The Tree of Knowledge Project: Organic Designs as Virtual Learning Spaces

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ABSTRACT

The virtual Department of English at the Hong Kong Polytechnic University, also known as the Tree of Knowledge, is a project premised upon using ecology and organic forms to promote language learning in Second Life (SL). Inspired by Salmon’s (2010) Tree of Learning concept this study examines how an interactive ecological environment – in this case, a tree – might offer numerous learning possibilities via every segment of the structure. Third-party billboard and sculpt modeling techniques, SL building tools and mega prim applications (which are more effective for organic shapes) were used to develop a three-dimensional textured trunk, two-faced layered leaves and size-locked branches, crown, and roots. Preliminary student survey responses to the various elements of the virtual department architecture included an appreciation for creativity, innovation, and attractiveness in the design; challenges included a sense of dizziness when maneuvering around, difficulty in controlling the avatar, slow computer system responses, and lack of instruction in how to navigate through the structure.

Keywords: Ecology, English, Language Learning, Second Life (SL), Texturing, Tree Of Knowledge

INTRODUCTION

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Since the recording of humankind, the image of the tree has appeared in one form or another, amongst a diversity of cultures, histories, and imaginations: from the kumquat trees of happiness and prosperity that adorn homes during Chinese New Year, to the tree from which Adam and Eve ate forbidden fruit. Trees in virtual worlds take on yet additional functions and forms of meaning which are sometimes prohibitive for their physical counterparts – namely, issues of accessibility and complexity (Ramasundaram, Grunwald, Mangeot, Comerford, & Bliss, 2005) – whereby the simulated landscape acts as a three-dimensional, interactive interface providing open access, transparent ecosystems, and allowing synchronous and asynchronous experimentation. Second Life (SL), more specifically, is an immersive virtual environment with landscapes blanketed in lush and fantasy-orientated cyber-greenery,

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attracting users from a wide range of spheres such as automobile companies and poets, and with diverse avatar representations including celebrity-impersonators, Japanimation characters, vampires, and elves. Both virtual residents and virtual real estate engage in a symbiotic relationship, where one tentatively depends on the other in order for successful immersion to occur. Here, trees serve in various functions—as part of an avatar’s home garden, as background to a scene, as part of a nature preserve, or as a store front—possibly more so than any other organic form. While the context in which these organisms are used differs, the general premise tends to run parallel across the frontiers: trees are the guardians and providers of knowledge and opportunity.

However, educators and researchers also preside over the SL universe, creating simulations (“sims”) for collaboration, social interaction, and building upon practical, constructivist knowledge to bring back into the physical world (or “first life”). Over 700 global educational institutes are represented in SL (Linden Lab, 2011), and the virtual communities evolving from this space often reflect the particular principles of that institution. The University of California, Santa Barbara’s Department of English, for instance, boasts a SL “Transcriptions Project” which negotiates the medium between different eras of literature and literature’s relationship with information culture. However, these deliverables also need a platform from which to be disseminated. Some virtual departments reflect their respective physical departments; some come in the shape of space stations; while others expand across an entire forest or park. Consequently, users of fantasy-oriented communities expect that in exchange for their time, the environment will be interesting (Spaulding, 2010). Yet, despite the vast studies conducted on tree designs—their complexity and potential for interacting with and enhancing the virtual environment (Huang, Kahai, & Jestice, 2010; Nebiker, Bleisch, & Christen, 2010), and the effects trees have on the human psyche (De Kort, Meijnders, Sponslee, & IJsselsteijn, 2006; Lin, 2008)—and research observing ecology as an organism metaphor for learning (Stevens, 2007)—the idea that learning builds upon previous learner knowledge, and extends infinitely—reports on how organic structures could aid in virtual education are lacking.

Virtual environments allow for self-navigation and interaction with the environment and other virtual residents as well as creating objects (Yasar & Adiguzel, 2010). Within social media, virtual worlds tend to differ from other applications in three ways: i) virtual worlds allow others to interact in real time (whereas there are potential time delays in such tools as Facebook); ii) virtual worlds allow users to create fully customized self-representations (avatars) (perhaps more flexible than images created in online communities like YouTube); and iii) the basic rules of physics makes SL three dimensional and navigationally comparable (unlike the two dimensions of blogs) (Kaplan & Haenlein, 2009). These other social media, however, have evolved and adapted over time to incorporate more interactive and customizable user tools. Facebook, for example, has incorporated live chat, interactive gaming components, and marketplace functions to provide a more immersive user experience (Bicen & Cavus, 2011). Yet, the concept and application of virtual worlds has dated as far back as 1968 to the virtual reality simulators of Sutherland and Sproull (Sutherland, 1968), and virtual world definitions extend beyond social platforms to those with off-line components such as the children’s chore-tracking device used in MMORPGs (massive multiplayer online role playing games) like Handipoints, and those used to help hospitalized children by organizations such as Starlight Children’s Foundation. One advantage which virtual worlds seemingly have over other social media is the ability for users to engage with the environment in synchronous and asynchronous fashion.

The tree is one of the most complex designs used in research projects for nature studies (Sen & Day, 2005) since it is one of the most intricate elements of nature with multifaceted geometric properties, due to its branching structure,
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