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The Quantum Paradigm of Education: a Philosophical Model for Uncertainty, Intuition, and Probability Based Learning

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Abstract

The traditional education system, deeply rooted in deterministic and linear models, increasingly fails to respond to the dynamic, uncertain, and complex nature of contemporary learning processes. This study proposes a novel paradigm in educational theory inspired by quantum physics: the Quantum Paradigm of Education. Grounded in concepts such as the Uncertainty Principle, Superposition, and Quantum Entanglement, the model reconceptualizes learning not as a fixed trajectory but as a multidimensional, probabilistic, and intuition-driven process.

The study explores four theoretical dimensions: (1) Uncertainty as a fundamental aspect of cognitive variability; (2) Superposition as a metaphor for simultaneous and conflicting interpretations; (3) Intuition as a valid pedagogical and cognitive component; and (4) Quantum probability as a new lens for student assessment and decision-making.

By integrating insights from cognitive science, educational philosophy, and quantum epistemology, this paper offers an original framework to redesign teacher education, curriculum design, and classroom dynamics. It encourages educators and policymakers to embrace ambiguity, foster creative thinking, and prioritize non-linear pathways in learning. Ultimately, the quantum paradigm provides fertile ground for developing adaptive, flexible, and humane models of education that align with the realities of the 21st century.

Keywords: Quantum Pedagogy, Educational Uncertainty, Intuitive Learning, Probability-Based Learning, Teacher Intuition