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USING MODERN HEARING DEVICES IN TEACHING DEAF CHILDREN

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Annotatsiya: *Ushbu maqolada karlik nuqsonining kelib chiqish sabablari, kar o'quvchilarning eshituv idrokini rivojlantirish vazifalari va nutqning kuchlanish rejimini to'g'ri yo'lga qo'yishda Roger eshitish moslamalarining ahamiyati borasida so'z yuritiladi.*

Kalit so'zlar: *karlik, nuqson, genetika, nutq, eshituv apparati, Roger to'plami.*

Аннотация: *В статье рассматриваются причины глухоты, задачи развития слухового восприятия глухих учащихся, а также значение слуховых аппаратов Roger в коррекции стрессового режима речи.*

Ключевые слова: *глухота, дефект, генетика, речь, слуховой аппарат, коллекция Роджера.*

Abstract. *This article discusses the causes of deafness, the tasks of developing auditory perception in deaf students, and the importance of Roger hearing devices in properly regulating the stress mode of speech.*

Keywords. *deafness, defect, genetics, speech, hearing aid, Roger collection*

Introduction

Deafness is the complete inability to hear sounds. It can have multiple causes and can occur at any age. People may suddenly become deaf due to a viral complication or gradually lose hearing due to disease, nerve damage, or exposure to noise.Biological factors have a hereditary impact. Children inherit not only physical traits like skin color, hair, and eyes but also metabolic features and nervous system traits from their parents. Hereditary diseases such as hemophilia, schizophrenia, some endocrine disorders, and congenital defects like ear canal atresia can be passed down as well. Medical genetics has identified that 30–50% of deafness and hearing loss cases have hereditary origins. Among these, about 80% are recessive, 19% are dominant (passed from parent to child), and 1% are of mixed type. Genetic sensorineural deafness and hearing loss result from abnormalities in the structure of the inner ear (especially the spiral organ).Hydrodynamic disorders of the inner ear also play a significant role. However, natural instincts are governed by the brain, speech organs, and sensory systems. Their development depends on education and upbringing.

Biological factors impact human development during embryonic stages, fetal development, and postnatal periods. Hearing impairment can be caused by infections in the mother (rubella, flu, scarlet fever, measles), antibiotic exposure, alcohol poisoning, blood incompatibility between mother and fetus (Rh factor), or birth complications such as hemolytic diseases. Postnatal infections like encephalitis, meningitis, measles, scarlet fever, flu, nose and throat diseases, and acute otitis can also lead to hearing loss. According to D.I. Tarasov, foreign objects entering the ear canal due to negligence can cause inflammation and hearing loss.The primary biological defect is the dysfunction of the auditory analyzer. This leads to a lack of sound perception, failure to transmit information to the brain, and difficulty in understanding external events. Muteness often follows as a secondary issue, as the child cannot establish normal communication with their environment.

Main Tasks in Developing Auditory Perception in Deaf Students

- Develop residual hearing ability- Foster auditory-visual perception for better speech comprehension- Use auditory perception in understanding expressive speech- Broaden understanding of sounds and train to recognize environmental sounds

These goals are essential for systematically improving hearing abilities, often achieved through the use of individual or frontal sound amplification devices. In teaching, frontal hearing aids are used for group sessions, while individual devices are used in one-on-one sessions. One key factor is establishing proper speech stress patterns. All educational institutions for deaf children in Uzbekistan are now equipped with modern Roger hearing devices.

Roger Device Set

These devices connect to a child's hearing aid and deliver sound waves clearly without interference. Roger devices are suitable for infants, preschoolers, school-aged children, and adults. Research shows that a child must hear approximately 45 million words before school readiness. Using Roger devices increases communication frequency and duration between the child and parents, aiding brain development. Roger set includes the following devices:

1. Touchscreen Mic (Microphone) – Automatically selects frequency ranges and transmits them via a built-in microphone. This is the main device used by the teacher to control other components. 2. NeckLoop (SubNet) – A universal receiver compatible with any hearing aid or cochlear implant, worn around the neck. 3. Pass-around Microphone – Includes buttons for power, volume control, and switching between voice modes. It helps deliver the teacher's voice more clearly to students. 4. Multimedia Hub – Connects to a computer or other devices to deliver audio content (videos or information) clearly to the child.

Conclusion

Using the Roger hearing device set in the education and upbringing of deaf children creates a comfortable communication environment. It helps expand their vocabulary, develop speech, improve the quality of education, and plays a key role in integrating them into society.

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