SECOND LIFE FOR ARCHAEOLOGY, DIGITAL PHOTOGRAPHY AND MEDIA AND COMMUNICATIONS EDUCATION – THREE CASE STUDIES

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Abstract

This article reports on three case studies of integrating Second Life (SL) into three disciplines: Archaeology, Digital Photography and Media and Communications. The studies are conducted by Beyond Distance Research Alliance at University of Leicester within a JISC founded research project called MOOSE: MOdelling Of Secondlife Environment (www.le.ac.uk/beyonddistance/moose/). MOOSE focuses on modelling the pedagogical aspects of student learning in groups in SL. We design, develop and pilot activities in SL (SL-tivities) that enable groups of students, represented as avatars, to achieve socialisation and engagement for more productive information exchange and knowledge construction.

This article introduces three different approaches to use SL for three different disciplines. Within each case study, we demonstrate how SL can be used in a more productive way to enhance student learning the subject, describe the design of SL-tivities and development of artefacts within the University of Leicester's Media Zoo island in SL (http://slurl.com/secondlife/Media%20Zoo/170/150/17), and discuss key results from research.

Introduction

SL is the most popular and widely used 3-D Multi User Virtual Environment (3-D MUVE) by far. Free/low cost access and relatively low technical abilities required for engagement make SL increasingly popular amongst the ordinary users (Guest, 2007). Statistics from Linden Labs shows that the number of registered users (residents) of SL is growing fast, and there are more than 10 million residents currently 'live' in SL. Gartner Inc. (2007) predicted that 80% of the active internet users will have a 'Second Life' by the end of 2011.

There is a growing interest in using 3-D MUVEs for teaching and learning in Higher Education (HE). Over 300 universities, mostly in the UK and the US have established virtual island in SL so far (Salmon & Hawkridge, forthcoming). Salmon (forthcoming) predicted that all universities will have a SL presence in five years.

Research into 3-D MUVEs for HE is still in its early stage. Most of the research tends to be based on small-scale experiments. Nevertheless, these pilot studies have identified several areas that 3-D MUVEs such as SL are particularly beneficial for teaching and learning in HE.

As social environments with a sense of presence and immediacy (Bronack, et al., 2006) the 3-D MUVEs offer massive opportunities for building relationships (McKay et al., 2008), community of practice and productive collaboration (Dickey, 2005; Jarmon & Sanchez, 2008).

SL offers the most powerful object-creation toolset of any 3-D MUVE (Salmon, forthcoming). This gives SL the potential for creating authentic learning experiences. One way to do it is to simulate and replicate cultures and societies that are extinctive or difficult to visit in real life, allowing learners to visit and immerse themselves in such cultures and environments (Salmon, forthcoming). Another way is to simulate processes that are difficult or impossible to display in real life, such as how mountains are formed; how a car is built in an assembly line; how to use a piece of equipment of instrument; how to run business, sell products, provide services (Antonacci & Modaress, 2005). This possibility for providing authentic learning experience also makes SL a suitable place for role-playing activities, for example in Medical and Health education (Boulos, et al., 2007) and Language education (Edwards et al., 2008).

SL offers an opportunity for collaboratively development of re-usable objects and tools (Livingstone & Kemp, 2006). More recently, several courses have encouraged the building of artefacts by the learners themselves, with interesting results (Good et al. 2008).

This paper reports on three pilot studies of using SL for supporting and enhancing student learning in HE. It examined the affordance of SL for providing immersive cultural experience, designing creative collaborations and development of student-created interactive learning objects.

Methodology

We conducted research with students and tutors from three courses at two HE institutions: an undergraduate distance learning course in Archaeological Theory (Level 2) at School of Archaeology and Ancient History, University of Leicester, in which four students and two tutors are involved; a postgraduate course in Globalisation at Department of Media and Communications, University of Leicester, in which four students and two tutors are involved; and an undergraduate course in Digital Photography (Level 2) at the London South Bank University, in which six students and a tutor are involved.

Students were recruited on a voluntary basis. Student and tutor engagement with SL-tivities were researched using qualitative methods. Data was captured in a number of ways. We conducted semi-structured interviews with students and tutors. The student interviews lasted about 40-60 minutes each. The interviews concentrated on their personal experience of using SL, in particular, their participation in SL-tivities and perceptions on presence through avatars. The tutor interviews lasted about an hour long each to capture their personal experience and views on using SL. Tutors' interviews also gathered background information about the course and students and the purpose of integrating SL into the course. We also recorded chat logs and took observation notes from each teaching session in SL for further analysis.

Data analysis is based on a methodology called cognitive mapping to create unique 'maps' of individuals and groups and their change in views, feelings and experiences over time. The methodology is grounded in Kelly's theories of personal constructs (Kelly, 1955). The researcher input interview data into a software called Decision Explorer (http://www.banxia.com/demain.html) to develop a cognitive map of an individual student or tutor. Individual maps under certain themes were then merged into a merged map to capture a collective view on a specific topic.

Case study 1: Second Life for Archaeology

Background

Archaeology teaching involves introducing students to the landscape, religion and rituals, social structure and practices of a society or culture. Conventionally, teaching has been done through written descriptions, diagrams and 2-D images, largely relying on students' imagination and visioning abilities. SL offers a medium through which artefacts and landscapes can be built and created easily, allowing students to see, explore, interact and role-play.

Development of artefacts in SL

Sami Tent

The first artefact we produced was based on a Sami Tent used to simulate the lives of Sami people who live in Northern Scandinavia. The tent structure has been used as a temporary dwelling by nomadic Reindeer herders of northern Scandinavia for the last 2500 years. Sami tents are divided into social spaces, access to which depends upon an individual's gender and status in the group. The purpose of the SL Sami tent was to familiarise avatars with the concept of social space. For example, there are two entrances: one at the front for females, children and servants; and one at the back for the men in the group. To give the students as close to a real-life experience, permissions were added to the tent based on these criteria and then assigned to the students avatars replicating and replacing different social statuses. This added a significantly authentic value to the learning experience.

Kalasha Village

Another SL second creation for the Archaeology course is to replicate a Kalasha Village, another example of social space. The Kalasha are an ethnic group from the Hindu Kush Mountains in the north-west of Pakistan. The Kalasha divide space based on gender. In SL, the avatars were taken on a tour up the side of the valley, similarly to the way that they might on a real-life field trip. The avatars immersed themselves in the cultural perspective in the Kalasha environment.

Two snapshots below to show how a Sami tent and a Kalasha village have been replicated in SL.


Figure 1 and 2 - Sami tent and Kalasha village in SL

Design of SL-tivities

We designed two SL-tivities associated with the Sami tent, each of which is about an hour long. In the first SL-tivity, students were introduced to the theories about the use of space in Social Sciences and had some discussion. In the second SL-tivity, students were given the opportunity to navigate around the tent, see the layout and division of the space, explore where they can go and where they can't, according to gender, and interact with each other about what they found and thought.

We designed another two SL-tivities associated with the Kalasha valley, each lasting about an hour. In the first SL-tivity, students were given a tour of the valley and introduced to different aspects of Kalasha culture by the tutor. In the second SL-tivity students were given the opportunity to explore different parts of the village by themselves to experience where they can go and where they can't, according to gender. They had the opportunity to interact with each other and share their experiences.

Results

Interviews with students uncovered how their learning has been transformed by participating in SL-tivities. For distance learners, SL has enabled the participants to do activities together. This learning experience is qualitatively different from their usual way of learning by "reading the text and thinking about things, on your own", as mentioned by one of the students. Data from interviews further revealed how group building is faster in SL than through asynchronous text-based online discussion forum. Being able to 'see' each other through avatars makes students "feel more connected" with fellow students and tutors. This connection fosters a bond between the students and tutors, who were previously unknown to each other. The synchronous communication in SL enabled students to ask tutors and each other questions and get an answer immediately. This instant and being connected experience helped students exchange information and learn the course material faster than before.

More importantly, collaborative SL-tivities carried out in the immersive virtual environment helped students to learn in ways that they could not when alone at a distance. The Archaeology students all agreed that SL is suitable for teaching subjects such as Archaeology, where the uses of space and landscape require visual 3-D elements that are not easily replicated or demonstrated in real-life. Participants described how being in the Sami tent and Kalasha valley allowed them to see the layout of the place, touch the artefacts, and experience where they can go and where they can't. They reported that this immersive experience helped them to imagine how those places look like and extended and reinforced what they had learned from the textbook.

Case study 2: Second Life for Digital Photography

Background

The six volunteers are second year students studying an undergraduate degree programme in Digital Photography. They studied a module about the theories in youth cultures and subcultures in their first year. Previously, students learned theories from the textbook, and carried out fieldwork by visiting local communities and interviewing people.

For a Digital Photography degree, Second Life presents a unique teaching and learning environment. It is one of the most photographed 3-DMUVE offering its own photographic tools such as snapshots and cameral control. SL is also a rich social space offering many possibilities for practice-based photographic art research. The tutor believes that SL has great possibilities for exploration technical functions as well as ethical issues in taking digital images.

Development of artefacts in SL

StoryCubes have been used within the classroom as a tactile thinking and storytelling tool for exploring relationships and narratives. On each face of the cube the student would write or draw an image to illustrate or describe an idea, an object or an action relating to a specific topic. When the StoryCubes are placed together it is possible to build up multiple narratives or explore the relationships between them in a three-dimensional way. When building a structure of multiple cubes some faces will need to remain hidden from view, therefore discussion and argument amongst the story-tellers is required to agree on the key issues, both of the topic and the story.

In Second Life Virtual StoryCubes are not only simple to construct but add a new dimension to the end story because they are not affected by gravity as the paper-based cubes are in the classroom. Plus, the size and flexibility of the cubes are potentially unlimited in a Virtual World enabling more complex an interactive stories to be told. Adding high quality images, in contrast to the hand drawn illustrations in real-life, are also straight forward and offer amazing end products.

Design of SL-tivities

We designed three SL-tivities for the Digital Photography students. In the first SL-tivity, students were demonstrated and practised basic skills, particularly with regard to taking snapshot, using cameral control and changing environmental settings. Students were then set off to visit different islands on SL and took digital images in relation to subcultures. Those digital images will be used in the second SL-tivity.

In the second SL-tivity, students were firstly taught how to create a cube, change the size, texture of it and move it around. Students were given more time to visit more places on SL and took photos in relation to subcultures. They then need to put their selected photos onto each side of their cube.

In the third SL-tivity, each student was given an opportunity to demonstrate his or her cube to the others and share experience about which places they visited, where they took the photo and why those places and photos make sense to them with the others. Students then were given a task to put their cubes together. They need to negotiate on the shape and sequence how to put their cubes, work out a storyline and tell a story of all the cubes.

Two snapshots below to show student engagement with Virtual StoryCubs.

Figure 3 and 4 - Virtual StoryCubs inSL

Results

All the six Digital Photography students have enjoyed the opportunity to explore a variety of techniques, such as cameral control and change of environmental settings offered by SL in taking high quality digital photos. They think that SL offers a virtual place for them to look into subcultures as well. Taking photos about avatars in SL promotes them to consider broader ethical issues in relation to digital images.

More importantly, SL offers an opportunity for creative collaborations. All the students were fascinated by the potential of SL for building and developing objects collaboratively. They found their participation in building story cubes, moving them around, and telling a story about them fun and engaging. Their group discussion and negotiation went fast and efficient. A key element contributing to this engaging and participative experience is that the group discussion was anchored by the development of interactive objects.

Case study 3: Second Life for Media & Communications

Background

We are experimenting SL with a postgraduate course in Globalisation in Media and Communications. Previously, students studied theories about digital identities from the textbook. In SL, residents present themselves and interact with each other through avatars. SL as a new digital medium offers students a virtual and immersive environment to explore and research into digital identity.

Design of SL-tivities

We designed and developed two SL-tivities. In the first SL-tivity, students will be introduced to the theoretical debates in digital identity through a couple of PowerPoint slides. Students then will join a group discussion about these theories, and will be asked to share how they chose their avatars.

In the second SL-tivity, students will visit one or two pre-selected islands on SL, and explore identity issues on their own. They will be asked to return to the Media Zoo island and discuss why they choose the island(s), what they have encountered and how this experience has influenced their understanding in digital identity.

Results

The study is on-going. Students and tutors will be participating in SL-tivities in early February 2009, and research findings will be disseminated soon after February.

Conclusion and future work

Three pilot studies contributed to knowledge in substantive and overlapping areas. These include: 'socialisation' and 'social presence' in 3-D MUVE and their role in supporting learning at a distance, 'identity' and 'sub-cultures' issues in SL, learning through role-play and simulations, new pedagogies and literacy in immersive environments.

Three pilot studies also contributed to the reservoir of understating of how SL can be used for formal teaching and learning in HE. This empirical knowledge and research to practice approaches developed in MOOSE has contributed to the redesigning of the distance delivery of two postgraduate courses: Psychology and Education at University of Leicester. Course teams are currently examining MOOSE approaches to improve the learning experience of about 200 students distributed around the world. Specific approaches under consideration are: SL for induction and dissertation supervision.

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