



Chapter XVI

Distributed Virtual Reality Learning Environments

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Abstract

In this chapter we discuss the emerging technologies of collaborative virtual environments (CVEs), and outline their suitability for improving the pedagogical support provided by online learning environments. We provide a critique of current approaches to online learning (ranging from Web-based to video-conferencing), and argue that they are generally poor with regard to support for complex task-based interactions, as required by modern approaches to collaborative learning, as well as being weak in

terms of supporting sociability and community, which are powerful mechanisms for combating isolation. We present and discuss our own prototype CVE learning environment, using this discussion as a mechanism for further exploring the issues involved in online learning and online community in general. We present and discuss our virtual campus architecture and our model for complex task-based synchronous and asynchronous interaction.

Introduction

In today's information age, the demand for distance education (DE) has never been greater. With fewer traditional undergraduates (aged 18 to 22) enrolling for third level education, universities are now catering to the new "non-traditional" students. Having greater responsibilities and obligations within their lives, these students have greater expectations and requirements of the educational programs they partake in (Beller, 1998; Pallof & Pratt, 1999; Bernard, de Rubalcava, & St-Pierre, 2000). The different requirements of these non-traditional students demand a much more accessible and flexible framework for delivering education; it is not surprising; therefore, that DE programs are rapidly gaining in popularity.

Remarking on the currently pervasive model for DE, in which the only human-to-human interactions are the occasional instructor-student correspondence, Beller (1998) notes:

Under this model, distance learning is essentially self-learning, and requires great will power and self discipline on the part of the student as well as suitable learning skills. Such studies often suffer from an inferior public image and/or low popularity compared to studies conducted at traditional universities, either due to low-quality academic materials and poor academic control, or because of the difficulty of dealing alone with complex learning materials. The relatively low rate of success of these distance courses, and the even lower rate of those completing their studies and obtaining degrees, have contributed to their poor image. (p. 3)

It is clear that, with this correspondence model, the process of learning has several problems that have damaged the credibility of these institutions. While the augmentation of such educational programs with modern multimedia tech-

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