Position Paper

Immersive Learning

Amongst the terms that get bandied about is 'immersive learning'. There are strong reasons to be enthused, from the perspective of learning. There are also reasons to be wary, as the conceptualizations vary. As with many terms, we need to be clear on what we're talking about.

Here, we explore the interpretation of immersive learning. We want to consider the definition, the rationale, and any problems. Ultimately, we want to end in a consolidated view.

What is it?

Immersive learning is, quite simply, learning where the experience is one of being immersed. That is, our attention is focused such that we're relatively isolated from other inputs. This is beneficial. At core is rendering a world where we're *learning through doing.*

There are several types of immersion. For one, there's **physical immersion.** In this situation, we are placed in a complete setting, so our entire being is placed in a particular environment. This might be an escape room, or a full simulator such as the ones used in aviation or the military. The inputs that you see and feel, and your movements, are all consistent with the rendered world.

A lesser, but still physically captured version is **sensory immersion,** where our senses are captive in specific ways. So, for instance, a virtual reality helmet with gloves or other manipulators can provide the illusion of full physical immersion. The vision presented to the eyes and ears, possible vibrations in the manipulators, and the ability to act on and change the world, is a fair approximation. We might need some design specifics to help encourage suspending disbelief.

We can also just have **cognitive immersion.** This can be with a screen representation of the environment, and the standard (e.g. keyboard/mouse) or custom manipulators. For the latter, I'm thinking of the physically manipulable suspended arms that can provide resistant feedback, simulating a scalpel for instance. In this case, we depend on the challenge inherent in the task, the story, and the setting to maintain the focused attention.

Why is it important?

Being immersed is beneficial for learning. To the extent that our attention is focused on an activity, there are several important elements. For one, our attention isn't being distracted. Thus, we're not switching away from what is critical to the learning experience. We're also managing the cognitive load so we can maintain attention with the appropriate effort and not breaking the illusion by having tasks too easy or too challenging. It must be pointed out that even in physically immersive settings, we can break the necessary focus if our design isn't appropriate.

Learning is facilitated by focusing on important tasks, when they're supported by reflection. Deeper learning is based upon action and reflection, and scenarios, simulations, and games are arguably the most effective approach. Thus, if we can maintain a true immersion, we're facilitating the most effective learning.

Why is it problematic?

The problem arises in assigning the necessary attentional focus to the technology, not the experience. It is all too easy, particularly in the face of a particular vested interest, such as product marketing, to believe that if you're sensorily immersed, you're cognitively immersed. All we need is simulations, VR, video, games, what have you, and our learning problems are solved! Which isn't the case. You can do good, or bad, learning with all technologies (anyone remember attending a slide presentation in Second Life?). **It's about the learning experience design, not the technology.** Thus, one problem is believing that any solution is a panacea.

Perhaps more importantly, you can easily overspend on a technology unnecessarily. Unless you need specific movements in context, physical simulations are unnecessary. Similarly, unless you need 3D awareness, you can likely achieve the necessary outcomes with just cognitive immersion. Thus, you may invest in VR, or use video, and feel obliged to use them for most or all solutions when it's overkill in many cases.

Our approach

We believe in two things: the importance of applying an understanding of deeper learning in design, and then using the right tool for the job. Deeper learning, based on empirical results from learning science research, is the basis for creating experiences that match the activity with the needed outcome. This means proper upfront analysis, and then iterative prototyping and refinement – which will frequently be traditional eLearning, not necessarily using all the latest technology advantages.

We also believe in applying technology *when it makes sense.* We're perfectly comfortable developing simulations, using VR, and even creating adaptive learning... we just want to do it when the investment is justified by the outcomes. We want to avoid gratuitous use of technology. That's contrary to our customers' benefits *and* our ethos.

Designing learning that's based upon a deep understanding of learning *and* technology is the right balance to achieve outcomes on a cost-effective basis. That's our goal, to be the provider who helps you achieve real, meaningful, outcomes with a realistic approach.