

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Embodiment and immersion in cognition-focused virtual environments

Permalink

<https://escholarship.org/uc/item/8sp5z8vb>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

Authors

Pejemsky, Anya Pejemsky

Van Benthem, Kathleen

Herdman Dr., Chris

Publication Date

2020

Peer reviewed

Embodiment and immersion in cognition-focused virtual environments

Anya Pejemsky Pejemsky

Carleton University, Ottawa, Ontario, Canada

Kathleen Van Bentem

Carleton University, Ottawa, Ontario, Canada

Chris Herdman Dr.

Carleton University, Ottawa, Ontario, Canada

Abstract

Cognitive science has much to contribute in regard to the development of accurate and valid virtual environments where humans act as operators. For example, optimal performance for visual-motor tasks may require a strong sense of immersion with respect to flow and interactivity. The present research examined the relation of presence/absence of operator hands during simulated flight simulation to a series of key immersion factors (N=47). Furthermore, the impact of levels of immersion (using self-report scales) on operator performance were also investigated. Results show that hand presence affected both absorption and interactivity. Importantly, operator performance showed greater precision when absorption and interactivity were rated higher. These findings suggest that the development of virtual environments requiring human operators and complex cognitive functions must consider the impact of embodiment and levels of immersion.