

Chapter 9

How to Build Effective “Edutainment” Experiences in MUVES

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ABSTRACT

This chapter is about how to make an effective use of MUVES (Multi-Users Virtual Environments) in formal education. It draws on the authors' experience with four different programs deployed since 2002 involving, so far, more than 9,000 students from 18 European countries including Israel and the USA. The chapter is intended as a set of “lessons learned” on all of the relevant aspects of this kind of enterprise, from design to implementation and actual deployment. It is therefore meant as a short “users” guide for building effective and engaging edutainment experiences in virtual worlds.

INTRODUCTION

Multi-user 3D environments have become popular, due to the success of Second Life, in a number of fields, especially eEntertainment and eMarketing.

They can be used for cultural heritage, for example, in Kenderdine's “Ancient Olympia, Home of the Gods” (Kenderdine, 2001), Johnson's “Monticello, the home of Thomas Jefferson” (Johnson, 2005) or the “Theban Mapping Project” (Johnson, 2003). They can also be used for naturalistic heri-

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tage as in “Wolf Quest” (Schaller et al., 2009). It is less well-known, outside a small circle of researchers and professionals, that they can also be used for education.

Among the most well-known examples of virtual worlds for education are: Barab’s Quest Atlantis, a persistent virtual world where children as young as nine engage in curriculum-related quests to save an imaginary land from environmental disaster (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005; Barab, Gresalfi, & Arici, 2009); Dede’s River City, where teams of high school students investigate the social, health and environmental causes of an epidemic in a 19th century virtual town (Dede, Clarke, Ketelhut, Nelson, & Boeman, 2005); and Bers’s Zora, a virtual environment used by children with psychological, mental or physical problems, who can find a way to express themselves and tell their stories by manipulating virtual objects and characters (Bers, 2001).

While most of the cultural heritage 3D virtual worlds can also be categorized as “informal education”, i.e. a situation where the visitor does not necessarily have a precise learning goal, although he/she may be expected to learn something during the experience, only a few attempts are related to “formal education”, i.e. a situation where a group of pupils, possibly under the guidance of a teacher, have precise learning goals, to be achieved with a well-defined effort. Formal education has to meet stringent requirements, such as organized groups of pupils, organized scheduling, time constraints, possible conflict with standard curricular activities, etc. These constraints make it difficult to introduce collaborative technologies in formal education, since collaboration implies that different (groups of) pupils need to harmonize their constraints and their learning goals with the constraints and goals of other (groups of) pupils. The “added value” of the experience in terms of benefits must therefore be guaranteed for teachers to enroll in the activity.

In this chapter, we would like to introduce our experience with the design, implementation

and deployment of educational experiences using MUVes in formal educational settings. It is based on our long-term experience with more than 9,000 pupils, aged 12 to 19, from 18 European countries plus Israel and the USA. The chapter therefore aims to provide a set of organized ‘lessons learnt’ directly from the field. It will deal with general issues to be raised while building an effective ‘edutainment’ experience using collaborative technologies and 3D environments.

The Case Study: L@E

Learning@Europe (L@E) is an edutainment experience for European high school students based on a multi-user online virtual world, involving also a set of forums for asynchronous communication, and a body of educational material (in the format of interviews with leading international experts) which participants download from the website.

The subject matter of L@E is European modern history, and participants (groups of schools from at least three different countries) are asked, after having studied the content, to contribute knowledge, material evidence, and culture-specific perspectives from their country and national history, thus helping to build a broader picture of a historical phenomenon which affected Europe both at local and international level. The activities in an L@E experience include synchronous discussion (via chat) and team games in the 3D world, discussion on asynchronous online forums, and collaboration, both face-to-face among classmates and on the forums between remote partner classes, to produce the assignments: digital representations of knowledge synthesizing the results of students’ research and discussion.

L@E was built upon previous experiences with MUVes for education: Virtual Leonardo (Barbieri & Paolini, 2001), a digital 3D reconstruction of the Museum of Science and Technology in Milan, SEE (Shrine Educational Experience), where students from Europe and Israel would meet in a 3D environment evocative of the Shrine of the

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