

Context Effects on Cognition and Work Behavior: How a Virtual 3D Office Environment Enhances Cognition

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The evolution of ubiquitous computing made it possible to access information and work materials independently from time and space. Due to small mobile devices such as smartphones, or tablets, and continuous interconnection with the workplace, work can be done anywhere and anytime - work became ubiquitous. Nowadays, employees are able to work in multiple, varying environments - in parks, cafés, or in the living room at home. Much effort has been invested to clarify how to design an office ideally to enhance performance. It seems that the fundamental change of work context, from traditional, thoughtfully designed offices up to various locations that are originally not conceptualized for work (such as trains or hotel lobbies), has already overtaken these achievements. By now it is more relevant to understand how the environment influences performance. Flexible and location-independent work models such as ubiquitous working (UW) generally presume that professionals show the same performance and work behavior in any context. But is it even possible to work as effectively in a train as in the office? If performance and work behavior differs in diverse environments, is UW then useful at all? Or can these differences be utilized intentionally to foster certain types of cognitive performance and shape work behavior? Answers to these questions allow practical implications for a beneficial application of location-independent UW.

Various small components and physical features of environments such as light, temperature, or sounds may have an impact on cognition and performance. To control for these confounding variables, we use virtual 3D environments to examine the impact of a work-related context (characteristic office) vs. a non-work related context (cottage house with Tuscany scenery) on concentration, attention, and decision-making behavior. First results suggest that working in a typical work environment enhances cognitive performance and makes decisions more risky.