Creating Positive Interactions and Experiences for 3D Interfaces

Katharina Zeiner[1], Michael Burmester[1], Kristin Haasler[1], Magdalena Laib[1] & Ralph Tille[1]

[1] Stuttgart Media University, Germany

Three-dimensional virtual and augmented reality is increasingly used for professional human-computer interactions. Some of these applications include CAD - programs and related engineering tools, endoscopes for medical procedures and procedural imaging, tools for therapy (e.g. self-compassion, or treatment of phobias), computer game engines, animation tools, remote control of service robots, scientific visualisations etc. While a working backend that computes the information and handles the visualizations is crucial, what most users interact with (and thus remember) in 3D oriented interfaces with is a combination of 2D and 3D graphical interfaces and their presentation. The interaction with this type of interfaces is complex, because users have to work with interaction paradigms of 2D as well as with 3D interactions. The project 3D-GUIde, funded by the Federal Ministry for Economic Affairs and Energy, develops and validates design solutions (interaction patterns) in order to make interaction with this type of professional 3D oriented systems more intuitive (usability) and enjoyable (positive user experience).

In our paper we address the perspective of positive and meaningful interaction using 3D interfaces. We present results from a study on work structures and categories of positive experiences in work contexts using 3D applications. This approach has already been used in non-3D work contexts [1] and non-work contexts (Burmester et al., upcoming). Typical categories of positive experiences are "receiving feedback on work progress", "rising to a challenge" or "creating something together". These experience categories allow us to understand existing positive experiences during a type of activity. The categories can be used to identify new/further potentials for positive experiences when working with professional 3D oriented interfaces.

[1] Zeiner, K. M., Laib, M., Schippert, K., & Burmester, M. (2016, May). Identifying Experience Categories to Design for Positive Experiences with Technology at Work. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (pp. 3013-3020). ACM.