

# Chapter 26

## VLE Meets VW

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### ABSTRACT

*The use of artificial intelligence (AI) within a learning environment has been shown to enhance the learning environment, improve its effectiveness, and enrich the entire educational experience. The next generation of intelligent learning environments incorporates the immersion of learners within virtual worlds while still offering the educational affordances and benefits of the online environment as a teaching medium. In this chapter, the current implementation of the virtual learning world (VLW) is presented bringing together a number of previous initiatives that integrated AI within a virtual learning environment (VLE) as well as the employment of a virtual world (VW) as learning environments. The realisation of the first VLW prototype provided numerous insights that provide valuable recommendations and significant conclusions to assist in taking the virtual learning environment to the next level.*

### INTRODUCTION

Universities and other higher educational institutions have been employing the evolving ICT technology in a number of ways before the turn of the century. The Virtual Learning Environment (VLE) is one of numerous endeavors to provide educational content to learners while providing a medium for educators to correspond in some way with their same learners. Basic VLEs allow assessment functionalities as well as course management interfaces that are directly sourced from the institution's information system. Even though these features seem to satisfy the educational needs that the institution seeks to provide (Beastall & Walker, 2007; Oliver, 2005), a number of educational researchers questioned such a medium and expected a deeper and much more effective learning environment that truly enriched the process that learners deserve (Stiles, 2007; Craig, 2007; Alhogail & Mirza, 2011). The issues documented are not only those related to inadequate implementation (Dublin, 2004), unemployed features (Sharpe, Benfield, & Francis, 2006), cultural issues (Alhogail & Mirza, 2011), and acceptance or adoption

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concerns by learners (Govindasamy, 2002), but additional ones that are far more deeper rooted in the academic significance of employing such learning environments. The question here is whether or not we are taking full advantage of the digital medium and the affordances it provides to create an intuitive and andragogical-sensitive environment in-line with the ever-evolving digital backdrop that learners instinctively associate themselves with. Such a learning environment not only provides the necessary academic functionality expected from the traditional VLE, but additionally supports and affords features that add value to the educational experience.

In this chapter we will be presenting an intelligent learning environment that is not only virtual and digital, but also social-network-like within a virtual world educational space. Our extensive experience in social-network like learning environments (Montebello, et al., 2018), together with the use and purposing of 3-dimensional virtual worlds within an educational context (Camilleri, de Freitas, Dunwell, & Montebello, 2017), as well as both in combination (Camilleri, Dingli, Mifsud, Montebello, & Seychell, 2012), has led us to harness and apply both technologies in tandem in an effort to add value and optimize the learning environment beyond any VLE expectation. The rest of the chapter is organized as follows. The next section gives a short background on VLEs, followed by a similar background on Virtual Worlds (VWs). Our highly-published social-network like learning environment, called Scholar, is thoroughly covered in the fourth section highlighting the seven e-learning affordances that are excelled within this rich VLE. Finally, we present the merging of both worlds by describing into detail how the VLE meets the VW in our attempt to investigate and develop the next generation of VLEs thereby adding value and assisting in enhancing e-learning effectiveness. We close the chapter with numerous recommendations and conclusions we draw from our experiences in developing this innovative and ground-breaking VLE.

## **THE VIRTUAL LEARNING ENVIRONMENT (VLE)**

The history of Virtual Learning Environments (VLEs) can be traced back to the inception of the World-Wide Web (WWW) itself as educators took advantage of this available medium right away to share resources with their learners. The main role of the VLE in this context was merely that of a repository whereby educators communicated with their learners asynchronously by uploading files and links to resources to be accessed and employed to supplement the educational process that traditionally was held Face-to-Face (F2F) in a physical classroom. Unfortunately, numerous educators and higher education researchers refer to such use of a VLE as an online learning methodology (Mäkelä, Kiltti, Vilpola, & Tervonen, 2012) creating the impression that the VLE embodied the entire educational process when in reality the VLE served solely as a medium to support teaching through the easy distribution of content. The functionality integrated within VLEs eventually evolved and included additional useful services that further assisted educators, amongst which are to supplement the interaction with their class in an asynchronous way (Craig, 2007), to integrate student information systems (Goslin, Hofmann, & Gray, 2009), as well as linking student data through the administrative information systems (Beckton, 2009). Some available VLEs include Moodle (Goslin, Hofmann, & Gray, 2009) that is notoriously employed by numerous educational institutions due to the fact that it is open source and supported by a massive community that makes it ideal when issues need to be resolved. This easy to integrate learning environment is highly intuitive due to its simplicity but complicated to administer and limited in functionality (Putnik, et al., 2013). Other open source VLEs include Sakai (Carmichael, Procter, Laterza, & Rimpiläinen, 2006), Ilias (Bednar, Husár, Hricova, Liptáková, & Marton, 2013) and ATutor (Singh & Singh, 2010).

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