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THEMA FÜR EINE MASTERARBEIT

Thema	Make it easier! A test of different human-machine interfaces (HMI) in educational learning
Beschreibung	<p>Digitalization is transforming work through the introduction of new technologies such as artificial intelligence and robotics. New jobs are created, while others tend to disappear. Many of the new jobs in Switzerland are high-skilled jobs, most of them requiring digital skills. However, Switzerland, as the rest of Europe, is experiencing a shortage of skilled workers. The general job vacancy rate (1.6%) is at its highest level since 2008 and the rates in skilled sectors are even higher, with a peak of 3.4% for IT-related services. The PwC CEO survey showed that “79% of CEOs are worried about the availability of key skills” and 46% say “their priority to remedy the issue is reskilling workers they currently have”. While many continuing education programs are offered to acquire digital skills, they mainly target people with a university-level background, while the jobs that tend to disappear are rather medium skilled jobs, in Switzerland typically people with an apprenticeship degree. People with lower educational background tend to be more reluctant to traditional adult learning activities, making continuing education challenging. Studies have shown that a subjective anchorage is a key to engagement and success for these groups. New forms of training based on work experiences and worker needs are thus required to upskill people with a middle and lower educational background to ensure work mobility and prevent a shortage of skilled people. The project aims at developing or extending existing human-machine interfaces (HMI) with educational tools such as interactive tutorials and task-based learning. It shall foster the acquisition of digital skills through experimental learning rather than symbolic cognition.</p> <p>In order to do so, this project will explore ...</p> <ul style="list-style-type: none"> • the key factors to successful learning for adults with non-academic background in the work environment; • the design of HMIs that are intuitive and anchored in the task knowledge of the worker; • the use of these HMIs for the acquisition of new digital skills. <p>Master students will work in this project lead by the Applied University of Bern (BFH).</p>
Anforderungen	<ul style="list-style-type: none"> • Thesis can be written in English or German • Interest in the work and organizational psychology field • Interest in the HMI (human-machine interfaces) field • Interest in experimental applied research • Independent literature search (including retrieving and synthesizing literature in English) • Good knowledge of SPSS, R, Amos or Mplus to be used for data analysis • Good knowledge of Qualtrics • Data collection over 3 time points
Anzahl Master-Studierende	1
Betreuer/in	Dr. Diana Romano, diana.romano@bfh.ch Prof. Dr. Achim Elfering
Literatur	Sauer, J., Sonderegger, A., & Schmutz, S. (2020). Usability, user experience and accessibility: Towards an integrative model. <i>Ergonomics</i> , 63(10), 1207-1220. https://doi.org/10.1080/00140139.2020.1774080