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From the Engine Room of a Learning Analytics Project

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Abstract

This presentation provides insights into an ongoing learning analytics project situated in the context of continuing education. Due to rapid social and technological changes in today's (working) world, continuing education is becoming increasingly important. Hence, individuals are constantly required to develop new skills and to engage in self-regulated learning (SRL) processes. However, a comprehensive analysis of the effects of different SRL strategies on learning in continuing education is pending. Therefore, the first part of this presentation focuses on a meta-analysis aiming to understand the effects of learners' engagement in SRL strategies on achievement motivation, learning performance, and course satisfaction in continuing education. As a result, one major challenge in designing continuing education programs for workplace learning is to provide offerings that are appropriate for learners from various backgrounds and with different abilities and preferences. Current research focusing on educational technologies and artificial intelligence suggests that this challenge may be overcome through the support of personalised and adaptive learning environments (PALE). PALE are defined as digital learning systems that continuously analyse and leverage education-related data to adapt the learning environment to individual needs and constantly changing requirements. Yet, one challenge in designing trusted PALE for workplace learning remains the identification of reliable indicators. Indicators are variables (e.g., interests, motivation, daytime) that reveal useful information about learning behaviour and that are processed by specific algorithms to personalize and adapt the learning environment. Thus, the second part of this presentation discusses a systematic review identifying theory-driven and pedagogically relevant indicators from previous research. In addition, another systematic review identified a categorisation of workplace learning goals relevant for PALE. The third part of this presentation shows various steps of implementation of features supporting personalised and adaptive learning processes in PALE.

Key references

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Short bio

Dirk Ifenthaler is Professor of Learning, Design & Technology and Department Chair of Economic and Business Education at the University of Mannheim, Germany, and UNESCO Deputy Chair on Data Science in Higher Education Learning and Teaching at Curtin University, Australia. Dirk's research focuses on the intersection of cognitive psychology, educational technology, data analytics, and organisational learning. He is the Editor-in-Chief of the Technology, Knowledge and Learning, Editor-in-Chief of Educational Technology & Society, and Senior Editor of the Journal of Applied Research in Higher Education.