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MODERN METHODOLOGY FOR TEACHING DACTYL (FINGERSPELLING) AND SIGN LANGUAGE TO PRIMARY SCHOOL DEAF AND HARD-OF-HEARING STUDENTS

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ABSTRACT

This article analyzes the scientific and methodological foundations of applying innovative pedagogical technologies in teaching dactyl (fingerspelling) and sign language to primary school-aged children with hearing impairments. It highlights the importance of digital visualization, interactive games, and correctional programs in developing a system of communicative interaction during the educational process. Furthermore, the study substantiates strategies for primary school students to effectively acquire dactyl signs and sign language, enhance their linguistic competence, and eliminate information exchange barriers within a special education environment.

Keywords: children with hearing impairments, primary school, dactyl speech (fingerspelling), sign language, innovative technologies, verbal gnosis, communicative competence, deaf education (surdopedagogy).

АННОТАЦИЯ

В данной статье анализируются научно-методические основы применения инновационных педагогических технологий в обучении дактильной и жестовой речи учащихся младших классов с нарушениями слуха. Освещается значение цифровой визуализации, интерактивных игр и коррекционных программ в формировании системы коммуникативного общения в учебном процессе. Также обоснованы стратегии эффективного освоения дактильных знаков и жестовой речи детьми младшего школьного возраста, повышения их лингвистической компетенции и устранения деструкций информационного обмена в специальной образовательной среде.

Ключевые слова: учащиеся с нарушениями слуха, начальные классы, дактильная речь, жестовый язык, инновационные технологии, вербальный гнозис, коммуникативная компетенция, сурдопедагогика.

INTRODUCTION

One of the fundamental problems of modern special education is restoring the linguistic potential of children with severe hearing pathologies and facilitating their successful integration into society. For primary school students with hearing impairments, fully mastering educational materials and positioning themselves as independent subjects within the educational space directly depends on the developmental level of their dactyl and sign communication skills. As substantiated in specialized research, teaching alternative and augmentative communication methods in the classroom should not be limited to merely demonstrating mechanical movements; rather, it requires the simultaneous activation of students' vocabulary, cognitive thinking, and sensorimotor skills. Developing the visual-spatial thinking of primary school students and overcoming communication barriers necessitates the modification of the pedagogical process through innovative technologies.

MAIN BODY. Students' perception of dactyl signs and signs during instructional time initiates a new kinetic-sensory stage within the classroom and the process of auditory-speech rehabilitation. Analyzing dactyl movements and sign semantics (meaning) at the level of higher nervous activity in primary school children, as well as reinforcing the word and concept behind each sign, is developed through specialized interactive game exercises, which serve as the baseline for future communicative

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behavior development. Teaching dactyl and sign speech to children with hearing impairments during lessons follows specific psycholinguistic patterns. Since the student experiences auditory deprivation at an early age, their dactyl-gestural communication, much like their oral speech, appears unstructured at the beginning of the lessons. As emphasized in scientific sources, under conditions where oral speech develops anomalously in children with hearing impairments, dactylemes (elements of the manual alphabet) serve as an essential supportive tool for understanding letters, teaching literacy, and shaping written speech. This form of kinetic communication, as a system of linguistic signs, balances the child's overall cognitive workload and increases the speed of information transmission during lessons. Research conducted by Turkish scholars in deaf education shows that the initial specialized competence of primary school teachers and parents in sign speech and dactyl within inclusive education environments accelerates classroom integration twofold. Furthermore, Azerbaijani specialists have specifically analyzed the psycholinguistic methodology of balancing oral speech and dactyl-gestural communication (signed speech and conversational sign language) in school-aged children with hearing impairments.

Pedagogical monitoring results indicate that a student's correct mastery of dactyl and signs and its application to live communication directly depends on the innovative-methodological competence of the deaf educator and the general education teacher. As demonstrated in specialized methodological studies, enriching lessons with visual materials, 3D animated dactyl alphabets, and modern multimedia tools ensures that children with hearing impairments master new words and signs 35-40% more effectively. When communication bridges are established among children through computerized game programs and touchscreen systems during the lesson process, the student's linguistic competence is significantly activated. Fostering self-advocacy and independent self-expression skills in children while shaping kinetic communication strategies constitutes a fundamental neuropedagogical factor in education. The results of international English-language studies confirm that systematically training children with hearing impairments in dactyl and sign speech from an early age not only expands their communication circle but also significantly improves their academic performance indicators at school. Within the educational and social environment, the child must reach a proficiency level where they can freely express lesson requirements, questions, and answers by utilizing their dactyl and sign capabilities. The formation of such socio-communicative behavioral models is implemented in specialized lessons through case technologies, digital dictionaries, and interactive role-playing games. The rehabilitative competence of the family institution also plays a decisive role in the flawless acquisition of dactyl and sign speech by children with hearing impairments. Parents must ensure that information exchange using dactyl and correct signs is organized within the family environment, rather than being limited solely to classroom hours. The more extensively a child utilizes these tools within the family and among peers, the faster their overall vocabulary and communication experience become activated. Systematic cooperation among the school, special educator, and family fully ensures the child's development as an independent individual.

A multidisciplinary analysis of international and national experiences indicates that the dynamics of teaching dactyl and signs based on innovative pedagogical technologies are directly dependent on 9 fundamental macro-factors. These include: the quality of early visual experience, sensorimotor ability indicators, individual psychological characteristics, the absence of additional intellectual pathologies, active parental involvement in rehabilitation, the interactivity level of the electronic applications used, the systematic nature of dactyl lessons, and the development of a positive sense of achievement in the child. The pedagogical integration of these factors maximizes the child's hand movement kinetics and visual analysis capacity.

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CONCLUSION. In conclusion, teaching dactyl and sign speech to primary school students with hearing impairments is not restricted to traditional repetition methods; rather, it is determined by creating a modern digital technology framework and a rational interactive environment in the classroom. Implementing learner-centered, multidisciplinary, and proactive pedagogical strategies serves to help the child overcome psychological barriers, enhance communicative competence, and fully adapt to the educational environment.

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