

Introducing e-learning 3D solutions: case study

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ABSTRACT

In this paper, we describe the process of introduction of e-learning 3D solutions within a large education institution with experience in traditional web based e-learning. We focus in strategies and criterions adopted in order to maximize the benefits of the solutions and to reduce the resistance to this new schema.

Categories and Subject Descriptors

K.3.1 [Computer Uses in Education]: Collaborative learning – *e-learning 3D and MUEs*.

General Terms

Design

Keywords

E-learning and collaborative learning environments.

1. INTRODUCTION

The application of modern trends in graphic computations and virtual environments to e-learning is known commonly as e-learning 3D. Further than its aesthetic aspects, e-learning 3D has its own background particularities that must be taken into account when trying to integrate into existent traditional web-based e-learning solutions.

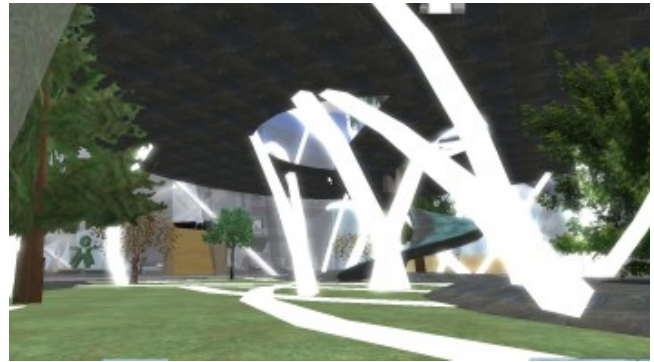
These particularities range from technical concerns until pedagogical concerns, even touching other disciplines and trends, like virtual architecture.

This paper shows those concerns in the context of a real e-learning 3D implementation developed by the authors of the paper, for the SENA¹ in Colombia.

2. DESCRIPTION OF THE PROJECT

SENA is a well known public educational institution, which objective is to offer high-quality educational programs in the technology and technological levels to a large number of students all over the country, and also online free courses open to anyone.

SENA also has good experience in traditional web-based e-learning projects, having one of the largest operative e-learning platform of the country.



The first stage of the project was to show the possibilities that e-learning 3D solutions would bring to the existing platform, focusing in the pedagogical enriching aspects, and its interoperability and compatibility with web based platforms.

3. TECHNICAL CONCERNS

The first technical concern that must be faced is the choose of the virtual world platform. Right now, industry of virtual worlds is moving out of its hype phase, and that means that in the market there are more than half a hundred of technologies, platforms and solutions to choose from.

Options range from closed proprietary models that offer a hardware infrastructure at low cost, until open sourced models where you need to provide all the required hardware.

For the first stage of the project, it was decided to put on a demonstrative educational platform in the popular virtual world of Second Life², along with a moodle³ installation with a demonstrative course. Both environments were connected using Slooodle, a open source project developed to connect them.

4. ARCHITECTURAL CONCERNS

¹ SENA information will be extended in the final release of this paper..

² Second Life is property of Linden Labs inc

³ Moodle is a open source CMS (Course Management System)



The Design of a virtual space for e-learning activities has its own concerns related to architectural spaces. Architecture for virtual worlds is known as “virtual architecture” and have its own strengths and pitfalls that must be taken into account when designing this kind of spaces.

The first issues that a virtual architect must face are the differences in locomotion when compared to real spaces. In a virtual world, it is usual that users can fly and teleport, and therefore, the way how spaces are conceived change radically.

The concept of “Virtual Architecture” must be understood as an architecture that is not only representative, used to visualize, understand or sell a project, but IT IS the architectural project by itself, because it contains basic fundamentals, its final goal: to modify a space according to the needs of man. The differences between an architectural project in the physical world and other in a digital environment are the needs of the man that appears in each environment. In the physical world, there are basic needs like eating, sleeping, breathing, moving, those are the needs of meat, of the physical world, but mentally man always have had other requirements that make it grow as a human being, curiosity, wanting to learn, feelings, religion, entertainment, experience and knowledge, love, these are some of the needs of the mind, a intangible world but not for that inexistent.

For centuries people have sought ways to share this world, through gestures, sounds, words, language, writing, illustration, the myths of religion, science and now through the great combination of all media globally.

5. PEDAGOGICAL CONCERNS

The use of a 3D virtual world in a pedagogical context force to redefine some positions about well known terms like “distance” and “space”. Traditional web based e-learning solutions are usually defined as asynchronous because the relationships between the basic elements of a educational system (to know: teacher, students, contents) are very limited and separated in time. A teacher puts content for its students, and sometime in the near future, they access to a platform where the content can be acquired. Even natural relationships in traditional education environments, like student to student, become affected in these platforms.

Instead, in a virtual world, things become different. Let say about a conference were all the participants are in different physical locations, but they are in the virtual world platform at the same

time, seeing to the others, and interacting with them. Do this is yet distance education?



Going a step further, platforms like Second Life allows the users to build objects in a collaborative way. As principles of Social Constructivism states, the dialog and negotiation process that arise when a group work in the construction of artifacts which reflect the knowledge is the better way for students to appropriate that knowledge.

In the case of the platform under study, the design of the platform was according to the pedagogical objectives of a pilot course.

In the course, the goal was to instruct traditional e-learning tutors about the basic fundamentals of e-learning 3D. in order to do that, each topic of the course was supported by a activity in the virtual world, where students are able to explore different aspects and possibilities.

One of the activities was the development of an artifact, a conceptual map about a pedagogical topic. The artifact must be builded in group, and delivered to the tutor for it supervision.

Other activity is take part in a virtual conference, remarking the advantages and particularities of this solution.

6. STRATEGIC CONCERNS

In order to develop a successful implementation of a e-learning 3D solution, some strategic concerns must be faced.



First, it must be clear that e-learning 3D is not a magical and all-purpose solution. it there are situations where it is well suited and

others where it is not. It is the responsibility of the designer to detect where, why and how specific e-learning 3D activities will bring value to an existing solution.

Second, integration with existing resources instead of direct competition is a key factor. Instead of replace the old solution, complementing can be a better strategic, because it will reduce the resistance of the designers of the old solution. Also, it will bring a positive message to directives and investors, because they will see that previous investments are not discarded prematurely.

7. ACKNOWLEDGMENTS

(this will be added in the final version).

8. REFERENCES

- [1] Second Life: Virtual World Platform. By Linden Labs.
www.secondlife.com
- [2] Moodle: Open source project, elearning platform.
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