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## **FEATURES OF COGNITIVE PROCESSES IN CHILDREN WITH HEARING IMPAIRMENT**

### **ОСОБЕННОСТИ КОГНИТИВНЫХ ПРОЦЕССОВ ДЕТЕЙ С НАРУШЕНИЕМ СЛУХА**

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#### **Аннотация:**

В статье раскрываются особенности развития когнитивных процессов у детей с нарушением слуха: внимание, память, восприятие, мышление. Обосновывается факт раскрытия особенностей при ориентации на норму развития.

**Ключевые слова:** внимание, память, восприятие, мышление, когнитивное развитие, когнитивные процессы, дети с нарушением слуха

#### **Abstract:**

The article reveals the features of the development of cognitive processes in children with hearing impairment: attention, memory, perception, thinking. The fact of the disclosure of features in the orientation to the norm of development is substantiated.

**Keywords:** attention, memory, perception, thinking, cognitive development, cognitive processes, children with hearing impairment



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The cognitive development of children with hearing impairment is based on the same patterns as normal. However, there are some features that are caused by both primary and secondary impairments: delayed speech acquisition, communication barriers, and the peculiar development of the cognitive sphere.

Due to hearing impairment, vision plays a special role, on the basis of which the speech of an inaudible child develops. Motor, tactile, tactile-vibrational sensations become very important in the process of cognition of the surrounding world. Visual perception is the leading type of perception for people with hearing impairments. This is the main sensory basis for spatial orientation, as well as the perception of speech — gestural, dactylic, verbal. Vibrational sensations are both contact and distant channels of perception of reality, which perform an important compensatory and cognitive function for the deaf. They enable an inaudible person to judge: — contact and distantly the characteristics of sounds (tempo, strength, rhythm of music, speech flow, phoneme discrimination by deafness, stressed syllables); — about the operation of devices (alarm clocks, car engines); — the characteristics of remote phenomena that are out of sight (their location, size, mass, strength, pace of action, for example, an approaching train).

Tactile perception is a complexly organized cognitive process that combines skin and motor components. For the deaf, visual perception plays a compensatory role in ensuring balance, and therefore the gait of the deaf with their eyes open differs little from the gait of the hearing. The role of kinesthetic sensations in the assimilation of pronunciation skills by the deaf is especially significant. After all, it is these sensations received from one's own articulatory movements that are the leading physiological support for the deaf in creating an image of a word, as well as a means of self-control over pronunciation.

With hearing loss, kinesthetic sensations are deprived of the additional help of auditory control; hence, the movements of the deaf lag behind the norm in terms of smoothness, rhythm, and coordination, fine motor skills of the hands suffer, and lack of speech regulation. Kinesthetic sensations in deaf children do not develop spontaneously enough, they need to be formed purposefully in lessons of subject-practical training, labor and adaptive physical education, phonetic rhythmic, and



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trained in individual pronunciation classes. In the deaf, visual perception is the leading sensory basis of attention.

Visual attention plays a special role in the life of a deaf person, as it is maximally involved in the process of communication and learning: in order to understand the oral speech of the interlocutor (teacher's information) by lips, by dactylic signs, by dynamic gestures, by facial expressions, the deaf person must be extremely focused. Due to the overstrain of the visual analyzer, the attention of the deaf is characterized by exhaustion and instability. The main qualities of attention (volume, stability, distribution, and switching) are formed in the deaf 3-4 years later than in the hearing.

The memory of deaf children differs in a number of features. Representations change much more intensively than in normally hearing children (there is a loss of clarity, brightness of the reproduction of an object, a decrease in size, and movement of individual details of the object in space). Memorization is closely dependent on the way the material is presented, so it is difficult for children to memorize, save and reproduce speech material — words, sentences and texts.

Imagination is a special mental process that occupies an intermediate position between perception, thinking and memory. In the life of a deaf person, as well as a hearing person, imagination performs a number of specific functions: — creating images of the result and the means to achieve it; — affective and protective relief of tension and stress through fantasies; - forming an internal action plan — the ability to carry them out by manipulating images; — planning and programming actions in conditions of high uncertainty of the task— assistance in self-regulation of psychophysiological conditions, which is the basis of autotraining.

In a congenitally deaf child, in the process of physical, emotional, and social contacts with loved ones, thinking processes begin to form in a timely and spontaneous manner. Sign language helps deaf children to symbolize external actions with objects in the development of visual-effective thinking and visual-imaginative representations of reality in the development of visual-imaginative thinking.

Deaf children in the pre-speech (pre-verbal) period continue to remain at the stage of visual and imaginative thinking for a long time. The abstract, conceptual



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generalization of reality is elementary in this period. It is precisely in the disproportionate predominance of visual forms over conceptual forms that the main peculiarity of the development of thinking of the deaf in the pre-speech and initial speech period of learning consists. In the process of pedagogically organized teaching of verbal speech and the assimilation of general education knowledge, deaf schoolchildren gradually begin to form higher conceptual forms of thinking: verbal-logical, abstract-logical; however, this process lags behind the norm by three to four years.

The effectiveness of the cognitive development of the deaf depends on the observance of a number of didactic conditions:

- the formation of speech as a means of mental activity, the active presentation by students of their intellectual actions;
- learning the ability to think reversibly, i.e. relatively;
- purposeful development of all types of logical operations, through training in the techniques of their implementation (comparison, analysis, synthesis, classification, generalization, abstraction);
- mastering the principles of logical literacy, the ability to establish cause-effect and other relationships between phenomena. The vocabulary of the deaf is more limited than that of their hearing peers. When understanding and using words by the deaf, the peculiarity of the word's semantics is noted: the use of the word in an excessively broad sense (the word "bus" refers to all types of transport, the word "hat" refers to all types of hats); subject-situational substitutions of words ("sent mail" instead of "sent a letter"); avoidance or incorrect (by the type of situational substitutions) use of generalizing words and concepts ("apple, pear, plum orchard").

The development and correction of the cognitive sphere of a child with hearing impairment includes the development and correction of his sensory intellectual development, mnemonic, emotional-volitional, speech, motivational spheres, mechanisms of volitional regulation. It is known that the intellectual development of a deaf child is carried out through the development of mental processes. At the same time, special attention is paid to the development of thinking — both visually effective and visually figurative, as well as verbal and logical, the formation of



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mental operations of analysis, synthesis, comparison, generalization, classification, abstraction. At the same time, for the sensory and intellectual development of a deaf child, it is not enough to study only in general education lessons, it is necessary to conduct special (correctional) classes. The purpose of the classes is to correct the cognitive sphere of a child with hearing and speech disorders and the development of his personality. In the learning process, the development of basic types of sensitivity, perception of space-time relations, accumulation of knowledge about objects and phenomena of the surrounding world, their interrelationships is carried out.

Thus, it can be concluded that a child with hearing impairment has a significant or minor disorder in all areas of cognitive development, and most importantly, the basic functions of speech and the components of language. Therefore, children suffering from profound hearing impairments lag behind their peers in the general level of development.

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