The Immersion Assemblage in VR for HE applications
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A critical aspect of the educational appeal of VR stems from the idea that VR is a medium that immerses the user to an extent that they feel they are somewhere else.

Approaches to immersion

Immersion is a highly contested concept, which has a number of definitions and conceptual understandings from a number of fields (Bell et al, 2018: 2).

One approach to understanding immersion in VR is to conceptualise immersion as contingent on the internal psychological state of the VR user as well as the characteristics of the VR technology (both hardware and software). A VR experience can be understood as immersive for one person, but not another, based on the presence of the person which is individual and subjective. The model for this understanding of immersion is an assemblage.

Immersion, conceptually:

This builds on the work of Bortolussi and Dixon (2003: 37) who emphasise that immersion is a hybrid, dynamic and interactive phenomenon that involves convergence and divergence to the state of immersion.

Brown and Cairns (2014) describe the process of immersion as a movement from engagement (committing some time and energy to the object) to engrossment (an emotional commitment to the object and less attention to other things in the environment) to total immersion or presence (complete cognitive and emotional commitment to the object). Thon (2008: 33) positions this as a kind of attentional focus. These cognitive factors are often underplayed in thinking about the deployment of VR in many contexts, including education.

The assemblage model facilitates these concepts of immersion in VR by emphasising both the media-specific and human aspects of immersion, critical for any educational use of VR.

The Immersion Assemblage

Visuals

The tendency of the brain to be tricked into believing in the ‘realness’ of images underpins much of the design of VR experiences. For a sense of realism that can assist immersion, a visual consistency is critical in creating a coherent VR experience that has a sense of experiential fidelity.

Sound

The critical aspect of sound in immersion is a factor of kinosonic congruence against kinosonic incongruence. When sound is in-sync with the other parts of the media, and organically originates from the media itself, then it is more likely to contribute to immersion. Sound therefore needs to be made in conjunction with other immersive elements.

Haptics

Touch is important, but immersion can be treated without touch & current interfaces for touch are less than perfect in VR systems. Touch is critical for deep fidelity, but can break as well as deepen immersion.

Narrative

Immersion needs a story that is internally consistent and logical, which the user can follow and is interested in. Consistency or fidelity continues to be critical, and an inconsistent narrative could be an immersion breaking factor like visual glitches or kinosonic incongruence.

Mood

Psychological or phenomenological readiness for VR; an expectation that aids in immersion in the VR experience. When using VR, we come to it with an expectation of what it will be like, even as a naive user; the equipment, the idea of the visual field, the notion of the computational environment. In manipulating or shaping mood, this expectation can be ‘hacked’ by the VR maker; some VR makers look to prime users to be ready for their experience.

The assemblage at work

Immersion as an assemblage reframes the concept of immersion as a tightly crafted emergent property of the visuals, sounds, narratives and haptics of the VR experience and the mood or orientation of the user towards the VR experience itself – which is highly contingent upon the frame of reference in which VR is used with regards to educational context.

An assemblage has redundancy, in that parts of the assemblage can disappear or leave the assemblage and the emergent effect may still occur. So, VR experiences do not need to do everything – they need to use and optimise the right elements at the right times. This model of an assemblage therefore allows for immersion to have potentially different elements of the immersion assemblage at play for different experiences, and immersion should be achievable in most instances as long as the use and context is clear.

Lessons for HE

This means there is no ‘magic formula’ for immersion in VR, there are tools in the developer’s kit that can be combined to create an immersive experience which may be tailored to the kind of content being used in that experience.

For HE practitioners, this means that designing VR for teaching and learning must: begin with a clear idea of what is trying to be achieved; an assessment of the key elements needed to achieve those aims; preparation work with students before use to maximise immersive potential; and acknowledgement that immersion is a management process of a number of elements – not an inevitable property of the use of VR.

References:


