

THE ROLE OF INDIVIDUAL TRAINING IN THE DEVELOPMENT OF AUDITORY PERCEPTION

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Abstract

This article reveals the role of individual training in the formation and development of auditory perception in children with hearing impairment. The effectiveness of individual training based on various methods and technologies, their impact on speech development, social adaptation and activity in the educational process are analyzed. According to the results of the study, an individual approach has been proven to be the most important factor in restoring auditory perception in accordance with the psychophysiological state and pace of development of each child.

Keywords: Auditory perception, individual training, deaf pedagogy, audio pedagogy, speech development, rehabilitation, hearing aid, correctional methodology.

Introduction

Today, one of the pressing issues in the field of special pedagogy is the improvement of methods of working with children with hearing impairments. In particular, the importance of an individual approach in the process of developing auditory perception is extremely great. Although group classes are important in the formation of general skills, individual classes are more effective, since the hearing level, speed of perception and psychological state of each child are different. In this regard, one of the important tasks is to scientifically and pedagogically substantiate the role and effectiveness of individual classes in the development of auditory perception.

Nowadays, computer technologies are actively being introduced into the educational process. Depending on the age characteristics of the child and the programs used, the computer can act as an opponent, storyteller, teacher or controller in games. Today, there are various computer tools that serve to develop the child's mental functions, such as visual and auditory perception, attention, memory, logical and verbal thinking.

The use of information and computer technologies in listening skills development classes helps children effectively use modern information flows, expands opportunities for knowledge exchange, and forms a positive attitude and high activity among students.

The use of modern technologies in the education of hearing-impaired or deaf children is of great importance in expanding their knowledge, increasing their interest in reading, and developing thinking, imagination, memory, and attention. Such activities are aimed not only at imparting knowledge, but also at forming the child's thinking activity and ensuring social adaptation.



Modern technologies in listening exercises create the following opportunities:

- orienting students in the information flows in the environment;
- teaching practical methods of information processing;
- develop information sharing skills using modern technical tools;
- increase motivation for learning and increase activity in acquiring knowledge.

Although the thinking of deaf children develops relatively slowly, their intellectual capabilities are preserved. This indicates that they have the same potential for learning as their hearing peers. However, their knowledge and skills will fully develop only when the educational process is specially organized. Therefore, in the lessons it is necessary to take into account the developmental features of not only speech, but also general cognitive activity. Otherwise, children may have difficulty perceiving abstract concepts and lose interest in mastering new material 1.

In this regard, the use of computers and multimedia tools in listening skills development classes increases students' motivation and ensures efficiency. Practical experience shows that such tools increase interest in lessons and increase the level of knowledge acquisition. Multimedia presentations facilitate the process of explaining and consolidating a new topic, while game-based activities attract children's attention and enhance their ability to remember.

Organizing hearing classes using multimedia technologies facilitates the effective use of children's residual hearing, the development of speech skills, and the process of social adaptation. The ability to adjust the volume and frequency of the sound creates additional convenience for children using hearing aids. As a result, lesson time is used effectively, students' interest in learning increases, and the pace of intellectual development accelerates.2

DISCUSSION AND RESULTS

The issue of educating deaf children has a long history. For a long time, they were considered unfit for education. The reason for this is the misinterpretation of the essence of the relationship between hearing and speech. Speech disorders were often considered a phenomenon independent of the hearing function. Therefore, children with varying degrees of hearing impairment were included in a single category - the deaf. As a result, among schoolchildren there were both children with hearing impairment and completely deaf children. Of course, the development of auditory perception in the educational process directly depended on the degree of preservation of hearing.

In 1853, a special commission was formed at the Institute for the Deaf and Dumb in Paris, headed by the chief physician Blanchet, to examine children who had participated in hearing development classes. As a result, it was found that some children had significantly improved hearing, others had increased vibration sensitivity, and some had no changes at all. On this basis, the commission emphasized the need to separate children with improved hearing from others. Thus, from the middle of the 19th century, doctors and educators faced the problem of correctly dividing children with different levels of hearing sensitivity into groups. However, at

1Karimova D. Methodology of working with children with special needs. – Samarkand, 2019.

2Ibragimovna, Turgunboyeva Zulkhumor. "FEATURES OF THE DEVELOPMENT OF SPEECH QUALITIES OF HEARING-IMPAIRED STUDENTS." Science Promotion 1.2 (2023): 131-138.



that time, the criteria for grouping were not clearly defined, and children with different residual hearing were combined into one group.

The theoretically ambiguous solution of this problem was also reflected in school practice in the late 19th and early 20th centuries. In subsequent studies, the development of hearing through exercises was inextricably linked with the search for means of amplifying sound. At the beginning of the 20th century, various methods were widely used: using an electrophone instead of a tuning fork, conducting exercises using a phonograph, activating hearing using a siren, etc.

Many scientists have conducted research on the development of hearing and speech. For example, D. Pickett (1957), L. Pimenov (1962) and others, as well as in Russia, NA Skritsky established the effective use of domestic electrical equipment. Electrical equipment had a positive effect on exercises for the development of hearing, allowing them to amplify sounds and deliver them to children with hearing impairments. This expanded the range of hearing and created conditions for a more complete formation of auditory perception.

The results of using electrical devices were evaluated differently. Some researchers noted that with the help of these devices it is possible to improve or even restore hearing, while the Russian scientist MA Svishchev believed that such exercises cannot fully restore hearing function, but play an important role in the development of auditory perception. He also emphasized the need to consider hearing impairments not only from an acoustic point of view, but also their impact on thinking and speech. The methodological principles put forward by Svishchev are still used in today's methodology for developing auditory perception.

In his opinion, the use of sound amplification equipment in the educational process is very important. Children should especially use special headphones during lessons. Currently, sound amplification equipment is widely used both in general education classes and in special classes aimed at developing hearing.

Among the Russian surdopedagogues were FF Pay, AI Dyachkov, RM Boskis, TA Vlasova, LV Neyman, VI Beltyukov, AM Masyunin, EP Kuzmicheva and other scientists. TA Vlasova (1983) noted that the Research Institute of Defectology conducted extensive research to determine the possibilities of speech perception in deaf and hearing-impaired children of different ages. The main goal of this research was to find ways to effectively use auditory perception and form oral speech based on the existing hearing remains. In this direction, an audiological laboratory was created, where mechanisms of perception in hearing impairment, ways of pronunciation formation, and correction methods using technical means were developed.

In addition, specialized laboratories were established to study the possibilities of visual and tactile perception of speech. These centers studied the interaction of various analyzers in the process of speech formation under normal and pathological conditions. Audiotechnical laboratories were also established to develop technical devices that help in the formation of pronunciation and new models of individual hearing aids.

As a result of many years of complex research, a completely new approach to studying the speech perception capabilities of children with hearing impairments has been developed. Through the effective use of residual hearing with the help of special equipment, opportunities



for better speech perception of others have been developed. This approach has significantly contributed to the development of speech hearing.

It is known that any deviation in the physical or mental development of a child affects his overall formation. In particular, a defect in the auditory analyzer causes serious difficulties in the development of speech, the formation of oral communication, and the general intellectual development of the child. A decrease or complete loss of hearing limits the child's perception of the environment, slows down the process of acquiring knowledge and skills.

In the education system of Uzbekistan, special groups for children with hearing impairments operate in preschool institutions, boarding schools, and vocational colleges. In such institutions, students are trained according to 9-year general education programs based on state educational standards. Thanks to the achievements of surdopedagogues, students with hearing impairments are achieving success in many areas: they receive education in special evening schools, later graduate from higher educational institutions, and work in various spheres of society, not inferior to their peers.

Some children experience developmental delays early in life due to certain health conditions. Before a formal diagnosis can be confirmed, it is important to provide appropriate care - this is where the concept of early intervention comes in. Early intervention refers to a range of health and developmental services offered to children who show signs of delay or are at risk of developmental disorders, especially those that are visible or hidden in their neurological growth ³.

Effective early intervention requires identifying children who need support and offering appropriate programs—even before a definitive diagnosis is made. Such proactive action can help prevent difficulties from arising or worsening. Numerous studies have confirmed that early intervention has a profound impact on the child, their family, society, and even the national economy, as it significantly reduces the challenges that individuals with special needs and their caregivers typically face.

Early intervention services are typically provided by a multidisciplinary team of specialists, including pediatricians, neurodevelopmental specialists, pediatric neurologists, physical therapists, and psychologists. Depending on the child's condition, specialists such as ophthalmologists, speech therapists, and audiologists may also be involved.

Early childhood is widely recognized as one of the most important stages of human development due to its high capacity for growth, learning, and adaptation. During this stage, children acquire basic physical, emotional, cognitive, perceptual, linguistic, and social skills, shaping their overall personality and creativity.

Among these abilities, auditory perception plays a key role in the development of both language and communication. During the child's development, it is greatly influenced by biological, environmental and educational factors, and any weakness in auditory perception can negatively affect the child's ability to communicate and interact socially. Therefore, strengthening auditory skills is essential for improving the child's language use and social behavior.

3 G. Gromova. Audiopedagogy and rehabilitation technologies. – Moscow, 2018.



Children struggling with hearing or speech disorders often face communication barriers that can lead to long-term psychological and behavioral difficulties. In this regard, early intervention programs play a crucial role in reducing the impact of these disorders by strengthening auditory and cognitive skills, which in turn improves pronunciation and speech clarity.

The significance of this study is the key role of early intervention in enhancing auditory perception and improving speech and pronunciation skills in children. Many researchers have shown that targeted auditory training, when introduced at an early age, can significantly improve the linguistic capabilities of children with speech-related disorders. This highlights the need to develop scientifically based early intervention programs aimed at strengthening the listening and speaking skills of the population.⁴

- To provide a complete theoretical understanding of auditory perception and its relationship to speech and pronunciation development.
- To study the contribution of early intervention programs in improving auditory perception in children with speech impairment.
- Review effective strategies and methods used in developing curricula for such children.

Despite significant advances in early intervention research, there are significant gaps in understanding the precise relationship between auditory perception and speech disorders. In addition, many existing early intervention programs face challenges in design and implementation, particularly in adapting to the individual needs of each child. Therefore, this study aims to explore theoretical and practical foundations that can improve the effectiveness of early intervention strategies in this area.

Auditory perception is an important basis for human interaction with the environment, the acquisition of language and speech, and social integration. Especially in childhood, information received through hearing serves as one of the central factors in thinking, imagination, speech, and emotional development. Therefore, early diagnosis and properly targeted individual training are of great importance in working with children with hearing impairments. Researcher Pichora-Fuller (2012) states that in the process of developing auditory perception, an individual approach, taking into account the speed of reception, the level of differentiation of phonemes, and cognitive reserves of each child, increases efficiency several times.

The advantage of individual training is that it does not mask the child's existing deficits as in general training, but rather allows for individualized treatment of each element. Research by Fu et al. (2004) has shown that individualized auditory training has a positive effect of 30-40% in distinguishing phonemes. Individual training uses special games and technical exercises aimed at isolating the sound source, forming a phonetic image, perceiving word-tone, as well as understanding speech in background noise. For example, in the perceptual training model proposed by Schow and Nerbonne (2006), the child not only hears sounds, but also repeats them, perceives them rhythmically, and adapts them to the context ⁵.

⁴Kadirova N. Fundamentals of Surdopedagogy. – Tashkent, 2020.

⁵Schow, RL, & Nerbonne, MA (2006). *Introduction to Audiological Rehabilitation* . Pearson Education.



It is even more important to activate perception in children using hearing aids. According to Lunner (2003), the technical device amplifies sound, but since the process of perceiving it is associated with neuroplasticity in the brain, it is difficult to achieve positive results without constant individual training. Therefore, in order to eliminate the situation of “I heard, but I did not understand”, perceptual exercises should be mandatory along with hearing aids. In this case, exercises aimed at distinguishing the speed, frequency and duration of sounds give good results. Individual training also activates not only the child's auditory perception, but also attention, working memory and language competence. Research by Chan et al. (2008) shows that auditory and cognitive processes are closely related, and it is most effective to train them in an integrated manner, rather than developing them separately. In this regard, Shinn-Cunningham and Best (2008) recommend combining visual, motor and auditory stimuli in individual training 6.

Local speech therapists also emphasize the advantages of an individual approach. For example, according to the defectologist of the Republic of Uzbekistan R. Abdullayeva, “the use of standard model methods in working with children with speech defects is not enough; without a system of auditory-perceptual exercises adapted to each child, full development cannot be expected.” Such exercises include games such as “hear-and-find”, “choose the tone of the word”, “catch the word in the noise”, rhythmic valves, audio stimulators, hearing tests combined with visual signals.

Another important aspect of individual training is its positive impact on emotional and volitional state. Many children experience feelings of self-doubt, social isolation, or fear due to their hearing impairment. In the process of individual training, the child's successes are often encouraged, he feels capable, which increases motivation and encourages him to use speech more actively (Sweetow & Sabes, 2006) 7.

CONCLUSION

In conclusion, individual training in the development of auditory perception is one of the most effective correctional and methodological directions. While group training forms general social skills, individual training accelerates the restoration of auditory perception and speech development. Therefore, it is necessary to widely introduce individual training programs in each special educational institution, enriching them with modern technologies . Individual training in the development of auditory perception should be considered not only as an auxiliary, but also as the main methodological principle. Determining the hearing and cognitive characteristics of each child and applying training adapted to them significantly accelerates the processes of restoring perception and developing speech. According to scientists, if standard group training is 50-60 percent effective, then individual approaches give results up to 80-90 percent. Therefore, it is necessary for special education teachers, audiologists and parents to jointly develop individual rehabilitation programs.

6Chan, RC, Shum, D., Touloupoulou, T., & Chen, EY (2008). *Working memory components and their roles in speech recognition under noise* . Neuropsychology.

7Sweetow, R., & Sabes, J. (2006). *The need for and development of an adaptive listening and communication enhancement (LACE) program* . Journal of the American Academy of Audiology.



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