

Assessing Procedural Knowledge and Learner Experience in VR Safety Training Using Multimodal Learning Analytics

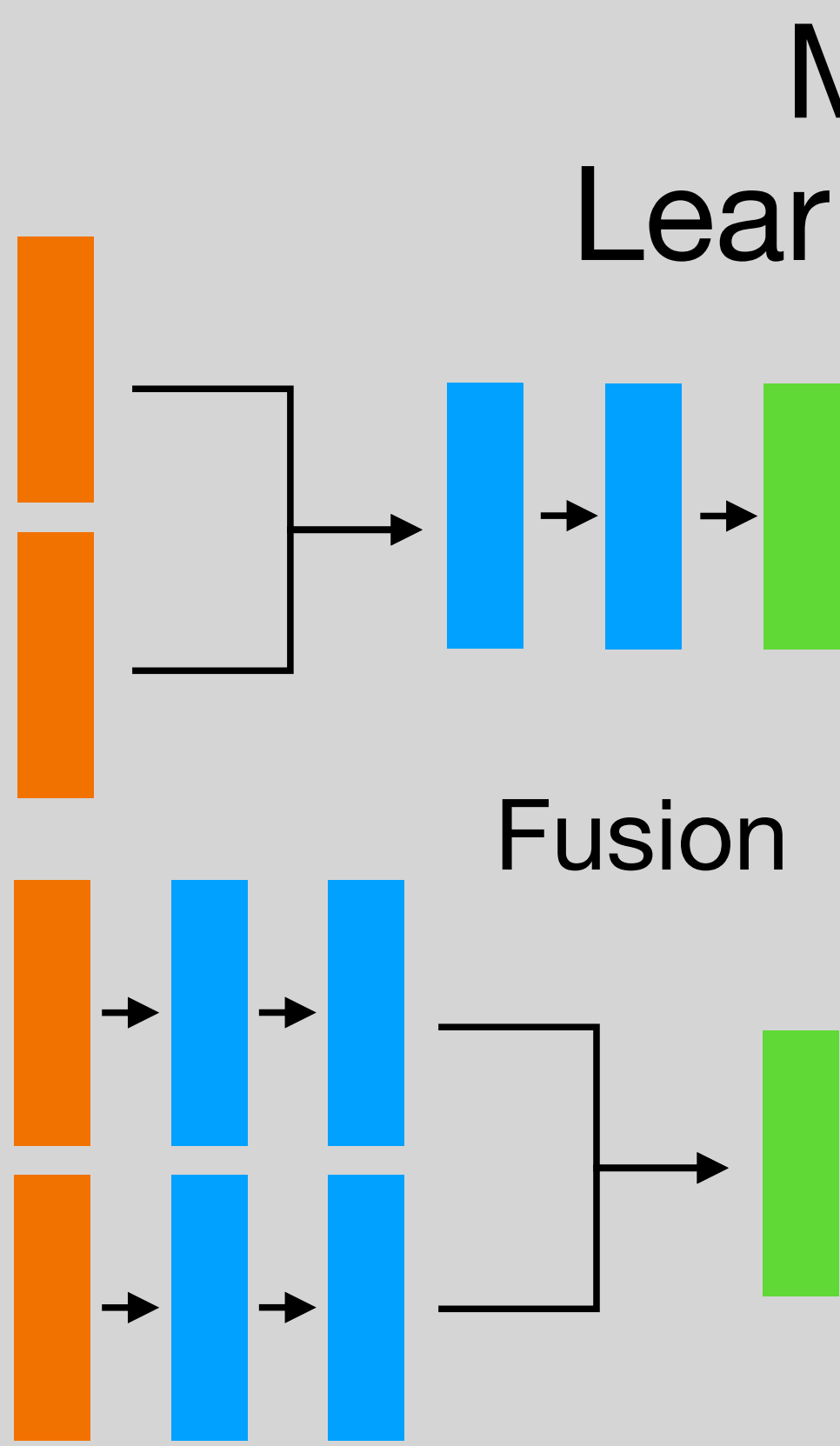
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Context and state-of-the-art



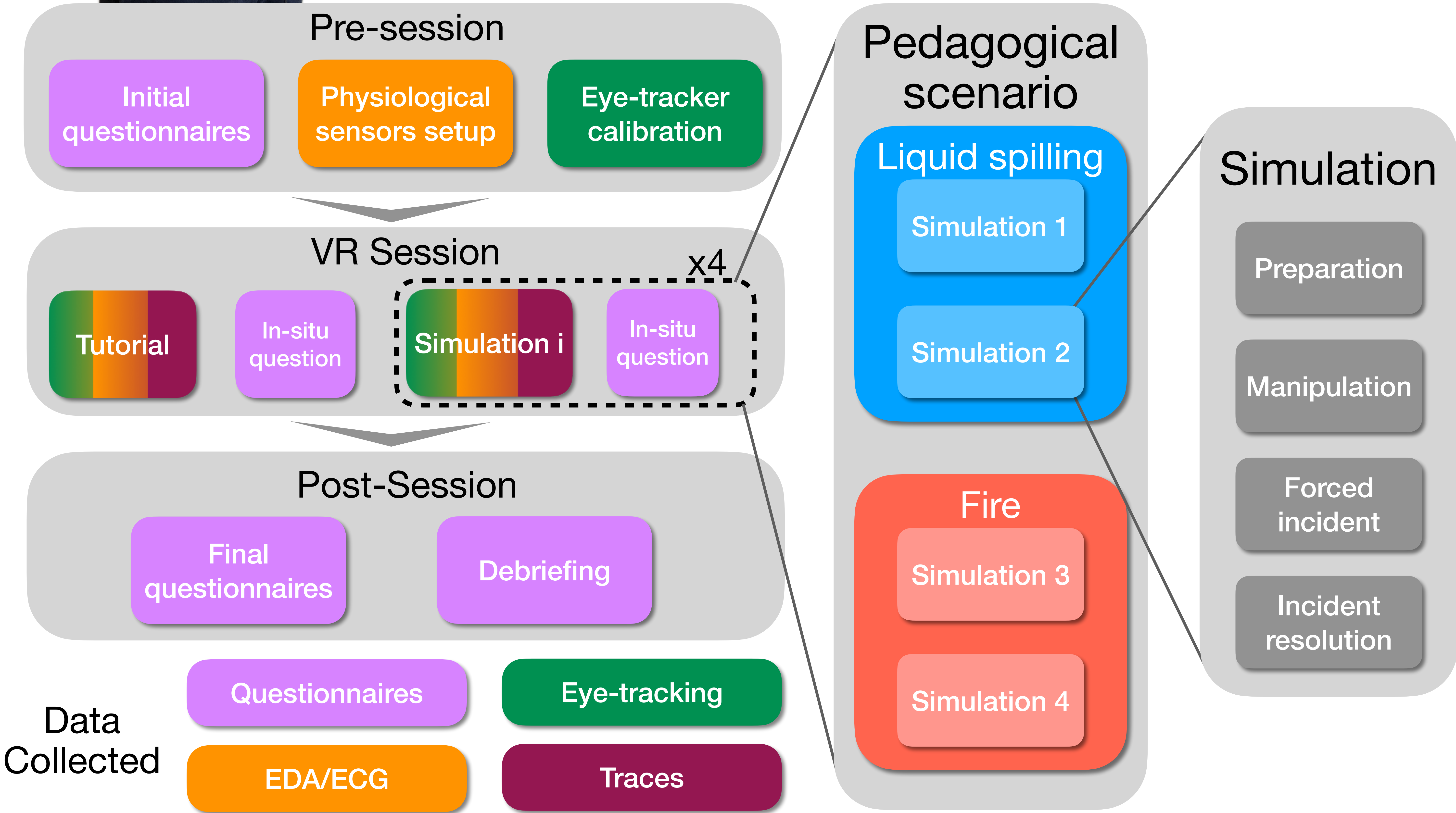
Procedural learning in VR



Multimodal Learning Analytics

	Provides information about	Limitations
ECG	Cognitive Load Stress Regulation	Sensitive to movement artifacts
EDA	Arousal Engagement	Sensitive to sensor placement
Eye-tracking	Attention Exploration strategies	Accuracy degrades over time

Contribution



Future analyses

- 1 Combining macro-level segmentation across training simulations with micro-level segmentation around critical incidents.
- 2 Identifying the most relevant features and multimodal combinations using mixed-effects models and dimensionality-reduction methods.
- 3 Comparing early and late fusion approaches to determine how the timing of data integration affects the analysis of procedural learning.
- 4 Learners will be grouped according to their multimodal profiles, while action sequences will be analysed separately to identify recurring behavioural patterns during training.

