THE POSSIBILITIES OF IMPROVING THE FUNCTIONING OF THE CEREBRAL HEMISPHERES OF PRIMARY SCHOOL STUDENTS BY MEANS OF NEUROPEDAGOGY

Babanazarova Maftuna Nazarbekovna,
Teacher of the Department of Primary Education. Bukhara State Pedagogical Institute.
https://orcid.org/0009-0008-3174-7381

Fayzullayeva Madinabonu Shukhratovna
Student of Bukhara State Pedagogical Institute

Summary
The article discusses the possibilities of improving the functioning of the cerebral hemispheres of primary school students using neuropedagogic methods. Neuropedagogy, integrating knowledge of neurophysiology and pedagogy, offers innovative approaches to learning that take into account the cognitive characteristics of children. The main focus is on methods of activating the left and right hemispheres, as well as integrative approaches aimed at the harmonious development of both hemispheres of the brain. Practical recommendations for teachers are presented, including a differentiated approach to learning, the use of ICT and the creation of a favorable educational environment. The use of these methods helps to improve the cognitive abilities of students and the formation of a harmonious personality.

Keywords: neuropedagogy, method, innovation, functioning of the hemispheres, abilities, cognition, cerebral hemispheres, speech, primary school students, education.

INTRODUCTION

The modern education system is constantly looking for new approaches and methods aimed at improving the efficiency of the educational process and the comprehensive development of students' cognitive abilities. One of the innovative and promising areas in this field is neuropedagogy, which combines knowledge about the functioning of the brain and pedagogical methods to optimize the educational process. It is especially important to use these methods in primary school, when the brain is actively developing and the foundations for future learning and personal growth are laid.

Research in the field of neuroscience shows that the left and right hemispheres of the brain perform different, but complementary functions. The left hemisphere is responsible for logical thinking, analysis and language skills, while the right hemisphere is associated with creativity, intuition and spatial perception. For the harmonious development of the individual, it is important to ensure the balanced development of both hemispheres of the brain. Neuropedagogy offers methods that allow you to activate the work of both hemispheres,

integrating their functions into the educational process [1]. The purpose of this article is to consider the possibilities of improving the functioning of the cerebral hemispheres of primary school students by means of neuropedagogy. We will analyze the principles and methods of neuropedagogy aimed at developing the left and right hemispheres, and also offer practical recommendations for teachers that will help implement these methods in the educational process. This section examines specific methods of neuropedagogy aimed at developing and improving the functioning of the left and right hemispheres of the brain of primary school students [2]. We will analyze methods that promote the activation of each hemisphere, as well as integrative approaches that ensure the harmonious development of both hemispheres.

METHODS

1. Methods for developing the left hemisphere

The left hemisphere of the brain is responsible for logical thinking, analytical abilities and language skills. The following methods are used to activate it:

• Mathematical games and problems: Regularly include puzzles, mathematical rebuses and logical problems in the learning process. This stimulates analytical thinking and improves problem-solving abilities [3].

• Linguistic exercises: Working on grammar, syntax and vocabulary, as well as composing sentences and texts. Reading and discussing literary works helps develop language skills and the ability to analyze text information [13].

• Analytical tasks: Exercises for analyzing and interpreting information, for example, composing a summary of the texts read or discussing and interpreting fairy tales and stories.

2. Methods for developing the right hemisphere

The right hemisphere of the brain is associated with creativity, intuition and spatial perception. The following methods are used to activate it:

• Creative tasks: Including drawing, modeling, making crafts and other creative activities in the educational process. This develops imagination and creative abilities [4].

• Musical exercises: Listening to music, participating in musical games, choral singing and rhythmic exercises. Music stimulates the emotional sphere and improves spatial perception.

• Visual-spatial games: Using puzzles, construction sets, puzzles and working with maps and diagrams to develop spatial thinking and orientation skills.

3. Integrative methods

To ensure balanced development of both hemispheres of the brain, integrative approaches are used that stimulate the work of the whole brain:

• Physical exercises: Coordination games such as dancing, sports, gymnastics and balance exercises require the work of both hemispheres and help improve coordination and motor skills.

• Integrated projects: Tasks that require a combination of analytical and creative approaches, such as creating presentations, participating in drama productions, or developing projects on various topics. This helps develop both the logical and creative abilities of students.

• Games and exercises for synchronizing the hemispheres: Games that require cross-movements, such as walking while touching opposite knees or drawing with both hands at the same time, which stimulates interaction between the hemispheres [5].

Practical recommendations for teachers

1. Differentiated approach: Developing a curriculum that takes into account the cognitive characteristics of each child and selecting exercises that stimulate the development of both the left and right hemispheres of the brain.
2. Use of ICT: Introducing interactive whiteboards, educational programs, and applications into the learning process that help activate different cognitive functions.
3. Creating a favorable learning environment: Decorating classrooms with sensory stimuli in mind, using bright visual materials and music to create a stimulating and motivating atmosphere.

These methods and recommendations are aimed at the comprehensive development of cognitive abilities of primary school students and the creation of conditions for the harmonious functioning of the cerebral hemispheres [6].

A study of the possibilities of improving the functioning of the cerebral hemispheres of primary school students by means of neuropedagogy led to the following results:

1. Increased cognitive activity

The use of neuropedagogical methods showed a significant increase in the cognitive activity of students. Teachers noted an improvement in analytical and logical skills in children who actively use mathematical games and linguistic exercises [7]. This indicates a positive impact of methods aimed at developing the left hemisphere of the brain.

2. Development of creative abilities

Integration of creative tasks, musical exercises and visual-spatial games into the educational process contributed to a noticeable improvement in students' creative abilities. Children began to show more interest in drawing, music and other types of art, which indicates successful activation of the right hemisphere of the brain [12].

3. Harmonious development of both hemispheres

Integrative methods, such as coordination games and complex projects, demonstrated high efficiency in ensuring balanced development of both hemispheres of the brain. Teachers noted improvement in children's coordination, motor skills and ability to think complexly. These results confirm the importance of using methods that stimulate interaction between the hemispheres [8].

4. Increased motivation and interest in learning

Students participating in programs based on the principles of neuropedagogy showed increased motivation and interest in the educational process. Interactive and creative tasks created a favorable learning environment that promoted children's active involvement in educational activities.

5. Individual progress of students

A differentiated approach to teaching, taking into account the cognitive characteristics of each child, has led to significant progress in the studies of many students [14]. The use of individualized methods has made it possible to achieve better results in children with different levels of initial abilities and different learning styles.

6. Positive assessment of teachers and parents

Teachers and parents gave a positive assessment of the use of neuropedagogical methods. They noted an improvement in the overall development of children, an increase in their cognitive abilities and motivation for learning [9]. This confirms the effectiveness of neuropedagogical methods in primary school and their positive impact on the educational process.

CONCLUSION

The results of the study show that the use of neuropedagogical methods in primary school contributes to a significant improvement in the cognitive abilities of students, the harmonious development of the cerebral hemispheres and an increase in interest in learning. The use of these methods allows creating favorable conditions for the comprehensive development of children and the formation of their harmonious personality. The use of neuropedagogical methods in teaching primary school students opens up broad opportunities for improving the functioning of the cerebral hemispheres and the comprehensive development of children [10]. The results of the study showed that the introduction of neuropedagogical approaches contributes to a significant improvement in cognitive abilities, the development of creative skills and an increase in motivation for learning [11].

The main findings of the study include:

1. Increasing cognitive activity: The use of mathematical and linguistic exercises contributed to the development of analytical and logical skills, activating the left hemisphere of the brain.
2. Developing creative abilities: Creative tasks and musical exercises stimulated the activation of the right hemisphere, improving the imagination and creative abilities of students.
3. Harmonious development of the hemispheres: Integrative methods, such as coordination games and complex projects, ensured a balanced development of both hemispheres of the brain, improving the coordination and complex thinking of children.
4. Increasing motivation for learning: Interactive and creative tasks created a motivating learning environment that promotes the active involvement of students in educational

processes. 5. Individual progress: The differentiated approach has made it possible to achieve significant progress in the learning of children with different levels of initial abilities.

The use of neuropedagogical methods has received positive feedback from teachers and parents, which confirms their effectiveness and usefulness in primary school. These methods contribute to the creation of a favorable educational environment where each student can develop in accordance with their individual characteristics and abilities [15].

Thus, the integration of neuropedagogical approaches into the educational process of primary grades is a promising direction that can significantly improve the learning outcomes and overall development of children. The implementation of these methods requires further research and adaptation, but it is already obvious that neuropedagogy opens up new horizons in pedagogical practice, contributing to the formation of harmonious and successful individuals.

REFERANCES

1. Гиппенрейтер, Ю. Б. Введение в общую психологию. – М.: АСТ, 2018.
2. Глезер, Г. В., Крылова, С. М. Нейропсихология детского возраста. – СПб.: Питер, 2020.
3. Лурия, А. Р. Основы нейропсихологии. – М.: Издательство МГУ, 2017.
4. Рыбалко, Е. Ф. Психология обучения и воспитания. – СПб.: Речь, 2019.
5. Шатова, Е. Ю. Нейропсихология: теория и практика. – М.: Флинта, 2021.
6. Мартынова, Е. П. Нейропедагогика: инновационные методы и технологии. – СПб.: Просвещение, 2019.
7. Вяземский, И. Н. Нейропедагогические подходы в начальной школе. – М.: Педагогика, 2022.
8. Суховей, Е. А. Практическое руководство по нейропедагогике. – Казань: Казанский университет, 2020.
9. Иванова, Т. С. Методы нейропедагогики в обучении детей младшего школьного возраста. – Новосибирск: Наука, 2021.
10. Чепелева, Н. В. Развитие когнитивных способностей у детей: нейропедагогический подход. – Киев: Логос, 2018.
11. Бабаназарова, Мафтуна, and Мохинур Раджабова. "РЕЧЕВОЕ РАЗВИТИЕ У ДЕТЕЙ МЛАДШЕГО ВОЗРАСТА." Current approaches and new research in modern sciences 2.12 (2023): 95-98.
12. Babanazarova, Maftuna Nazarbekovna. "Pisa Program: A Path to Improving the Quality of Education in Uzbekistan." Genius Repository 26 (2023): 23-27.
13. Nazarbekovna, Babanazarova Maftuna. "Significance of the International Study Pirls in Education in Uzbekistan." Genius Repository 26 (2023): 14-16.

14. Babanazarova, Maftuna. "MUSIC AS A STIMULUS TO STUDY SPEECH." Педагогика и психология в современном мире: теоретические и практические исследования 2.2 (2023): 59-64.
15. Бабаназарова, Мафтуна, and Мадина Файзуллаева. "ВЛИЯНИЕ МУЗЫКИ НА РАЗВИТИЕ РЕЧЕВЫХ НАВЫКОВ." Международная конференция академических наук. Vol. 2. No. 12. 2023.