Scientific Knowledge Transfer Training Through a Virtual World

Ana Martin-Suarez, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain
Juan Cruz Benito, Research Group in Interaction and eLearning (GRIAL), University of Salamanca, Salamanca, Spain
Jonás Samuel Pérez-Blanco, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain
Mª del Carmen Gutierrez Millan, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain
Aranzazu Zarzuelo Castañeda, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain
Hinojal Zazo Gomez, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain
Cristina Maderuelo Martin, Department of Pharmacy and Pharmaceutical Technology, University of Salamanca, Salamanca, Spain

ABSTRACT

The aim of this study was to use the virtual world Second Life (SL) to perform a knowledge transfer training to Pharmacy students. The presentation of assignments of different subjects was organized as scientific congress communications. The activities were carried out at the facilities created at the USALPHARMA Island in SL. The content and format of these works, together with their oral presentation and interventions in debates were evaluated. These experiences provided adequate learning results and a high level of student satisfaction. This teaching strategy can foster development of creativity, critical thinking, communication, co-teamwork and digital competence. Likewise, it can facilitate teacher-student relations and relations among the students themselves. It also implies significant savings in time and money, since real facilities and equipment and physical movement of people are not involved. All of this encourages us to recommend this platform to host all kinds of conferences or scientific conferences.

Keywords: Knowledge Transfer Training, Pharmaceutical Education, Scientific Presentations, Second Life, Virtual World

Second Life™ (SL) (Linden Research Inc.) is a social network in which participants, called residents, can interact with each other and with existing objects in the virtual world. They can also collaboratively create and edit objects (Boulos, Ramloll, Jones, & Toth-Cohen, 2008). The current generation of 3D virtual worlds began to develop about ten years ago. SL was the first to achieve popularity and a high degree of development. Since 2008, many other virtual worlds have emerged, with which SL has

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been sharing its leadership. But currently, SL is still the most widely used virtual world for healthcare and higher education activities (Atkinson, 2008; Beard, Morra, Wilson, & Keclan, 2009; Boulos, Hetherington, & Wheeler, 2007; Jarmon, Traphagan, Mayrath, & Trivedi, 2009; Melús-Palazón et al., 2012; Patel, Aggarwal, Cohen, Taylor, & Darzi, 2013; Salmon, 2009).

Users have to log in SL (http://secondlife.com) and subsequently create their own virtual selves, called avatars. There are over 70,000 regions which residents navigate by making their avatars walk, run, fly, or teleport directly from place to place (Second Life Grid Survey, 2014). The users have generated the whole content in SL. SL has a very flexible tool for creating and editing objects. These objects can be used, in combination with a scripting language, to add functionality (Beard et al., 2009; Freire, 2009). The communication features in SL simulate real world communications. For example, sounds become louder as the avatar moves closer to the source. Avatars can chat with each other publicly or privately either through voice or text tools. Despite creating an avatar and interacting in SL is free of charge, users can conduct business with the currency in this virtual world (Linden dollars), purchasing virtual land and consumer goods. Linden dollars can be traded for real world currency, based on fluctuating market values.

This innovative Internet-based approach provides unique opportunities to simulate real life scenarios and immerse the user in an environment that can be tailored to meet specific educational requirements. In these immersive learning environments, learners and teachers can interact from anywhere in the real world (Warburton, 2009). Virtual worlds such as SL may be used to engage students in active learning and simulated professional contexts without spatial or temporal limitations (Freire, 2009; Leslie Jarmon et al., 2009; Kaplan & Haenlein, 2009; Pizarro Lucas, Cruz–Benito, & Gonzalo, 2013). A survey among 209 educators using SL, revealed that most of respondents attribute to SL a significant or high potential for role-playing (94%), simulation and scenario activities (87%), artistic expression (86%), group work, collaboration and meetings (78%), distance learning programs (74%), team building (73%), conducting training (71%), professional development (68%) and teaching full courses (60%) (New Media Consortium, 2007; Redecker, 2013).

The European Space of Higher Education (ESHE) reveals how important is that students not only gain knowledge but also acquire competences during their studies. All EU Member States have agreed on eight key competences for lifelong learning framework (Council of the European Union, 2006). Competences are defined as a combination of knowledge, skills and attitudes appropriate to the context and are seen as necessary by all citizens for personal fulfilment and development, active citizenship, social inclusion and employment. In this new framework, academics need to improve our teaching process in order to succeed in the formation of professionals capable to integrate in the current labor market. Immersive learning environments are specifically suitable for acquiring 21st century skills; providing a powerful new form of curriculum for teaching and learning science and leading to significantly better learning results than traditional learning approaches (Redecker, 2013).

Our line of work started due to the interest in exploring the possibilities of SL for the simulation of real scenarios and situations that let the student training in professional competences. Our group has already carried out other experiences following this line, as activities in our Community Pharmacy and in our Pharmaceutical Quality Control Laboratory both created at the USA PHARMA Island in SL (García-Penalvo, Cruz-Benito, Maderuelo, Pérez-Blanco, & Martín-Suárez, 2014).

Several authors have explored SL (Atkinson, 2008; Beard et al., 2009; Boulos et al., 2007; Boulos et al., 2008; Jarmon, Lim, & Carpenter, 2009) and found a wide range of healthcare and higher education activities. SL has been used for health education, training health care providers and simulation purposes. Reference sites about healthcare in SL are Healthinfo Island, Imperial College London, Virtual Hallucinations or Second Health London. SL has been used in the