

Learning through Participation

Immersive Learning

Benjamin Kenwright
De-Montfort University*

Abstract

The field of education is limitless with so much still to discover. One particular area of education is immersive learning. Placing the learner at the heart of the topic - not as a passive bystander but as an active participant - is the impetus behind the hugely varied work of immersive learning. Done well, it can generate powerful, long term effects that will stay with the learner forever. Making an immersive course requires a range of things to consider, such as: deciding what kind of course you want to teach, understanding your learners and their experiences, balancing interaction and engagement, giving the learners an active role (thin line between free will and uncontrolled chaos), managing complex sessions and handling/preparing for the unexpected, extending the learners understanding and experience outside of the classroom, generating innovative ideas and tactics for the material. In this article, we discuss and review the creation of immersive learning in a variety of styles and settings. Immersive learning is a fascinating concept that offers insights into inspirational ideals to fuel the performance of communication of knowledge.

Keywords: education, pedagogy, game-based, learning

1 Introduction

We live in a time where communicating with our students is more challenging than ever [Fobes and Kaufman 2008; Shuk-kwan 2013]. Social media, television, mobile communication, websites and online search tools are all easily available to students. All these things mean that we cannot just preach facts to students (statement after statement in the context of a lecture). Learners expect to be engagement through an immersive theatrical experience that intrigues and tantalizes them. This requires careful planning and execution [Dede 2009].



Figure 1: Immersive Lecture Room - Audience/listeners are surrounded with images and sounds to keep them engaged.

* benjamin.kenwright@dmu.ac.uk

2 What is Immersive Learning?

On the whole, in this era of distraction, it might be easy to capture the learners attention but it is really hard to keep learners engaged for long periods of time (e.g., a one or two hour lecture). Hence, anything which is real is likely to connect with the target audience more purposefully than anything else. This article attempts to address the following questions:

- What does it take to ensure that your learners are fully immersed when learning?
- Is there a way to determine if the learners are fully immersed?
- What are the chief benefits of attaining immersive learning?
- What does it take to create such an effective environment for learners?
- What are costs of integrating and establishing immersive learning techniques?

3 Games and Technology to Group Activities and Disruptive Learning

Peer review has long been a method for increasing student engagement and work quality [Kenwright 2016]. Integrated into the learning assessment offers an engaging and immersive opportunity for students to take an active role in their own and their peers understanding of material. Bailenson et al. used virtual reality to illustrate the utility of using virtual environments to transform social interaction via behavior and context (Figure 3), with the goal of improving learning in digital environments [Bailenson et al. 2008]. Dunleavy et al. used augmented reality technology to develop immersive participatory simulations in the classroom practices [Dunleavy et al. 2009]. An increasingly prevalent type of media, immersive interfaces can aid in designing educational experiences that build on students' digital fluency to promote engagement, learning, and transfer from classroom to real-world settings. Dede explored immersive interfaces for engagement and learning to enhance the students learning strengths and preferences. [Dede 2009]. The fact that games have the ability to engage and captivate learning is well documented in the literature [Kenwright 2017]. For example, Kenwright [Kenwright 2017] provided a brief review of video games in learning and education emphasizing some of the important patterns and trends in immersive technologies and growing popularity with regard to the how we learn. Teaching methods which emphasize more collaboration, computer use, and social learning was explored by Cornell [Cornell 2002]. Arguing that learners need to be treated as individuals, with their needs, strengths, and weaknesses taken into account - for example, immersive lecture rooms as shown in Figure 1.

One popular approach for improving long term engagement through immersive techniques was through physical games (e.g., board games) [Dede 2009]. This has been evidence in the literature, showing high levels of learner engagement, as well as educational outcomes in literacy and math equivalent to students playing a similar, engaging board game as a control condition (Figure 2).

There are a lot of examples of immersive learning and one of them is the Thrive, which depicts the end-of-times scenario and place the participants in a spaceship which is heading towards the planet Mars. Moreover, every move from the selection of who stays and

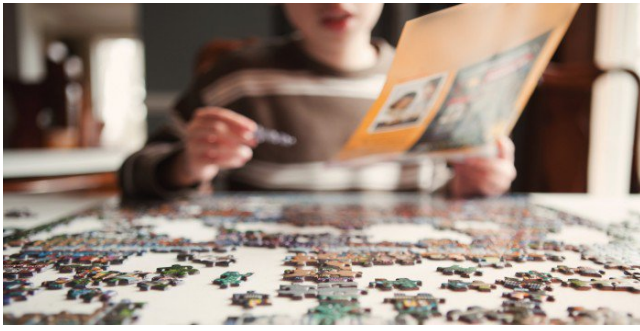


Figure 2: Game-Based Learning - In today's digital age - we often forget that game-based learning can be of any form - to tantalise and intrigue learners to explore and problem solve - embed stretch goals and keep the learner immersed and satisfied for long periods of time [Dede 2009].

who come along and what action has to be performed on the spaceship, plays an important role in the outcome of the game. The void which depicts a large studio in Utah which creates scenarios and experiences based on augmented and virtual reality. In this, the participants get a chance to go inside and physically protect Earth from an Alien invasion or slay the dragons that are causing havoc and disturbing the planets peace.



Figure 3: Virtual Reality - Provides the illusion of freedom the opportunity to explore and interact with worlds beyond our imagination (flying around inside the heart [Satava and Jones 1998] or visiting planet Mars [McGreevy 1993]).

4 Conclusion

Immersive learning is a complicated topic embracing novel technologies and non-traditional classroom environments, for example: virtual reality, augmented reality, game-based learning, group/social models, peer review and technology and media (immersive interfaces). Immersive learning is a dynamic strategy to improve engagement and understanding and its direction is likely to lead the future of learning. However, some may find the incorporation of immersive techniques in learning time consuming and expensive. Hence, for now, there is no single perfect solution and will not work for everyone - immersive learning techniques are bespoke and fit specific learning purposes (e.g., ages and subject). Nevertheless, immersive learning is indeed, a great strategy to achieve the important learning goals required today. The chief goal involving immersive learning includes building a solution that will get people involved - to make them care. A tool that takes the learner

to the practical situations without having any constraints of reality: risks, logistics or little and real-time right to failure.

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