



Faculty of **Education**
The University of Hong Kong

Managing Cognitive Load to Optimize Learning Performance and Personalized Instruction

Professor Fred Paas

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12:45 – 14:00

Room 204, Runme Shaw Building, HKU

Chair: Professor Maggie Wang



Abstract:

This talk delves into cognitive load theory (CLT) as a foundation for designing personalized learning strategies that enhance learning performance for learners of all ages and backgrounds. Drawing on empirical insights from CLT, it explores age-specific adaptations to working memory and attention, including the relative age effect and its implications for equitable education. Key strategies will be discussed, such as substituting productive for unproductive cognitive load through task modifications, environmental factors, and embodied cognition via physical activity integrations. Examples from classroom-based interventions, like physical activity breaks and active learning, will illustrate how to tailor instruction to individual profiles, fostering inclusivity and sustainability in educational systems. Attendees will gain practical frameworks grounded in neuroscience and learning sciences to address developmental variations, ultimately promoting personalized tools and platforms that bridge cognitive gaps and support lifelong learning equity.

About the speaker:

Fred Paas is Professor of Educational Psychology at Erasmus University Rotterdam and Editor-in-Chief of *Educational Psychology Review*. He is one of the pioneers of cognitive load theory. His research examines the cognitive architecture that underlies learning and instruction, with a focus on self-regulated learning, multimedia learning, embodied cognition, and the effects of physical activity on cognition and learning. He has authored or co-authored nearly 400 scholarly publications. His contributions have been recognized through his election as Fellow of the American Educational Research Association and through consistent top rankings among the most productive and most cited scholars in educational psychology. He currently serves as Visiting Professor at the University of New South Wales and maintains active international collaborations across Europe, Asia, and Australia.



All are welcome!