MODERN NEUROPEDAGOGICAL RESEARCH AND ITS EFFECTIVENESS IN IMPROVING THE FIELD OF EDUCATION

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Abstract. *The article examines the history of the development of neuropedagogy — the organization of the human brain based on neurophysiological mechanisms. The main goal of neuropedagogy is the organization of the educational process from the point of view of the physiological characteristics of the human brain, cognitive abilities and organizational mechanisms.*

Keywords: *Pedagogy, psychology and neurobiology, neuropedagogy, neuropsychology and cognitive psychology, neurotechnology, artificial intelligence and virtual learning.*

The modern education system requires the organization of the educational process taking into account the individual characteristics of the individual, cognitive abilities and characteristics of brain activity. For this reason, the development of neuropedagogy is aimed at improving the education system, increasing the cognitive abilities of students, and enriching teaching methods with new scientific foundations. This discipline is aimed at increasing a person's learning ability and effectively organizing cognitive processes by combining pedagogical technologies with the neurophysiological processes of the brain. This discipline studies how the human brain works in the learning process, how memory, attention, thinking, and emotional states affect the effectiveness of learning. Since each person's learning ability and information processing process have individual characteristics, neuropedagogy helps develop a person-centered learning model. Neuropedagogy is closely related to cognitive psychology and neurobiology, and studies the mechanisms of improving human cognition, brain activity, and the learning process. While knowledge gained from cognitive psychology is important in understanding the human learning process, neurobiology explains how the brain works in the learning process. Together, these disciplines contribute to a deeper understanding of the human mind and cognitive processes, as well as to the development of new methods aimed at individualizing education.

Modern neuropedagogical research is of great importance in improving the field of education. They help to understand more deeply the functioning of the human brain in the learning process and serve to make educational methods more effective.

Today, research in the field of neuropedagogy is being conducted in the following areas:

1. Neuroplasticity and the learning process. The brain's ability to be neuroplastic, that is, to adapt to new information and skills, allows us to tailor the learning process to our individual needs. Norman Doidge's book The Brain That Changes Itself highlights research on the brain's neuroplasticity and explains the adaptability of the human brain and how it changes during the learning process.[1] 2. Emotional state and learning. The emotional state of students and its impact on academic performance are being studied. For example, Richard J. Davidson's book "The Emotional Life of Your Brain" discusses the impact of emotional state on brain activity and its relationship to the learning process[2].

3. Memory and information retention. Learning how to consolidate information into long-term memory helps students learn more effectively. Eric Kandel's book In Search of Memory: The Emergence of a New Science of Memory explores the neurobiological basis of memory and its importance in learning.[3]

4. Use of technology. Neurotechnologies, such as virtual reality and artificial intelligence, are being used in the educational process to improve student learning. Stanislas Dehaan's book "Reading the Brain: The Science and Evolution of a Human Brain" discusses the brain's role in reading and how technology can enhance learning.[4] This research has opened up opportunities to personalize learning, develop students' cognitive skills, and improve teaching methods. This helps to increase the effectiveness of learning and help students better assimilate knowledge. In the modern education system, the connection between neurobiology and the learning process is growing. How the human brain works in the learning process, the mechanisms of memory, attention, thinking and decision-making directly affect the effectiveness of learning. For this reason, neurobiology serves as a scientific basis for improving the process of knowledge acquisition, developing cognitive abilities, and creating a learning environment that is adaptive to students.

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