Virtual Reality for Mental Training in Organizations

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Abstract

The developed concept applies Virtual Reality (VR) and biofeedback for mental training in organizations. The concept is implemented to an application and used to explore how wearable technology can increase self-awareness related to employees' performance improvement.

Using wearable VR technology, 16 employees and leaders in a finance organization practiced presenting themselves and tested their ability to focus and listen to others at a virtual meeting in a workplace environment. The participants' pulse was measured and voice recorded, so that they could reflect upon their performance.

The project included four sessions with focused training in VR over the course of seven weeks. The participants had access to online mental training, individual coaching and leadership support in between the sessions.

As a measurement tool, the new general self-efficacy (NGSE) scale was used, as it focuses on an individual's general perception that one has the skills needed to perform in different situations. Participants also filled out questionnaires and gave oral feedback.

Technological infrastructure

The VR-concept is implemented as a hardware-software system. The hardware includes Samsung S6/7/8 smartphone inserted into Gear VR glasses, and connected via Bluetooth to MIO link/global alpha-2 bracelet heart-rate sensor. The software includes an Android application that plays 360-videos separately pre-filmed and pre-uploaded to the smartphone, connects to the heart-rate sensor, logs data and visualizes them, records and replays user's voice, and provides user interface.

Results

The majority of the participants describes that the VR-experience is valuable in their everyday work, for example by enhanced listening skills at customer meetings. Many reported that they have increased their self-awareness and ability to perform. The main finding in relation to self-efficacy is that the VR-concept may help to increase it. A total of six participants, rose by 19 points on the NGSE scale. Three participants were registered with a reduction of 8 points, and seven participants did not complete the registration on the NGSE scale. The four who recorded the lowest score at the first measurement, increased the most at the last measurement. This may indicate that the VR process has helped to lift this group in an efficient way. The participants who were registered with a reduction, were the ones with the highest score on the NGSE at the first measurement.

Most reported it to be useful and evolving to have access to a record of change in heart rate during the VR training. The findings indicate that the pulse measurements have been used to identify critical moments in combination with reflection on what was thought of at the given time, and in what emotional state.

The group sessions were characterized by curiosity and reflections, with topics like stress management and emotional intelligence. Having different goals in every VR training also yielded learning benefits for the participants, as they became more engaged and saw the value of the fact that there are many mental skills that can be exercised in the same scenario.