3D online learning environments improving online course discourse and community

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Distributed education can tap into the same technology that creates an immersive experience presented in a game context and harness it to both create active online learning communities and provide a means of immersive, engaged, and cost-effective asynchronous and synchronous course delivery. 3D online learning environments provide context, spatial awareness, constructivism, engagement, and other interactive possibilities while overlaying online collaborative tools (slides, whiteboards, etc) and unified communications (audio, text, messaging, web pages, etc). While 3D MMOSG's (Massive Multi-Player Online Social Games) are not new, adding functionality that goes beyond social interaction to support elements for distributed learning is new. This combination of interfaces provides a new and exciting approach for enhancing online course delivery, discourse, and community-building.

Due to the explosive growth of networked digital communications, distance education has become firmly embedded in post-secondary education (Walker, 2003). While web-based delivery has increased enrollment at universities, many schools have found that developing web-based systems that equal or surpass existing face-to-face programs is costly and time-consuming (Jones, in-press). But use of such systems tends to shift the emphasis from professors as instructors (synchronous face-to-face) to professors as subject matter experts (online web-based). This limitation causes some students to be dissatisfied with their online learning experience. Dissatisfaction with courses can have several consequences, such as students not performing well or dropping out of a course, lower enrollment in distance-delivered courses, or lower evaluation ratings of the instructor (J.R. Hill, 2001). Student dissatisfaction can only increase as universities seeking to increase enrollment place more emphasis on increasing the number of web-based courses offered.

However, 3D online learning environments provide new ways to deliver courses that include the needed elements of student community and support. Previously unavailable technology offers new integrated ways of providing feedback and facilitating interaction. Furthermore, there are no longer significant barriers to this technology (Jones, 2004). For example, over 90% of students at the University of North Texas (UNT) using the java-based CRG 3D online learning environment have the necessary computer components (3D graphics adapter, Internet, computer) for successful first-time use in their course (Jones, Morales, & Knezek, in press). The College of Education at UNT has been using a prototype 3D learning environment system for the past two years in graduate and undergraduate courses. The same system is being used in research studies with other post-secondary institutions in the U.S. and Japan. A study completed during the fall of 2003 showed that the 3D system performed as well as the face-to-face course sections with which it was compared. A study to be conducted during the fall of 2005 will examine student satisfaction and outcomes between a web-based offered course and one using the 3D system.

This paper and presentation will overview 3D online learning environments, discuss the issues involved with using the approach in both fully online and blended courses, and discuss the above-mentioned research being conducted at the University of North Texas.

Keywords: distributed learning, 3D environments, learning spaces, virtual communities