The Psychophysics of Learning

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The Psychophysics of Learning: Implications for Learning Systems Design and Configuration

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Abstract

Learning is an inherently neurological process that involves receiving, processing, and making sense of external information. Neurologically, these are the processes of sensation, perception, and cognition and the psychophysics of these phenomena provide insight into the methods and techniques the brain uses to engage with, process, and internalize the meaning of new information to each individual.

This work collects and codifies the psychophysical research for each sense. These research findings are used to create design frameworks for the learning engagement, learning experience, and learning environment, which creates a psychophysical model of learning that simulates the natural processes the brain uses to learn from external stimuli. These design models are translated into practical approaches to curriculum, instruction, and experience design strategies, which promote and enhance learning outcomes for all learners. As a result, learner access to information, consonance with learning processes, and internalization of the learning are aligned with the information processes strategies of the brain.

Keywords: Learning; psychophysics; learning engagement; learning experience; learning environment; learning access; information processing; curriculum design; instructional design; learning ecology; collective learning; implicate order; learning alignment; social integration; diverse learning processes; sensation; perception; cognition; interconnectedness; interaction