

Identifying Physiological Markers That Are Sensitive to Cognitive Load in Preschoolers

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Abstract : Current frameworks in assessment follow lesson delivery and rely heavily on test performance or teacher's observations. This, however, neglects the underlying cognitive load during the learning process. Identifying the pivotal points when the load occurs helps design effective pedagogies and tools that respond to learners' cognitive state. There has been limited research on quantifying cognitive load in preschoolers, real-time. In this study, we recorded electrodermal activity and heart rate variability (HRV) from 10 kindergarteners performing executive function tasks and Johnson Woodcock test of cognitive abilities. Preliminary findings suggest that there are indeed sensitive task-dependent markers in skin conductance (number of SCRs and average amplitude of SCRs) and HRV (mean heart rate and low frequency component) captured during the learning process.

Keywords : early childhood, learning, methodologies, pedagogies

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