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NEURO-PEDAGOGICAL METHODOLOGIES: SHAPING COGNITIVE SKILLS IN SCHOOLCHILDREN

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This paper explores the application of neuro-pedagogical methodologies in shaping cognitive skills in schoolchildren. Recognizing the growing understanding of brain function and development, it examines how incorporating neuroscientific insights into educational practices can optimize learning outcomes. It reviews evidence-based strategies that target key cognitive domains such as attention, memory, executive functions, and language processing. Furthermore, the paper highlights the potential of personalized learning approaches and the importance of considering individual neurological profiles to maximize cognitive development. Finally, it discusses the challenges and ethical considerations associated with implementing neuro-pedagogical methodologies in the classroom.

The educational landscape in Karakalpakstan, like that of many nations, is undergoing a transformation driven by the need to equip students with the cognitive skills necessary to thrive in the 21st century. Traditional pedagogical approaches, while valuable, may not fully address the diverse learning needs of all students. Recent advances in neuroscience offer exciting opportunities to enhance teaching practices by leveraging our understanding of how the brain learns and develops. This paper will outline the theoretical and practical aspects of neuropedagogy and will suggest ways in which schoolchildren can grow and develop through neuro-pedagogical methodologies.

Neuropedagogy, also known as educational neuroscience or mind, brain, and education (MBE), represents an interdisciplinary field that bridges neuroscience, psychology, and education. It seeks to translate neuroscientific findings into practical pedagogical strategies that can improve learning outcomes.

The foundation of neuropedagogy lies in the understanding of:

Brain Plasticity: The brain's ability to reorganize itself by forming new neural connections throughout life. This highlights the importance of providing stimulating and enriching learning experiences to promote brain development.

Cognitive Systems: The intricate networks of brain regions involved in cognitive processes such as attention, memory, language, and executive functions.

Individual Differences: The recognition that each student possesses a unique neurological profile that influences their learning style, strengths, and challenges.

Neuro-Pedagogical Methodologies for Shaping Cognitive Skills:

Based on these theoretical principles, several neuro-pedagogical methodologies have emerged as promising approaches for shaping cognitive skills in schoolchildren:

1. **Attention Training:** Strategies to enhance attentional control and focus, such as mindfulness practices, attention-deficit/hyperactivity disorder (ADHD) interventions, and cognitive training programs.

2. **Memory Enhancement:** Techniques to improve encoding, storage, and retrieval of information, including spaced repetition, elaborative rehearsal, mnemonics, and visual imagery.

3. **Executive Function Development:** Activities to strengthen working memory, inhibitory control, and cognitive flexibility, such as problem-solving tasks, planning and organization exercises, and games that require strategic thinking.

4. **Language Processing Optimization:** Interventions to enhance phonological awareness, reading fluency, and language comprehension, such as multisensory instruction, phonics-based approaches, and vocabulary-building activities.

5. **Personalized Learning:** Tailoring instruction to individual student needs and learning styles, based on assessments of their cognitive strengths and weaknesses. This may involve differentiated instruction, adaptive learning technologies, and individualized learning plans.

6. **Mindfulness and Stress Reduction Techniques:** Practices such as meditation, deep breathing exercises, and yoga to promote emotional regulation, reduce stress, and enhance attentional capacity.

7. **Incorporating Movement and Physical Activity:** Integrating physical activity and movement breaks into the classroom routine to stimulate brain function, improve focus, and enhance learning.

8. **Neuro feedback:** Using real-time feedback from brain activity to train students to self-regulate their brainwaves and improve cognitive performance. This is often used for attention and focus training.

Examples of Practical Applications:

Spaced Repetition Software: Programs that use algorithms to optimize the timing of review sessions, ensuring that students retain information effectively over time.

Brain-Training Games: Computer-based games that target specific cognitive skills, such as working memory or attention.

Multisensory Reading Programs: Reading interventions that engage multiple senses (visual, auditory, kinesthetic) to enhance phonological awareness and reading fluency.

Challenges and Ethical Considerations:

Implementing neuro-pedagogical methodologies in the classroom is not without challenges and ethical considerations:

Cost and Accessibility: The cost of implementing certain neuro-pedagogical tools and technologies may be prohibitive for some schools.

Teacher Training: Effective implementation requires teachers to be trained in the principles of neuropedagogy and the use of specific methodologies.

Over-reliance on Technology: There is a risk of over-reliance on technology at the expense of traditional teaching methods and social interaction.

Privacy and Data Security: The collection and use of student neurological data raise concerns about privacy and data security.

Equitable Access: Ensuring that all students have equitable access to neuro-pedagogical interventions, regardless of their socioeconomic background.

Neuro-pedagogical methodologies offer a promising avenue for shaping cognitive skills in schoolchildren and optimizing learning outcomes. By leveraging our growing understanding of the brain, we can create more effective and personalized learning experiences that cater to the unique needs of each student.

It is essential to approach the implementation of neuropedagogy with a thoughtful and ethical framework, considering the challenges and ensuring that all students have access to these innovative approaches. This framework must consider the students' cultural background and social situations. Further research is needed to explore the long-term effects of neuro-pedagogical interventions and to refine the methodologies for maximum impact. As a nation on the rise, Kazakhstan is well-positioned to embrace the potential of neuropedagogy to foster a generation of skilled and cognitively agile learners.

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THE ROLE OF MOTIVATION IN TEACHING WRITING

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The present article is devoted to one of the important problems of methodology of teaching English language, the role of motivation in teaching writing. We tried to reveal the role of motivation as one of the ways of developing writing skills. David Myers [1, 297] defines motivation as “a need or desire that serves to energize behaviour and to direct it towards a goal.” Frank Hawkins [2, 132-133] defines it as “what drives or induces a person to behave in a particular fashion the internal force which initiates, directs, sustains and terminates all important activities. It influences the level of performance, the efficiency achieved and the time spent on an activity.” All of the definitions refer to stimuli that trigger the motivational process.

Hawkins identifies also the properties of motivation such as it being an internal process with different roles in influencing behaviours (such as directing, initiating, sustaining or