MODERN PEDAGOGICAL TECHNOLOGIES FOR THE CORRECTION OF SPEECH DISORDERS THROUGH DEVELOPMENTAL GAMES IN THE PROCESS OF SPEECH THERAPY EDUCATION

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Abstract: This article provides a scientific and theoretical analysis of modern pedagogical technologies aimed at correcting speech disorders through the use of developmental games in the process of speech therapy education. The motivational and pedagogical potential of developmental games, their psycholinguistic mechanisms of influence, as well as their functional possibilities in speech therapy practice, are examined. The study also substantiates the effectiveness of game technologies integrated with digital educational resources, interactive platforms, and multimodal tools within the correctional process. The proposed approaches are focused on enhancing children's speech activity, developing their communicative competencies, and ensuring the effectiveness of speech therapy sessions.

Keywords: speech therapy correction, speech disorders, developmental games, pedagogical innovation, multimodal technology, interactive education.

In modern special pedagogy and speech therapy sciences, an in-depth scientific analysis of the psycholinguistic development of children with various speech disorders, the improvement of the theoretical and methodological foundations of correctional-educational activities, and the systematic implementation of innovative pedagogical technologies into practice are considered among the most pressing scientific and pedagogical tasks. In working with children with developmental limitations, a multidisciplinary approach - integrating speech therapy, neuropsychology, defectology, psycholinguistics, neuropedagogy, and information and communication technologies - is increasingly recognized as an important

methodological factor that enhances the effectiveness of the correctional process.

Speech disorders in children manifest in various forms, such as phonetic-phonemic developmental impairments, alalia, stuttering, rhinolalia, severe general speech underdevelopment (GSU), and dysarthria, and exert a comprehensive impact on their communicative activity, cognitive processes, social adaptation, and personal development. In such cases, enriching speech therapy sessions with innovative technologies, organizing them on the basis of play activity, and implementing a multimodal approach contribute to the consistent and balanced formation of psycholinguistic systems.

Today, in speech therapy practice, play-based activities - including elements of gamification, multimodal sensory systems, virtual reality technologies, digital platforms for automatic pronunciation analysis, and interactive speech therapy applications - serve as essential tools for intensifying the correctional process and increasing its effectiveness. The correspondence of play activity to the natural developmental mechanisms of the child ensures high motivation, emotional stability, and active participation in the formation of speech processes.

From the perspective of a psycholinguistic approach, developmental games naturally support the gradual formation of phonemic hearing, articulatory motor skills, the lexical-semantic system, grammatical structure, verbal communication, and pragmatic speech components. Game-based innovative technologies enable the visualization of these processes, strengthen sensorimotor coordination, activate active forms of perception, and provide opportunities for an individual-differentiated approach.

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Lexical and Grammatical Development

Object-based, role-playing, and situational games serve as an important pedagogical tool in expanding a child's vocabulary, actively mastering grammatical

forms, and developing the skills of conscious use of speech constructions. The natural communicative situations created during the game process enhance the child's need for the practical use of words and sentences, which, in turn, leads to the activation of the semantic system. Such games contribute to the correct use of syntactic structures, the formation of coherent speech, the logical sequencing of thoughts, and the expression of cause-and-effect relationships, thereby fostering the development of complex linguistic units.

Formation of Communicative Skills

Dialogic and polylogic games encourage the child to engage in communication, demonstrate speech initiative, express thoughts clearly, and perform social roles. During play activities, the child acquires social and communicative skills such as turn-taking, question-and-answer interaction, and mastering the social rules of communication. This, in turn, promotes the development of the pragmatic aspects of speech, namely the ability to regulate speech according to the interlocutor, communicative purpose, and context.

Correspondence to Natural Development Mechanisms

Since play activity represents the most natural form of a child's psychological development, speech therapy sessions organized on the basis of developmental games allow speech processes to be formed in a natural rather than artificial manner. During play, the child acquires the studied speech units voluntarily, with motivation and emotional involvement, rather than through coercion. As a result, phonetic, lexical, grammatical, and communicative skills develop in a more stable, sustainable, and functional way.

Multimodal Technologies

Multimodal technologies are based on the integration of auditory, visual, and kinesthetic stimuli, which simultaneously activate various components of speech activity. This approach has been confirmed in psycholinguistic and neuropsychological research, demonstrating that the coordinated functioning of

several sensory channels accelerates the processes of perception and processing of speech information in children.

In practical application, the following multimodal tools are widely used:

- **Interactive sensory panels** - effective in performing phonemic perception tasks, sound differentiation, and logorhythmic exercises through the combination of sound, graphic, and tactile stimuli.

- **Digital pronunciation correction modules** - software that automatically processes or models sounds, enabling the child to hear, compare, and independently correct their own speech.

- **Articulatory animations** - 3D models of the movements of the oral cavity, tongue, lips, and jaw that facilitate the visual perception of articulatory apparatus functioning.

Multimodal technologies are particularly significant in increasing the effectiveness of speech modeling, repetition, differentiation, and automation processes.

Gamification in Speech Therapy

Gamification is a pedagogical approach aimed at stimulating the educational process through game mechanisms, which significantly increases motivation and learning activity in speech therapy sessions. When gamification elements are organized in accordance with the child's personal experience, speech therapy tasks are perceived not as compulsory activities but as an engaging and voluntary play process.

Technologies based on gamification contribute to achieving the following outcomes:

- increased learning motivation;
- formation of skills for independent completion of speech tasks;
- enhancement of active participation through positive competition;
- reduction of fear of mistakes and increased readiness for repetition.

This technology demonstrates particularly significant results when working with children with phonetic-phonemic developmental disorders, stuttering, and articulatory difficulties.

Digital Tools and Virtual Reality Elements

Digital tools and virtual reality elements in modern speech therapy enable deep modeling of speech processes. An adaptive sensory environment maximally concentrates the child's attention and ensures a high level of emotional interaction in mastering speech skills.

These technologies provide the following opportunities:

- **Articulatory exercises in virtual space** - visualization and repetition of complex articulatory positions in 3D format;

- **3D sound modeling** - analysis of correct sound pronunciation through visual graphics and observation of the speech signal spectrum;

- **Digital logorhythmic programs** - play exercises that strengthen the coordination of rhythm, movement, and speech.

Due to their ability to fully engage the child's attention, these technologies ensure higher effectiveness of the learning process compared to traditional methods.

Innovative Game Platforms in Speech Therapy Practice

In speech therapy practice, innovative game platforms create a learning environment based on various sensory, tactile, and visual stimuli. Game technologies are integrated in accordance with the structure and content of speech therapy tasks.

Such platforms include:

- **Interactive boards** - used to develop speech differentiation and phonemic perception through sound, color, and motion-based materials;

- **Mobile speech therapy applications** - allow the child to practice independently and monitor progress through individualized game exercises;

- **Tactile game devices** - strengthen the relationship between fine motor skills and speech motor functions, which is particularly important for children with alalia,

general speech underdevelopment, and phonetic-phonemic developmental disorders.

With the help of innovative game platforms, the learning process becomes simplified, visualized, and more engaging, which increases the child's interest in speech activity.

Conclusion

Organizing speech therapy sessions on the basis of developmental games has a comprehensive impact on the psychological and linguistic development of children with speech disorders. Innovative pedagogical technologies - multimodal approaches, gamification, digital tools, and virtual reality - transform the speech therapy process into a more effective, engaging, and person-centered form. The proposed game-based technological model strengthens the natural formation of speech processes and promotes the development of speech activity, auditory perception, articulatory motor skills, and communicative competences in children.

Therefore, the use of developmental games in speech therapy sessions not only ensures effectiveness but also fully corresponds to the modern requirements of special pedagogy practice and global innovative trends.

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