Chapter 15

E–Learning Quality through Second Life: Exploiting, Investigating, and Evaluating the Efficiency Parameters of Collaborative Activities in Higher Education

Pellas Nikolaos
University of the Aegean, Greece

Kazanidis Ioannis
Kavala Institute of Technology, Greece

ABSTRACT

The systematic utilization and dissemination of e-learning, in juxtaposition with the expansion needs for collaborative knowledge, has led to a new generation system, Virtual Worlds (VWs). The quintessence and assistance of VWs allows adult users to immerse themselves in a common 3D multimedia environment, emphasizing co-creation and co-construction of their “knowledge field.” The corollary of interactivity and social form of modeling, allows the design of e-learning activities in accordance with contemporary pedagogical approaches. This chapter focuses both on how using the most advanced 3D Web-emulator of the real world, Second Life (SL), will increase users’ learning ability and vehemently consecrate the common multi-user environment as an incubator of knowledge and action. The methodology is to evaluate SL with the assistance of 70 trainee users, according to four different parameters that postulate the learning progression in a virtual system. The main contribution of this research will be to highlight the suitability of SL for organizing and conducting collaborative scenarios in higher education.

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INTRODUCTION

The expanded use of PCs and Web technologies in Higher Education with contemporary pedagogical theories that emphasize in inquiry learning, and decision-making activities, have influenced most strongly the entire range of teaching and learning process. This new “knowledge field” tend to change the traditional way of (e-) educational practice that is composed through three different dimensions: the cognitive, the emotional and the social. Inasmuch as, the need to create equal opportunities for excluded social groups, is more crucial today than ever before. Ensuring the lifelong learning and the exemption from the spatial-temporal commitments are imposed by the traditional way, worthy of Open and Distance Learning, as an equally effective training plan with a conventional.

One of the challenges of today’s educational systems is to upgrade the quality of the educational process through the use of technologically advanced learning environments, with both informal and formal Education. The computer-assisted training procedure is influenced by the extension of educational software. This includes information technologies such as the Internet, virtual reality, and the newer developments of artificial intelligence. Indeed, the dynamic view of Virtual Reality (VR), which is the “consequence” of this development, due to their outstanding characteristics, attracts interest both in the researching and the practical level. Web-based technology facilitates a variety of “alternative” ways for e-learning. Important advantages of these technologies allow students to (Clark & Maher, 2006; Franceschi & Lee, 2009; Lester & King, 2009; Pellas, 2012; Youngblut, 1998):

1. Visualize innovative concepts, observe phenomena or situations in extremely small to large spatial and temporal scales,
2. Teleport and visit other environments (or worlds) and interact with specific evidence,
3. Exploit activities that include these type of characteristics, which are the basis for implementing learning scenarios based on “modern” learning theories,
4. Construct knowledge and learn acquired e-skills through individual or group activities, in specially (pre-) designed virtual spaces or places.

The arrangements that mentioned above seem to come in contrast with most two-dimensional (2D) systems that are designed exclusively for learning (LMS: Learning Management Systems), as Blackboard or Moodle, etc. On the other hand, virtual environments do not differ in regard to the final learning product, providing students, according to their experience, with:

1. Creating online communities, both for initial training, and the latter for their professional acquisition skills, i.e. for Lifelong Learning (Bull & Kajder, 2004).
2. Engaging in action-based learning activities on scientific issues, and enhancing their social behavior (Kafai, 2006).
3. Promoting and enhancing the socio-cultural development, and the transformation of social relations into mental functions (Barab, et al., 2005).
4. Providing an environment for programming and co-construction of knowledge (Read, et al., 2006).
5. Exploring new mathematical concepts, and promoting scientific research (Clarke & Maher, 2006).
6. Connecting with theoretical psychopedagogical frameworks that define Contemporary Learning Theories (i.e. the descendants of socio-constructivism theory, such as Situated or Distributed Learning) to better study, observe and understand users’ cognition (Dieterle & Clarke, 2005).