



The LEAD Graduate School & Research Network at the University of Tübingen invites you to attend the lecture
by

Prof. Dr. Garvin Brod

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Tackling Scientific Misconceptions: The Element of Surprise

Monday, April 26th, 2021, 12–1 pm
Zoomlink: <https://zoom.us/j/92829208604>

Abstract: Misconceptions about scientific concepts often prevail even if learners are confronted with conflicting evidence. I will present findings of a recent line of research in my lab that tested the facilitative role of surprise for the revision of misconceptions. Surprise was induced by letting learners (of various ages) generate predictions before presenting them with outcomes that conflicted with their misconceptions. Surprise was measured via the pupil dilation response, which reflects an intricate interplay between multiple neuromodulatory systems. We repeatedly observed that generating predictions boosted surprise about conflicting outcomes. Recent findings further suggest that pupil dilations are also predictive of the successful adoption of the correct concept (i.e., theory revision).

Biography: Garvin Brod initially studied music (Jazz trombone) at the Universities of Arts Hanover and Rotterdam, then psychology at Saarland University. He did his PhD at the Max Planck Institute for Human Development, Berlin. Currently, he is a Professor of Psychology at Goethe University Frankfurt and DIPF | Leibniz Institute for Research and Information in Education. At DIPF, he directs the Individualized Interventions Laboratory. His research examines psychological interventions with the goal of improving educational prospects of children.

Important Publications:

- Brod, G. (2021). Generative Learning: Which Strategies for What Age? *Educational Psychology Review*. Advance Online Publication.
- Breitwieser, J., & Brod, G. (2021). Cognitive prerequisites for generative learning: Why some learning strategies are more effective than others. *Child Development*, 92(1), 258–272.
- Tetzlaff, L., Schmiedek, F., & Brod, G. (2020). Developing Personalized Education: A Dynamic Framework. *Educational Psychology Review*. Advance Online Publication.

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