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Adaptive Learning Technology based on Working Memory Capacity

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Theoretical background

- Increasing use of pedagogical videos [1]
- Transient information = huge solicitation of working memory [2]
- Inter-individual differences in working memory capacity (WMC) [3] [4] → Individual differences in video processing and learning depending on WMC

Aims of the project

Develop and test solutions to reduce working memory load during video learning

Proposed solutions:
  - Imposed pauses
  - Highlights (e.g., arrows, keywords)

Sought results:
  Solutions more beneficial to low-WMC learners than high-WMC learners

Challenge: How to estimate WMC?

- Standard approach: Complex-span task → Cognitively costly
- Proposed approach: Estimation in real-time during the first moments of video watching → Need to define indicators of WMC based on strategies and performance

Bibliography