Chapter 12
The Added Value of the Hybrid Virtual Learning Approach: Using Virtual Environments in the Real Classroom

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ABSTRACT
This chapter maps the types of interactions that relate to the use of virtual worlds in hybrid virtual learning scenarios. Students were asked to state their opinions regarding their experiences and were also observed along the way. The results highlight that the learning activities and students’ attitudes and experiences greatly affect learner engagement. It is vital, though, that instructional designers plan the learning activities thoughtfully and provide learners with enough time and support. Offering content with examples of the expectations of the teaching team can be invaluably helpful. Furthermore, a game-like content can be considered a great source of motivation. Moreover, the vividness of the virtual world makes the learning process more stimulating and less tedious. Additionally, avatars enable users to interact with the content and increase the opportunities for interactions with others. Nevertheless, learners’ simultaneous co-presence in the physical classroom is a more immediate and preferred option, since it offers increased opportunities for collaboration.

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INTRODUCTION

The term virtual environment was coined around the 1950s, when a machine named ‘Sensorama,’ able to provide the illusion of reality using stereoscopic 3-Dimensional (3D) images, was introduced to the public (Ellis, 1994). Ever since, the continuous evolution of Computer Science has greatly impacted on this field. The potential of these 3D artificial environments was very promising, as they seemed to offer a relatively cheap way to simulate various tasks. In these environments, users interacted simultaneously and in real time both with the content and with others, without the need to be physically co-located. All the above attracted the educators’ interest, and a new term ‘Virtual Learning’ was coined (Bredl et al., 2012; Childs, 2010; de Freitas et al., 2010).

Educational institutions initially introduced the use of virtual environments in their Distance Learning courses as an innovative, interactive, and engaging way of delivering their course material. The academic staff in the University of Bedfordshire (host of the project) followed accordingly, using the virtual environment platform ‘Second Life,’ as a supplementary tool to their traditional teaching methods (Conrad, 2011; Conrad et al., 2010; Conrad et al., 2009). The first experience and feedback received from students were highly encouraging, aiding towards the grounding of such virtual environments, as well as the ongoing active research in the field.

Numerous and various terms have been coined for Hybrid Virtual Learning (HVL). In this study, HVL is defined as the simultaneous co-presence of both the teaching team and the students, both in the physical classroom and in the virtual world. A large portion of the existing literature concludes that developing high levels of immersion is the key to success if better learning results are to be achieved. However, it is really intriguing that, in this study, high levels of immersion were not present, due to the students’ continuous interaction when altering between the two environments (physical and virtual). Based on this anecdotal observation, we sought for information on the impact that immersion has on Hybrid Virtual Learning models. Interestingly enough, the review of the literature suggested that most researchers focus primarily on the intrinsic elements that affect learner engagement, while they partially, if not completely, disregard the existence of the physical environment. Consequently, after identifying this research gap, a hypothesis was formed that a synergy between learner engagement and interactions might exist. As we actually had access both to the person who interacts (real identity) and to their avatar (virtual identity), it was decided to systematically evaluate the impact of interactions in both environments, as a combination and not as individual components.

This chapter will offer an overview of the history of and developments in the use of virtual environments by different providers over the past years, along with a discussion on the experiments and findings. In the conclusions section, an evaluation will be provided regarding the different kinds of interactions and their impact on learner engagement.

INTERACTION AND ENGAGEMENT

Activities that include 3D content creation and exploration as well as student collaboration have been extensively studied (Carter, 2012; Hockey et al., 2010). Schrader (2008) has identified four different combinations that link technology and learning, which are, namely, ‘learning about technology’, ‘learning from technology’, ‘learning with technology’, and ‘learning in technology’. Users are represented by avatars (artificial figures), interacting that way with both the content and others. Some examples of
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