
Tracking flow in real time: A novel approach for continuous subjective measurement

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Résumé

Flow experience is defined as becoming deeply absorbed in a task. It is characterized by losing track of time, reduced bodily and spatial awareness, and diminished self-consciousness, leading to an altered sense of self. Flow research typically involves collecting physiological data during a task and associating them with subsequently completed self-reports (i.e., post-task report). However, this approach is limited, as post-task reports provide cumulative assessment of the experience, lacking the temporal resolution required to be analysed with physiological data and failing to capture flow as it unfolds in real time. Here, we introduced a novel method that enabled the continuous and real-time collection of subjective and physiological measurements of flow. Participants continuously reported their perceived degree of flow by pressing a custom-made foot pedal during the task (i.e., real-time report). They (N = 40) played the video game Thumper in virtual reality under two conditions: one with the pedal and one without, while their heart rate was recorded. After each condition, participants completed the Flow Short Scale (FSS) as a post-task report. Thereby, we investigated whether pedal interfered with (a) participants' flow experience and (b) physiological responses (i.e. heart rate variability), and whether (c) it provided a real-time measure of flow that correlated with FSS scores. Results indicated that the pedal did not interfere with (a) participants' flow experience and (b) heart rate variability. Moreover, (c) real-time flow ratings during the second half of the task correlated with FSS scores, suggesting that the pedal provided a reliable self-assessment of flow.

Mots-Clés: flow experience, bodily awareness, spatial awareness, self consciousness, time perception, real time measurement, heart rate variability

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