Learning with AI: Neurodidactic Ideas for Young Learners of English

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Abstract:

The integration of Artificial Intelligence (AI) in educational settings has opened new horizons for implementing neurodidactic principles in young learners' education. This paper explores how AI-supported learning environments can be optimally designed to align with the brain's natural learning mechanisms, particularly focusing on students aged 6-12 years. By combining insights from neuroscience, cognitive psychology, and educational technology, we examine how AI can enhance three key aspects of neurodidactic learning: emotional engagement, pattern recognition, and adaptive feedback loops.

Results from a pilot study at an Austrian primary school demonstrates that AI-supported learning environments, when designed with neurodidactic principles in mind, improved problem-solving skills and language production in L2. However, the research also highlights the importance of maintaining human interaction and emotional connection in the learning process, suggesting a balanced hybrid approach where AI serves as an enhancer rather than a replacement for human teaching. These findings provide valuable insights for educators and educational technology developers in creating brain-friendly learning environments that leverage AI's potential while respecting neurodidactic principles.

Keywords:

Fuzzy Logic, Portfolio Optimization, Mean-Variance Optimization, CAPM, Behavioral Finance, Momentum Factor.