

DIAGNOSTICS OF STUDENTS' NEUROGRAPHIC CHARACTERISTICS**Normurodova Lobar**

2nd-year Master's student, Navoi State University

Abstract: This article presents information about the emerging field of neurography in education, the diagnosis of students' neurographic characteristics, and the identification of students' psychotypes based on the dominance of either the right or left cerebral hemisphere in the learning process. In the modern innovative era, it is essential to apply neuropsychological approaches related to brain activity in delivering information to each student. Neurography specifically studies the impact of the educational environment on the brain. Its application in educational practice is considered a key factor in improving the quality of education.

Keywords: Brain plasticity, neurography, emotional components, neurons, hyperactive children, dichotic testing, psychotypes, optimization.

INTRODUCTION

Neurography is a new direction in pedagogy, representing an interdisciplinary field that integrates pedagogy with neuroscience (neurobiology, cognitive psychology, and psychophysiology). This discipline is widely used in solving practical problems related to the development of teaching and upbringing methods in education. Neurography studies how to effectively use the natural properties of the brain for efficient learning and knowledge acquisition.

Today, neuropsychological approaches related to brain activity are becoming increasingly important in improving lesson quality and delivering information effectively to each student. Neurography studies the influence of the educational environment on the brain, and its practical application is considered a key tool for improving educational quality. The main goal of this approach is to individualize learning by identifying each student's stress level, cognitive abilities, and psychological characteristics, and developing adapted learning programs. Neurographic diagnostics helps identify students' psychological types, such as left-hemisphere or right-hemisphere dominance, and develop appropriate teaching strategies tailored to their needs. In diagnosing neurographic characteristics, attention must be paid to biological, physiological, psychological, and cognitive interests, and educational materials should be iv0 accordingly. Individualization of the learning process is an important means of fully realizing each student's potential. Using modern psychometric tests and neurophysiological research methods, it is possible to design suitable learning strategies and offer effective educational approaches for each student. For example, hyperactive children benefit from more movement-based activities, students with weak memory require memory-strengthening exercises, and learners with attention deficits need logical thinking tasks. Such approaches make the learning process more effective and engaging, allowing each student to achieve maximum educational benefit.

Several researchers in neurography have studied the diagnostic aspects of students. For example, A.S. Schmidt (Russia) and E. Rosenthal (USA) developed key principles of neurography and explored ways to improve education through psychological and neurological analysis of students. According to A.S. Schmidt's research, students with dominant right-hemisphere activity process visual information more effectively and show higher creativity, while those with dominant left-hemisphere activity perform better in logical and analytical tasks. In addition, L.V. Zankov, in his theory of "Cognitive Development," studied neurographic factors influencing student development and their practical application in education. The main



principles of neurography are as follows.

First, brain plasticity: the brain has the ability to change during the learning process. This means that with proper teaching methods, new skills can be acquired at any age. Learning keeps the brain active and healthy. As John Locke stated: “The mind of a child is like a blank sheet of paper; whatever is written on it remains.”

Second, emotional components: emotions play a crucial role in learning. Positive emotions contribute to long-term memory retention and knowledge acquisition.

Third, individual approach: since each brain is unique, teaching methods must also be individualized. Neurography focuses on understanding how each student’s brain works and identifying their learning needs and abilities.

Fourth, practice and experience: information should be learned not only theoretically but also through practical activities, which strengthen neural connections in the brain.

Fifth, the connection between body and brain: physical activity and a healthy lifestyle positively influence learning. Movement enhances brain activity.

In conclusion, neural activity depends on various physiological and psychological factors.

ANALYSIS AND RESULTS

Neurographic diagnostics involves a deep analysis of students’ learning activities and personal characteristics. Neurophysiological and psychological methods are used to assess brain function and academic performance. The main tools include psychometric tests (memory, attention, cognitive functions), neurographic tests (dominance of brain hemispheres), and interest and temperament assessments. EEG (electroencephalography) is also used to measure brain electrical activity and evaluate concentration levels. The diagnostic process includes several stages: initial assessment of health, motivation, and psychological state; analysis of cognitive abilities such as logical thinking, creativity, and attention; and selection of individualized learning strategies. Based on diagnostic results, students’ strengths and weaknesses are identified, and tailored teaching methods are developed. Their cognitive and emotional needs are considered, and learning materials are adapted accordingly.

Neurographic analysis helps determine effective learning strategies for each student, identify stress resistance levels, and detect learning difficulties. Methods such as hemispheric analysis and dichotic testing are widely used. Dichotic testing, introduced by Donald Broadbent in “Perception and Communication”, studies auditory attention by presenting different stimuli to each ear. Students can be classified into psychotypes:

- Logical-analytical type (left hemisphere dominant)
- Creative-emotional type (right hemisphere dominant)
- Mixed type (balanced hemispheric activity)

The analysis shows that neurographic methods are highly effective in primary education due to their ability to combine cognitive and emotional learning processes. One of the main advantages of this approach is that it allows students to express thoughts visually, which is particularly important at early developmental stages when abstract thinking is still forming. However, successful implementation requires well-trained teachers who understand both the



psychological and methodological aspects of neurography. Lesson planning must be carefully designed to match students' age, abilities, and learning needs. Another challenge is the initial difficulty some students may experience in visual expression. Nevertheless, continuous practice significantly reduces this limitation over time. Overall, neurographic methods create a positive and interactive learning environment that supports holistic child development.

CONCLUSION

In conclusion, the diagnosis of students' neurographic characteristics plays an important role in modern education. It helps identify brain activity patterns, psychological types, and functional systems involved in learning. Through neurographic diagnostics, students can be grouped according to their dominant brain hemisphere and learning preferences. Neurographic assessment includes evaluation of attention, memory, logical thinking, and creativity using specialized tests and methodologies. Based on results, individualized educational strategies are developed. This approach is essential for improving students' academic success and supporting their personal development. It enables teachers to implement personalized teaching strategies and optimize learning outcomes.

REFERENCES

1. Yuldashev M.X. "Fundamentals of Neuropsychological Methods." Tashkent: UzMU Publishing House, 2021.
2. Tokuhamma-Espinosa, T. (2020). Neuromyths: Debunking False Ideas about the Brain in Education. New York: W.W. Norton & Company, pp. 45–67.
3. Howard-Jones, P. (2018). Neuroscience and Education: A Review of Educational Interventions Based on Brain Research. London: OECD Publishing, pp. 112–139.
4. Sousa, D.A. (2021). How the Brain Learns. 6th Edition. Thousand Oaks: Corwin Press, pp. 78–104.
5. Goswami, U. (2019). Cognitive Development and Learning. Cambridge University Press, pp. 150–176.
6. Diamond, A. (2020). "Executive Functions and Education: The Importance of Cognitive Control." *Developmental Psychology Review*, Vol. 12(3), pp. 201–230.

