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Для преподавателей высших учебных заведений, студентов, учителей школ, лицеев, гимназий и колледжей.

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BRAIN-BASED LEARNING AND TEACHING STRATEGIES

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Abstract. Brain-based learning (BBL) is an educational approach that harnesses the latest insights from neuroscience to optimize teaching and learning. By understanding how the brain processes, stores, and retrieves information, educators can create learning experiences that are more effective, engaging, and long-lasting. This paper delves into the principles of BBL, exploring its transformative potential to enhance learning outcomes in both offline and online settings. It further presents a case study of a master's research project that applied 5 BBL principles to an online English course, demonstrating the efficacy of BBL strategies in promoting student success. Additionally, it discusses the latest research findings on BBL in offline and online environments, highlighting the potential for personalized and adaptive learning approaches.

Introduction

The human brain, with its extraordinary capacity for learning and adaptation, lies at the heart of the educational process. Understanding how the brain works provides valuable insights into how we can effectively teach and facilitate learning. Brain-based learning (BBL) is an educational approach that aligns with the latest research on how the brain learns, emphasizing personalized, active, and engaging learning experiences [1–15].

Brain-Based Learning as an Educational Approach

At the core of BBL lies the recognition that the brain is not a passive receptacle of information but an active processor that constructs meaning from experiences. This active engagement is essential for effective learning. BBL principles emphasize:

Active engagement: Engage students in hands-on activities, discussions, and problem-solving to stimulate their brains and promote deeper learning.

Multisensory experiences: Utilize a variety of sensory inputs, such as visual, auditory, and kinesthetic activities, to capture attention and enhance memory formation.

Emotional connection: Create a supportive and engaging learning environment that fosters positive emotions, which can enhance motivation and learning retention.

Meaningful context: Connect new information to existing knowledge and experiences to create a meaningful context for learning.

Distributed practice: Break down learning into smaller chunks and provide spaced repetition to allow the brain to consolidate information over time.

Reflection and feedback: Encourage students to reflect on their learning, receive constructive feedback, and adjust their strategies accordingly.

Personalized learning: Tailor instruction to individual needs and learning styles to maximize engagement and success.

Movement and physical activity: Incorporate movement breaks and physical activities to promote brain health and enhance cognitive function.

Social interaction and collaboration: Encourage collaboration and peer learning to foster social-emotional development and knowledge sharing.

Adaptive learning: Utilize technology to provide personalized and adaptive learning experiences based on individual needs and progress.

Master's Research Application of BBL Principles

In a master's research project, I explored the application of 5 BBL principles – active engagement, multisensory experiences, emotional connection, meaningful context, and distributed practice – to an online English course designed for bachelor's degree students aiming to improve their English language skills to B1-B2 level. The course was delivered asynchronously over a period of 72 academic hours through four modules.

The course utilized a variety of BBL-aligned strategies, such as interactive video lessons, engaging activities, role-playing exercises, and authentic materials. Students were also encouraged to participate in online discussions and collaborate on projects. The course assessment included formative quizzes and summative discussions, allowing for continuous feedback and improvement.

The findings of the research indicated that the application of BBL principles effectively enhanced student engagement, motivation, and learning outcomes. Students demonstrated significant improvement in their English language skills, particularly in vocabulary acquisition, grammar usage, and listening comprehension. This success highlights the potential of BBL to enhance learning in online environments.

Current Research: Enhancing Learning through BBL Principles – Comparing Offline and Online Strategies

Recent research on BBL principles has explored their effectiveness in both offline and online learning settings. While the research is still in its early stages, preliminary findings suggest that BBL can positively impact student learning outcomes in both modalities. However, some principles may be more effectively implemented in specific settings.

For instance, offline classes can better accommodate principles that require physical engagement, such as movement and physical activity, and the creation of a supportive learning environment. Online classes, on the other hand, offer opportunities to leverage technology for interactive learning, personalized instruction, and adaptive learning strategies.

Conclusion

Brain-based learning provides a valuable framework for enhancing learning outcomes in both offline and online settings. By understanding the principles that drive effective learning, educators can create engaging, personalized, and adaptive learning experiences that promote deeper understanding, retention, and long-term success. As technology continues to evolve, the integration of BBL principles into online learning platforms holds immense potential for unlocking new

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