Virtual Reality in vehicle painting:

Applying the Meaningful-immersive Virtual Reality (M-iVR-L) model

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Instructional design process

- documents analyses & interviews
- learning and teaching goals
- 4C/ID model (van Merriënboer & Kirschner, 2018)
Applying the recommendations developed in the Meaningful-immersive VR-Learning model (M-iVR-L; Mulders, Buchner & Kerres, 2020) to the VR training application.
Results

- **Learning first, immersion second:** highly detailed when needed (e.g., reflection) and less detailed when not needed (e.g., workbench)

- **Provide learning relevant interactions:** video tutorial to train unknown interactions

- **Segments complex tasks into smaller units:** structure of learning tasks, higher-level task classes, and additional practice scenarios

- **Guide immersive learning:** virtual master, highlight relevant information

- **Build on existing knowledge:** video tutorial, practice scenarios

- **Provide constructive learning activities:** problem-oriented: customer orders
Both the M-iVR-L model (Mulders et al., 2020) and the 4C/ID model (van Merriénboer & Kirschner, 2018) were central to the instructional design of the VR learning application for vehicle painting trainees. Empirical testings are needed to test the effectiveness of certain instructional elements (e.g., the tutorial, guidance through the master).