Chapter 6

Game-Based Virtual-World Environments to Engage Lifelong Learners in Open Courseware for Open Learning

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ABSTRACT

The Open Educational Resource (OER) movement has reached its tipping point in recent years due to advancement of technologies. The OpenCourseWare (OCW) of MIT, for instance, has inspired higher education institutions around the world to deploy OCW systems that provide educational contents free of charge to lifelong learners. In Taiwan, the Opensource Opencourse Prototype System (OOPS; www.myoops.org) plays a significant role in enabling Chinese-speaking learners to benefit from this global movement. Although OOPS has attracted hundreds of thousands of users with open courses translated into Chinese, understanding who these users are and why they chose this particular venue to advance their informal and lifelong learning remains elusive. As a result, the OOPS and other compatible open courseware portals around the world are often challenged by issues related to user engagement that could ultimately determine the sustainability of any open courseware portals. From the perspective of learning system design, it is impossible to develop and deploy effective user engagement strategies without knowing who the users are and what drive them to use the open learning system. To address this issue, this chapter, informed by open courseware users’ feedback, proposes a game-based learning approach situated in virtual worlds to improve and sustain user engagement in open learning environments.

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INTRODUCTION

First, the chapter will report a case study, based on more than 2,300 OOPS users, to offer a glimpse of open course users in Taiwan in terms of who they are and why they chose to take the advantage of this lifelong learning venue. Second, derived from the findings of the case study, this chapter will make design recommendations for a game-based open learning system taking the advantage of virtual worlds (e.g., immersive learning processes) to address the user engagement issues among open courseware users.

Due to advancing information and communication technologies, opportunities for open learning have become ubiquitous via online open learning systems. Teachers, students, and people who are passionate about sharing what they know are constantly uploading instructional materials in many forms to the Web. This phenomenon exemplifies the Open Educational Resources (OER) movement in that quality educational resources become highly accessible to general public on the collaborative Internet, which further implies many opportunities and resources available to enhance the development and delivery of lifelong learning (Mulder, 2006). Packer and Sharrar (2003), situated in career development, emphasized the importance of lifelong learning in that it enables employees to remain competitive in the workplace. On the other hand, the Organization for Economic Cooperation and Development (Werquin, 2010), taking a lifetime perspective, recognizes all formal, informal and non-formal learning as parts of lifelong learning for all people. Regardless of the differences between these two perspectives, in reality there are many learners worldwide for whom the Internet is their only option for accessing learning materials that are otherwise unavailable. The potential that these learning materials can be used by millions of people to continue their lifelong learning is simply phenomenal.

Among numerous projects that advance the OER movement, the OpenCourseWare (OCW) initiative of Massachusetts Institute of Technology (MIT)(2001) has inspired a trend in higher education institutions around the world, to make their course materials available on the Internet for everyone (Caswell, Henson, Jensen, & Wiley, 2008). Despite OCW’s popularity among general users in recent years, some, however, are concerned about the sustainability of open courseware systems. Issues such as the management of intellectual property, operational models of the technology, organizational and societal readiness for open knowledge sharing, and availability of infrastructure all play parts in sustaining OCW operations (Harley, 2008). A particularly pressing issue that could immediately impact the sustainability of OCW is its financial vulnerability induced by the lack of user engagement. For example, Utah State University’s OCW, the third OCW initiative after MIT and John Hopkins, has encountered some financial difficulties in recent years (Parry, 2009).

In Taiwan, the Opensource Opencourse Prototype System (OOPS) is facing similar obstacles. In order to sustain OOPS long term, the user engagement of OOPS must reach a steadily large volume of web visits in order to adopt viable financial models to generate revenues (Lohse & Spiller, 1999; Rappa, 2010). Hence, to devise effective engagement strategies to attract and sustain the desired level of user visits, this chapter first profiles the user of OOPS in Taiwan to understand who they are and what drives them to OOPS through a case study. Second, based on the user case study, the chapter will suggest user engagement strategies from the viewpoints of game-based learning and virtual worlds, which are best known for affording immersive and rich learning experiences for autonomous learners. The following sections provide discussions on the background of open education and learning, open educational resources, the case on OOPS in Taiwan, game-based learning, and virtual worlds for engaging lifelong learners.