Pre-Conference Keynote

Abstract

Measuring and Supporting Self-Regulated Learning and Metacognition in Digital Learning Environments

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This lecture offers practical, research-informed introduction to measuring and supporting self-regulated learning (SRL) and metacognition in digital environments. Participants will explore foundational SRL and metacognitive processes such as goal setting, planning, monitoring, strategy use, and reflection and examine how these processes unfold in technology-rich contexts, including intelligent tutoring systems, game-based simulations, and AI-enabled learning platforms. The lecture introduces a range of measurement approaches, from self-report instruments and think-aloud protocols to multimodal multichannel data sources such as eye-tracking, log data, facial expressions, concurrent verbalizations, and interaction traces. Participants will be shown examples of current AI-based technology-rich learning environments designed to provide adaptive, metacognitively informed scaffolding that supports learners' autonomy and strategic engagement. Through guided discussion, participants will learn how to connect theory, methods, and instructional design to conduct high-quality research and develop effective interventions that enhance SRL and metacognition in digital environments.