NEUROPSYCHOLOGICAL BASIS OF THE PROBLEM OF DEVELOPMENT OF MOTOR AREAS AND ITS DISORDERS

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Abstract. This article presents an analysis of the pedagogical and psychological literature of motor areas on the neuropsychological aspects of motor development in children and its problems.

Key words: psycholinguistics, Geschel, pathopsychology, lateralization, phraseologism.

In modern psychological-pedagogical, neuropsychological, psycholinguistic, physiological research, the problem of mental and speech development of children occupies one of the leading places. Several studies have been conducted on the speech and mental development of children. The complex structure of speech disorders in children requires an interdisciplinary (psychological, medical and pedagogical) approach to their study. Neuro and pathopsychology, which studies brain mechanisms in the pathogenesis of mental and speech activity, allows us to understand the structure, mechanisms and clinical manifestations of speech disorders and to determine the most effective methods of correction. According to modern scientific concepts, speech is one of the most complex higher mental functions involved in the implementation of human mental activity.

The acquisition of speech activities can be divided into two main components: word comprehension and pronunciation. The basis of understanding words is physiological hearing, which is carried out in the primary parts of the brain (upper and middle egates of both hemispheres, Geschel's egates). [1,4] Physiological auditory-brain interaction between the occiput (perceives the sound object) and the right hemisphere results in non-verbal auditory gnosis (perception) due to the interaction of the temporal lobes. When the ability to distinguish speech sounds appears, non-speech hearing gnosis turns into speech hearing through the interaction of the temporal areas of the right and left hemispheres and the

lateralization of speech hearing from the left hemisphere to the left temporal region. When one acquires the ability to perceive speech-hearing-word sounds, it becomes speech-hearing gnosis. [2.5]

Later, a much higher level of speech perception is added, which is the understanding of words, phonemic hearing (phonemic perception), which begins to be fully provided by the temporal part of the left hemisphere. The correct perception of sounds and words - visual gnosis - relies on the secondary division of the occipital region. The child not only hears speech, but also controls the position of the speaker's tongue and lips by sight. In this case, inter-system synthesis takes place: the visual-auditory image of sound and word is formed. At first, the child understands (recognizes) the word only according to its specific meaning. When the child's thinking has the ability to generalize, define, to a certain extent, the ability to understand the generalized (abstract) content of words develops. In this case, the understanding of words does not rely on the visual image, a new function of speech appears, and it characterizes the acquisition of skills of a much higher level.

The union of the temporal, forehead and occipital areas (temporo-parieto occipitalis TPO area) means that the factors of the organization of mental processes are connected with the factors of "simulative organization". [8]

The TPO area provides the phonemic analysis necessary for word comprehension, as well as for its articulation.

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The semantic role of phonemes occurs when they are transferred to articulations. Articulatory kinesthetic praxis is the basis for expressing the correct articulatory states, and accordingly, it is also the basis for the correct pronunciation of individual sounds. Later, the ability to repeat words depends on

articulatory praxis (kinetic, afferent), which is the basis for the redevelopment of a series of articulations, i.e., words and sentences, carried out through the premotor area of the frontal cortex of the cerebral hemispheres.[7]

Altered brain tissue and preserved speech function may occur due to compensatory mechanisms and neuroplasticity. Hemispheric connection plays an important role in the implementation of lateralization processes of the left hemisphere in speech function. Auditory-visual (temporal-occipital) interfield conductors are important for the quality of "sounds" in words meaning "an object that is an object of reality". it becomes impossible to turn speech sounds into speech-action units.

In such a situation, there are two compensatory "ways" to get out of the situation: taking into account the positive effect of the applied stimuli, activating the conduction paths of nerve fibers or activating the interaction of phonemes with the visual equivalent of graphemes (letters), and then forming articulables through the visual image of letters. Vertical connections are represented by cortical-subcortical interactions.[2,5]

In conclusion, it should be noted that in any speech disorder, movement disorders of one degree or another are observed. This has a negative effect on the development of children's speech, in particular, on the pronunciation of sounds. The lack of development of the pronunciation of sounds in children is characterized by the fact that the defect is related to the central nervous system. Therefore, the development of speech (pronunciation of sounds) in these children requires special pedagogical training.

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