FLOWer: Feedback Loop for Group Work Supporter

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ABSTRACT: This interactive demo presents FLOWer, a recently developed automated prototype to facilitate and support collaborative learning in group-work settings. The prototype enables the assessment, analytics and support of Computer Supported Collaborative Learning (CSCL) in the real-world scenario with sensor-data from multiple modalities. It analyzes the pre-designed indicators with multimodal learning analytics (MMLA) for providing real-time and metaphorical feedback on individual/group's contribution, to inform teaching and learning practices towards a better interaction loop in educational settings. The overall architecture of the FLOWer consists of three components: 1) multimodal data stream collection, 2) multimodal learning analytic and 3) metaphorical visualization. In component 1), the relevant features are extracted from the raw data of the cameras, audio recorders, and the text. Next, neural-network-based learning methods are utilized to assess the CC with different indicators. At last, the real-time metaphorical feedback (a landscape with components like the plants, wind, rain) from different indicators (i.e., speaking time, specific gestures) will be visualized via a dashboard. The FLOWer serves as an initial implementation of MMLA for CSCL, to facilitate feedback provision and to explore actionable feedback at the individual and group level.

Keywords: computer supported collaborative learning, multimodal learning analysis, neural networks, metaphorical design, real-time interaction

Demo video link: https://youtube.com/watch?v=pfblSWSznB0

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