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Letter to the Editor

Response to "Cognitive load theory: Practical implications and an important challenge" by Leppink (2017)

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Dear Editor,

I am writing in response to the insightful article by Jimmie Leppink,[1] *"Cognitive Load Theory: Practical Implications and an Important Challenge,"* which makes a significant contribution to educational science, particularly in clinical and medical education. The paper presents a clear, practical interpretation of Cognitive Load Theory (CLT) while simultaneously confronting one of its most persistent challenges: the reliable measurement of different types of cognitive load.

Leppink's structured framework emphasizing the minimization of extraneous cognitive load (ECL), the alignment of learning goals with instructional design, and the integration of learning and assessment resonates with current pedagogical shifts towards learner-centred, adaptive, and evidence-informed education.[2] Especially notable is the author's attention to how worked examples benefit novices, yet might hinder more experienced learners emphasizing the importance of tailored instructional strategies. Furthermore, the article addresses the conceptual fluidity of intrinsic and extraneous cognitive loads, proposing that these constructs are context-dependent rather than fixed. This challenges educators and researchers to move beyond binary interpretations and adopt more nuanced,[3] dynamic instructional approaches.

However, the most pressing issue raised is the difficulty in accurately measuring cognitive load subtypes. The continued reliance on single-item rating scales and the limited use of multimodal data (e.g., eye-tracking, EEG) point to a methodological gap in the field. As Leppink highlights, most studies still capture cognitive load and learning outcomes only once,[4] missing the opportunity to observe longitudinal schema construction and conceptual integration.[5] This challenge should be a call to action for future researchers to explore triangulated measurement approaches combining subjective, behavioural, and physiological[6] data while designing studies that trace learning trajectories over time.

In conclusion, Leppink's article serves both as a practical guide and a theoretical provocation. It urges educators to design cognitively efficient learning experiences and challenges researchers to refine our tools for understanding how learning truly unfolds. I believe this work should inspire further interdisciplinary collaborations to strengthen CLT's role in shaping educational design across domains.

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