

Online course discussion through Second Life

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Theme 1. Innovation, Emerging Technologies & Trends

ABSTRACT

The Griffith University Virtual Learning Environment was created using the Second Life application in 2007. Now in its third year of development and implementation, the effectiveness of the Second Life environment to support postgraduate online course discussions is compared to the online text chat tool available to the Blackboard Learning Management System.

In a study involving two postgraduate courses, each of 14 students, the group using the Second Life environment was found to more effectively support small group online text based discussions through three effects generated by the use of avatars to represent physical presence within the environment.

Firstly, participants could automatically telegraph their intention to contribute to discussions through animated typing simulated by their avatar while preparing a contribution. This provided pauses in discussions as participants waited for contributors to present their textual contribution before conversations progressed. This process was not evident in traditional text based chat systems where participant contributions would frequently be included after the discussion had moved on and this limitation was found to be an inhibiting factor to the participation of slower contributors.

Secondly, participants were strongly encouraged by the Second Life environment not to multitask during discussions. When the Second Life environment was not the focus of their activity or they left their computer inactive for any significant time, their avatar would animate as asleep. This indicated to all participants that the owner was absenting him or herself from the conversation and provided strong social pressure to remain active or at least attentive to conversations.

Finally, the Second Life environment encouraged ancillary conversations between participants to a greater extent than the Blackboard chat system. The Second Life environment enabled participant avatars the ability to cluster and physically move apart from the main group to conduct private or smaller group discussions. The physical separation of avatars within the environment, beyond the distance they send and receive typed messages, provided an effective sense of privacy while retaining the perception of remaining part of a larger group through the retained ability to observe clusters of avatars without receiving or contributing to their conversations.

Second Life presents an innovative online course discussion environment but as an emerging technology is subject to significant technical disruption and system requirements. However, the Second Life environment was found to support intuitive processes afforded by the Second Life environment that could not be replicated in a purely text based system.

Keyword: innovation, education, virtual environments, second life

INTRODUCTION

While some students are engaging with online 3D virtual environments as creative social spaces (Dicky, 2005) virtual environments are foreign to most educators. Second Life is a popular virtual environment and is being evaluated for its potential in facilitating online education (Dede et al., 2005; Zagami, 2008a; Zagami, 2008b). This paper describes a range of educational applications being explored within the Second Life environment and highlights the issues involved in the development and implementation of a virtual environment for Griffith University. The findings of a trial of the environment are presented comparing the effectiveness of the Second Life environment with the BlackBoard environment to support small group discussions.

Second Life

Second Life is one of several dozen virtual worlds (Second Life in Education, 2008a) currently available for use or under development. As a Virtual Learning Environment (VLE), Second Life is being used for a wide variety of educational applications. Current categories include distance and flexible education; presentations, panels and discussions; training and skills development; self-paced tutorials; displays and exhibits; immersive exhibits; roleplays and simulations; data visualisations and simulations; libraries, art galleries and museums; historical re-creations and re-enactments, living and immersive archaeology; computer programming; artificial intelligence projects; artificial life projects; multimedia and games design; art and music projects; literature, composition and creative writing; theatre and performance art; photostories and photo scenarios; machinima; treasure hunts and quests; virtual tourism, cultural immersion and cultural exchange; language teaching and practice, and language immersion; social science and anthropological research; awareness/consciousness raising and fund raising; support and opportunities for people with disabilities; politics, governance, civics and legal practice; business, commerce, financial practice and modelling; real estate practice; product design, prototyping, user-testing and market research; interior design; architectural design and modelling; and urban planning and design (Second Life in Education, 2008b).

GUSL

Development of the Griffith University Second Life (GUSL) environment was focused on supporting a range of educational activities. It comprises a virtual island containing lecture facilities and tutorial spaces (Figures 1, 2 and 3). While the Griffith University Second Life (GUSL) environment contains other facilities such as experimental zones, social spaces and a database of links to other Second Life educational locations, this paper focuses on the use of the tutorial spaces in comparison with a traditional online tutorial environment. The GUSL environment was developed with the support of an eLearning Fellowship in Semester 1, 2007 and first used for courses in Semester 2, 2007.



Figure 1. GUSL



Figure 2. GUSL Presentation Space



Figure 3. GUSL Tutorial Space

The development of the GUSL environment was focused on addressing shortcomings in traditional online courses. In particular, support for small group discussion was addressed through the construction of specific environments that would facilitate these discussions. In order to focus participation within the environment on discussions, minimal use was made of traditional building structures beyond that necessary to assist in identifying locations and bounding the purpose of specific locations such as a discussion spaces, presentation spaces, recreation spaces or resource spaces. To provide these boundaries, natural formations such as ridges, plateaus, and canyons were used with bush land foliage providing screens between locations. The predominant navigation mode within Second Life is to 'fly' between locations; this provided an effective means of participant transition between locations and aids in establishing the form of interaction that would occur in various locations. It was found however that during initial orientation with the GUSL environment, participants needed additional assistance in learning the location and purpose of each location. This was facilitated by prominent signage and a system of teleportation booths that enabled participants to select from a list of locations and instantaneously move to that location. Participants were additionally provided with Second Life Location Based Links (SLURL) that functions similar to a website address. Provided in their course notes, the SLURL links allowed participants to enter the GUSL environment at specified locations.

In order to maximise tutorial time on learning activities directly related to their course, participants were required to acquire a Second Life account, construct an avatar (3D representation of the participant), name it (for many the most challenging aspect), and complete an automated introductory tutorial, before commencing the first course tutorial.

This minimised technical disruptions during the course but as the Second Life environment is undergoing continuous development, did not entirely eliminate technical problems. These were mitigated to some extent by pre tutorial testing sessions, preparation of alternative avatars, and establishment of alternative meeting locations. Alternative communication methods were also established to assist in resolving technical problems that included email and Skype, and if all else failed, transcripts of sessions were available to participants.

STUDY

This study builds upon a previous study (Zagami, 2008a) and follows a similar methodology in order to confirm its results. In both studies, the Second Life Virtual Learning Environment (VLE) text based chat system was compared with the Learning Management System (LMS) text based chat system, BlackBoard. The environments were used to facilitate discussion on course readings, and clarify assessment tasks. All participants in the LMS group were familiar with the BlackBoard environment, none of the students in the VLE group had previously used the Second Life VLE. Each group was comprised of fourteen participants with an equivalent mix of gender, pre-service teaching experience, and ICT skill.

During six two-hour sessions, participants met synchronously in the environment and participated in text based online discussions to support their readings and assessment tasks. The tutorial sessions were facilitated by a tutor who provided directed questions to participants to prompt inclusion in discussions, the same tutor was used in both courses. Discussions were recorded, with each contribution identified by the contributor and time stamped. In addition to a post course survey on perceived effectiveness of the environment to support small group online discussion, six elements of online discussions were analysed in the study. The percentage of sessions attended roughly compared participant engagement and acceptance of the environment. Discussion contribution was measured by the number of discrete discussion topics generated during the course by all participants. Discussion sustainment was measured as the average number of characters contributed to a discussion thread by all participants. Discussion inclusion was measured by the mean number of characters contributed by each participant to each discussion thread. The average length of time from when a directed question was put to a participant to when they submitted a response was measured in seconds, and the average length of this response measured in characters (Table 1).

	LMS	VLE
Attendance	80%	85%
Discussion Contribution (discrete discussion threads generated)	43	67
Discussion sustainment (average number of characters contributed to a discussion thread)	68	96
Discussion Inclusion (mean contribution in characters (Standard Deviation))	22 (<i>SD</i> =8)	43 (<i>SD</i> =10)
Average time before response (seconds)	33	9
Average length of response (characters)	110	58

Table 1 Comparison of LMS and VLE

FINDINGS

The findings suggest that for participants using the LMS, discussions tended to be shorter but individual contributions were more carefully thought out with a longer preparation time and lengthier responses than with the VLE group. For participants using the VLE, discussions tended to be sustained over a longer period of time but with less consideration given to individual responses in terms of time taken to formulate responses and the length of the response. Overall however, discussions in the VLE group were substantially longer, involved more overall contributions from more participants, and through multiple contributions from participants, sustained discussion longer and generated increased contribution to the discussion.

During discussions, participants in the VLE would generally contribute short responses with an expectation established that participants would contribute to each new point in the discussion thread as it was raised. The sense of physical presence generated by the visual depiction of participant avatars provided pressure on participants to respond to points raised in the discussions. Within the LMS, even when prompted to contribute, conversations would often continue past the opportune moment for a participant to add their contribution to the flow of discussion. This was exacerbated by the tendency of some participants to spend considerable time developing detailed responses. In contrast, within the VLE visual cues were provided of a participant preparing a response - their avatar (3D representation of self) would appear to be typing. This prompted pauses in discussions while awaiting responses and encouraged responses as all participants were aware if a response was being prepared or not, and felt greater pressure to provide a contribution than those using the LMS chat system.

Participants in the Second Life VLE reported three effects generated by the use of avatars to represent physical presence within the environment. Firstly, participants could automatically telegraph their intention to contribute to discussions through animated typing simulated by their avatar while preparing a contribution. This provided pauses in discussions as participants waited for contributors to present their textual contribution before conversations progressed. This process was not evident in traditional text based chat systems where participant contributions would frequently be included after the discussion had moved on and this limitation was found to be an inhibiting factor to the participation of slower contributors.

Secondly, participants were strongly encouraged by the Second Life environment not to multitask during discussions. When the Second Life environment was not the focus of their activity or they left their computer inactive for any significant time, their avatar would animate as asleep. This indicated to all participants that the owner was absenting him or herself from the conversation and provided strong social pressure to remain active or at least attentive to conversations.

Finally, the Second Life environment encouraged ancillary conversations between participants to a greater extent than the Blackboard chat system. The Second Life environment enabled participant avatars the ability to cluster and physically move apart from the main group to conduct private or smaller group discussions. The physical separation of avatars within the environment, beyond the distance they send and receive typed messages, provided an effective sense of privacy while retaining the perception of remaining part of a larger group through the retained ability to observe clusters of avatars without receiving or contributing to their conversations.

Overall, the study found a substantial difference in participant discussion during small group tutorials. While individual responses in the Second Life VLE were less considered and detailed than those in the BlackBoard LMS, the interplay of ideas and collaborative contribution to discussion threads resulted in an overall increase in the depth and breadth of discussions in the Second Life VLE. Both prompted and unprompted contribution to discussions were greater in the Second Life VLE group and this was attributed to the visual representations of participants generating a greater sense of presence in the discussion group, increased pressure to contribute to discussions, and the ability to physically separate and conduct ancillary conversations while remaining part of an overall group discussion.

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