Communication skills training for people with ASD/ID through Virtual Reality

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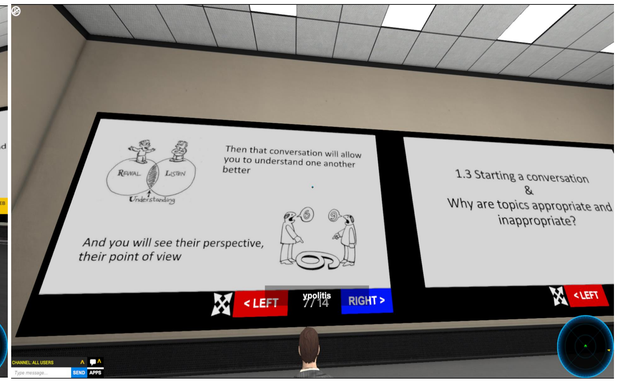
Virtual Reality (VR) – Virtual Worlds (VWs)

Introduction -Definitions

Virtual Reality has made a big comeback due to technological advances that have made it more affordable. Virtual Worlds are simulated environments of the real world, "places where the imaginary meets the real" (Bartle, 2004; p.2)

A Virtual World is "a synchronous, persistent network of people, represented as avatars, facilitated by networked computers" (Bell, 2008; p. 2).

A VW can either be non-immersive (on a computer/laptop/tablet) or immersive (VR glasses, Head Mounted Displays). VWs are safe environments where one can embed training and learning exercises in order to achieve goals and have thus have found application in an educational context.



Literature

Studies have shown that a Virtual World can:

- stimulate users' interactivity (Roussou, 2004) and motivation (Garris et al., 2002; Ott &Tavella, 2009);
- make conversations easy, structured and inclusive (Newbutt, 2013);
- offer users a sense of co-presence and realism (Childs, 2010; Yee et al. 2009);
- provide an increased sense of control (de Freitas et al., 2010);
- improve students' knowledge, enjoyment and interest in the learning process (Papastergiou, 2009).

References
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Virtual Learning for people with ASD (VL4ASD) Project

Purpose of Research:

The project will adopt the Responsible Research and Innovation (RRI) approach in order to create training material on communication skills through Virtual Reality for young adults with Autism Spectrum Disorders (ASD) and/or Intellectual Disabilities (IDs).
It is developed with and for people with autism and intellectual disabilities.

The Virtual World:

A first iteration of the Hive-RD construct powered 3DNovations platform, at an early alpha stage.

First instance of Hive-RD being used as a tool for RRI to help people with autism and IDs

OpenSim was deemed appropriate for the creation of training material (free and more user-friendly).

The intervention will be delivered in a Unity platform (more customizable).

Intervention:

The nature of the study lends itself to a single case study design.

STAGE 1	STAGE 2	STAGE 3	STAGE 4
Having a conversation in a ….		Training – then a conversation in the ….	Having a conversation in a ….
Physical Space	Virtual Space	Virtual Space	Physical Space

Stage 1 to stage 2 comparison: to determine whether VR on itself has a positive impact.

Stage 3 will involve instruction (PowerPoint presentations, videos, and exercises with non-playing character) to determine whether instruction in VR is beneficial.

Stage 4 will be a repeat of stage 1 to determine whether the participants could bring any skill acquisition from the virtual to the real world.

ASSESSMENT METHODS
Observations will be rated either on a Likert scale or YES/NO (3 reviewers)
Perceived Empathic Self-Efficacy Scale (5 items), the Perceived Social Self-Efficacy Scale (6 items) and the Generalized Anxiety Disorder Scale (7 items)
Video will be used to identify desirable verbal & non-verbal communication

Potential Implications

The training may improve communication skills of people with ASD/ID

VR training, if successful, would allow for a wider implementation (anywhere, anytime)

May require higher up-front development expense but will cost less longer term