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Introducing Second Life, a 3D Virtual World, to Students and Educators

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Abstract—Three-dimensional virtual worlds are multimedia, simulated environments, often managed over the Web, which users can ‘inhabit’ and interact via their own graphical self-representations known as ‘avatars’. *Second Life* is the most widely used 3D virtual world in education. In this paper we discuss our experiences of introducing *Second Life* to students and educators and imparting to them the skills required to interact within the 3D environment. We also discuss the resources that we developed to support their induction and training.

Keywords: 3D virtual world; e-learning; learning spaces, *Second Life*; socialisation; technology-enabled learning

I. SECOND LIFE

Second Life is a persistent, online three-dimensional multi-user virtual world. Users synchronously interact in 3D spaces via their graphical self-representations known as ‘avatars’ and converse in real-time through gestures, and audio- and text-based (chat and instant messaging) communication [1]. Users connect to the *Second Life* environment with a software program called a client or viewer, which is responsible for displaying the 3D world and for negotiating user commands with a central server. Typically the client displays the user’s avatar and surrounding portion of the world consisting of other avatars, landscape, buildings, etc. Unlike Massively Multi-player Online Role-playing Games such as *World of Warcraft* that have a scripted plot or storyline for the role-playing and game(s), *Second Life*, is not a ‘game’ per se. *Second Life* has a very strong user community, and the content and narrative is constructed and owned by the residents, rather than by Linden Labs, the company who provide the infrastructure, hardware and software to support *Second Life* [2].

In addition to social recreation and business applications, *Second Life* has attracted attention from academic institutions as an addition to face-to-face teaching or to be used in conjunction with 2D technologies such as blogs, wikis and discussion forums [3]. An island of an institution in *Second Life* can provide a dedicated environment for learning, which helps to ensure a sense of belonging and purpose for the students. The lack of a guiding narrative in *Second Life* provides flexibility for educators to design learning spaces and activities for their pedagogical requirements [4].

II. DISTANCE LEARNING AT THE OPEN UNIVERSITY

The Open University (OU) is the only university in the UK which is dedicated to distance learning. The OU’s style of teaching is ‘supported open learning’; ‘open learning’ means that students study at a distance in their own time by reading course material, working on course

activities, writing assignments and perhaps working with other students. ‘Supported’ means support from a tutor or at Regional Centres within UK, as well as from centralised areas such as the Library or OU’s students association.

A. Technology-enabled learning environments

Over the last few years, we have introduced a number of technologies in our courses to enable our students to communicate with their tutor and other students, and to collaborate online with other students on course activities. For example, we have introduced blogs on courses for students to keep a diary of their thoughts and reflections, or wikis to support team projects where students can collaboratively author documents, or forums to encourage dialogue amongst students who may never meet one another or their tutor in person [5]. In our empirical research on the effectiveness of these technologies in student’s learning, we uncovered that students were hesitant to review critically or comment on each other’s contributions, or they had difficulty in scheduling tasks in a collaborative activity, or to negotiate time schedules. One of the reasons was the lack of socialisation amongst students, that is, students not knowing one another well enough to be able to act as critical reviewers or commentators at a distance [3].

Socialisation encompasses the social act of coming together for a common purpose, for example, when students familiarise themselves with one other and learn about the norms, roles, rules and code of conduct. This initial phase of familiarisation is achieved through interacting with one another and sharing ideas and information. For example, socialisation activities could be students sharing their personal interests such as photography, travelling, etc. in the first few blog posts or discussing their reasons for taking up the course in the discussion forum, and so on. Although blogs, wikis and forums can support socialization, their asynchronous nature can affect students’ perceptions of social presence and effectiveness of collaboration [5].

B. Role of *Second Life* in Socialisation

A 3D virtual world such as *Second Life* with synchronous interactions via avatars and through voice, text and gestures, and via avatars may facilitate socialisation, an antecedent for effective online collaboration. The sense of presence and sense of place in a 3D world can make learning, and indeed socialising, in a virtual world a more ‘human’ experience than many other 2D technology-enabled learning environments [3].

At the OU, we have introduced *Second Life* on some of the courses to support socialisation in the early stages of a course, or to conduct tutorials for students who may find it difficult to attend face-to-face tutorials, that we run on

some of the courses, due to travel and time constraints. We also conduct supervision meetings with some of our part-time PhD students based overseas in Second Life. In one of the Computing courses in which students carry out a team project, we have encouraged students to conduct team meetings in Second Life and our research of students' experiences has shown that students find Second Life meetings more effective for decision-making than conversations over phone or using audio-conferencing tools such as Skype.

III. SECOND LIFE TRAINING

Students and educators can face an initial hurdle to learn to use Second Life software and educators need guidance for designing and conducting learning activities within Second Life. In this paper, we share our experiences of induction, training and skills development of educators and students.

We have identified five specific stages related to training and skills development in Second Life: educators and students require training to use the Second Life software; imparting communication and group-working skills; educators require awareness of and training to use various educational tools within Second Life; educators need guidance for designing and conducting course-related Second Life activities within Second Life; and guidance for choosing 3D learning spaces which match with the students' Second Life skills and the proposed learning activities.

A. Training to use the Second Life software

On the Second Life's website [1], there are resources which guide the user about downloading the software and for creating an account which includes steps for creating an avatar. The Second Life's website also has a quick start guide which introduces a new user to the Second Life's user interface, about changing the avatar's appearance, how to walk and fly, and how to communicate within Second Life using IM, local chat and voice. We send the URLs of these resources along with a user guide that we have developed to the students and educators so that they can get the software installed and become familiar with the interface and can learn about avatar-based interactions. However, we have noticed that taking the students and educators through the Second Life's user interface features once again when they come into Second Life for the first session is helpful. Ahead of the first session or meeting within Second Life, we (the trainers or facilitators) enquire the avatar names of the students and educators (referred to as participants in this paper) and send them the location of the meeting. We then 'friend' the 'avatars': this enables us to know when the participants come into Second Life and we can also teleport them to our location within Second Life, if the participants find it difficult to reach the meeting location.

During the first session, we run a tutorial where we introduce the Second Life's user interface features to the participants and give them an opportunity to ask questions. In this first session, we also ask them to 'friend' one another as a way to learn the Second Life feature but also as a means of socialization (getting to know one another).

B. Imparting group-working and communication skills

In order to provide hands-on experience of the various communication features within Second Life, particularly interacting within a closed group, we take the participants on tours in Second Life. In Second Life there are some interesting educational islands. Going on tours to some of these islands introduces the participants to the potential of 3D virtual worlds in education and through these tours, the participants learn to navigate (fly, walk, teleport) and communicate (group chat in text and voice) in Second Life. The tours also contribute towards socialization. In these tours, we sometimes ask them to work in groups and role-play a team of journalists and perform roles of time-keeper, photographer and note-taker. Through these role-playing activities, participants learn the skills of taking photographs within Second Life, using the notes feature of Second Life to take notes, and how to work in teams within Second Life. In addition to the tours, we set up socialisation activities such as treasure hunting or shopping in Second Life. We provide the participants with a guide of etiquettes and norms for communication and collaboration within Second Life.

C. Introducing the educational tools to educators

Educators require awareness of and training to use the various educational tools and functionalities within Second Life. We have developed a user guide for the educators. In addition, we conduct tutorials within Second Life to give demonstrations of tools such as the Power Point presenter, note-card giver, survey tools, and so on, to the educators.

D. Designing learning activities for Second Life

One of the most challenging stages is to guide the educators about designing and conducting course-related learning activities within Second Life [6]. We undertake tours of educational islands within Second Life to demonstrate the potential of Second Life and to show them examples of Second Life activities. A group discussion after such tours helps the educators to discuss and relate the examples they have seen with the requirements of their courses. In addition, we spend considerable time with the educators to think through the learning outcomes of the activities that they are planning to run within Second Life and the affordances that Second Life provides and the facilities that the existing educational islands already have. For example, on an Human-Computer Interaction course, if an educator would like to teach data visualisation to the students, there are several places in Second Life where real-time data is being brought in to create a variety of visualisations. If these existing venues match with the course's learning outcomes, they could be utilized to make students discuss and critique the visualisations. We also provide guidance to educators to design or choose learning spaces within Second Life which match with the students' Second Life skills and the proposed learning activities.

E. Learning spaces in Second Life

There are many forms of learning spaces within Second Life: (see <http://tinyurl.com/yeuugls>): auditoriums, informal and personal classrooms, open box classrooms, self-paced classrooms and hybrid self-paced and community gathering classrooms. These and other diverse

designs of learning spaces facilitate innovative styles of learning and collaboration.

Based on our empirical investigations [4], the activities and suggestions for the types of learning spaces are listed in Table 1.

TABLE I. LEARNING ACTIVITIES AND THE LEARNING SPACES IN SECOND LIFE

Learning activity	Learning space
Research meetings with supervisors	Private areas (indoors or outdoors) for one-to-one meetings and small team meetings; availability of research topic specific resources
Meetings with educators: drop-in sessions for specialist support in out-of-office hours	Real-world-like offices
Poster exhibitions	Indoors or outdoors areas with easy movement of the avatars
Lectures, guest speakers	Lecture theatres (indoors); amphitheatre (outdoors)
Seminars or small-group discussions	Formal or informal areas; e.g. formal chairs and tables, or in tree houses
Teaching design skills	Sandboxes (open spaces)
For students' practicing Second Life building skills and projects	Elevated platforms in the sky to avoid interruptions; or in sandboxes
Simulations for role-play	Designs are based on the learning context and the discipline; for example, an entire island is focused on the Roman Empire including the architecture and the attires of the volunteer avatars on the island
Virtual field trips	Meeting point somewhere in Second Life (mostly at the host institution's island) and thereafter visits to topic-related islands
Instructor-led, skills-based training (negotiation, decision-making, communication)	Simulations of learning spaces to match with the stories or case studies related to the skills being taught. These simulations (of situations) tend to be saved in the inventory and brought out when the story or case study is being discussed (see, for example, http://www.open.ac.uk/blogs/CCChat/?p=86)
Self-paced asynchronous learning	Resource-based learning spaces comprising landmarks for finding the way and navigation with posters, videos, links to blogs and websites, links to podcasts, note-card givers
Conducting empirical research within Second Life (interviews and focus groups with other avatars)	Private semi-formal areas or areas which are relatively interruption free (café-like areas, rather than formal boardroom-style areas)
Longitudinal (long-term) research project focused on and within Second Life	Entire island that is closed to the public; for example, Georgia State University, Atlanta, has built more than one island and has closed one of the islands to the public for carrying out institution-based teaching-related research

IV. CONCLUSIONS

Research is still needed to make 3D virtual worlds more accessible and usable. For effective design and

conduct of activities in virtual worlds, learners, educators, and developers need to acquire and master new sets of competencies and skills in order for them to make the most efficient and effective use of 3D virtual worlds in learning and teaching. Further, there are several other contextual factors that may impact on student experience, such as a student's Second Life skills, a student's motivation for engaging with Second Life, the educator's Second Life skills and preparedness for conducting Second Life activities, whether Second Life is a compulsory component in the course, or is it aimed at supporting informal learning [7], whether Second Life activities will be assessed; and the nature of course delivery (distance education, face-to-face, or blended delivery). There is a need to conduct longitudinal studies which consider these contextual factors and where the students' and educator's experiences are captured over a course or a programme. These studies will help uncover the influence of some or all of these contextual factors on student experience, and whether the students' perceptions of the 3D environment as an educational space change over a period of time.

The author will be happy to share the resources [8] and experiences with colleagues who wish to include 3D virtual worlds such as Second Life in their curriculum.

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