Every child with autism spectrum disorder is a unique individual with their own potential and developmental pathway. Providing timely, high-quality, and scientifically grounded correctional-pedagogical support is not only a professional obligation but a fundamental expression of educational equity and human dignity.

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