Immersive Learning: Realism, Authenticity & Audience

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Abstract. For almost 20 years the Digital Design Studio has been exploring and applying virtual reality for a wide range of industrial, commercial and educational applications. Drawing from a range of recent projects, we explore the complex relationships between realism, authenticity and audience for effective engagement and education in immersive learning.

Keywords: Immersion, Realism, Authenticity, Engagement, Audience

1 Overview

Advances in 3D and immersive technologies have, to a large extent, prioritised the production of photo-realistic 3D spaces. Added to this, the past decade has seen audio increasingly recognised for its key contribution to immersion in both games and 3D immersive learning. Through a range of projects, the Digital Design Studio staff have been producing immersive and detailed photo-realistic 3D environments for almost 20 years, now supplemented with work in 3D sound. However, we also recognise that there are problems and limits inherent in the use of photo-real and acoustically real environments for education and learning.

A photo-realistic appearance may have more visual detail than other modes of representation and definitely implies greater accuracy, but the greater detail might not be useful, and the implication of accuracy may not be wholly warranted and can even be misleading. Representative sketches harness the power of abstraction – simplifying or removing detail to allow greater focus on relevant content and reducing cognitive load. Similarly, in engaging with a photo-realistic model of, say, a Roman villa, the level of visual detail provided might lead users to assume that similar levels of detail apply to the behaviours of virtual actors in that environment and that their actions and interac-

tions are similarly grounded in a deeply researched understanding of the social lives of Roman civilisation.

In tandem with the issues arising from an unwarranted impression of realism there are other, intangible, aspects of real places and artefacts that are more difficult to capture and recreate digitally. From open to close, daily, at the British Museum, there is a near constant press of bodies vying for a glimpse, through glass, of the Rosetta Stone. A replica, produced from a cast of the stone, sits in relative obscurity nearby – as a copy it lacks both 'aura' and a sense of authenticity, and is treated as little more than a curiosity. What extra value does the original hold that justifies the jostling crowds hoping for a few seconds of unimpeded viewing through glass? What hope do we have of being able to capture this quality digitally?

Immersive learning is thus pulled in different directions, and faces some genuine struggles in meeting conflicting aspirations. Striving for photorealism results in costly development processes, and while we can look to technologies such as photogrammetry and co-production processes to reduce costs, it can result in immersive learning environments that are themselves problematic in interpretation. Whether or not we are able to reproduce some semblance of authenticity (c.f. [1]) – as opposed to realism – in our immersive environments, there remain key questions on the extent to which our use of 3D games, virtual worlds and Virtual Reality is helping learners to understand and evaluate the complexities of the world around them.

2   References

1. Jeffrey, S.: Challenging Heritage Visualisation: Beauty, Aura and Democratisation. Open Archaeology. 1, (2015).