

On the Beach - A handbook for using 3D virtual digital platforms like Second Life – “the WEISL” – ‘Writing Explorations in Second Life’

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Abstract: This paper discusses our findings resulting from SWAP funded project – On The Beach. SWAP funds support research into SUPPORTING WRITING FOR ASSESSMENT PURPOSES :creative approaches to reading, note-making and writing development. A Second Life handbook was produced to enhance learning and teaching of writing skills within the context of new media technology platforms. The project interprets the notion of an essay is an investigation into a topic by an author - be it visual, textual or kinaesthetic or if well done - through all these inter-relational modes, with attention to content, structure, style and language accuracy. "Writing" and "note-taking" are enhanced within this wider and innovative context. Our second life handbook – the WEISL– ‘writing explorations in second life’ uses digital media tools to generate and develop "new methods of writing, note-taking, investigation and essay production" within emerging 3d virtual platforms, and to enable future integration with mobile and embedded platforms and online communities.

Virtual Worlds, Second Life, Writing, e-Learning, creativity, imagination

1. INTRODUCTION

On the Beach project enabled the development of a handbook for Second Life as a creative environment. During 2010, academic staff in collaboration with undergraduate and postgraduate students designed and developed assignments that facilitated creativity, imagination, exploration, problem-solving and communication. Open, semi-structured and structured exercises, both practical and research-driven enabled the use and delivery of tools, environments, projects and communities.

Our multi-disciplinary approach drew from technical development provided by this new platform, integrating research into reflective and collaborative writing, pedagogic studies collated by Molka-Danielsen and Deutschmann on the Learning and Teaching in the virtual world of Second Life, Stewart’s theoretical research on narratives of the miniature and Boellstorff’s ethnographical study in Second Life.

The WEISL handbook and associated web site are available for users wishing to exploit new environments such as Second Life. The tools and exercises can be used as they are or modified to suit other courses and curricula. The handbook

contains lesson plans with exercise sheets and guidance while the web site contains detailed technical instructions that are subject to change as Second Life continues to be developed and offers opportunity for community involvement by the users.

Second Life engages students more than conventional virtual learning environments and provides an economical package of a wide range of facilities: creativity, 3D building, communication by voice and text, exploration of geographical, cultural and simultaneous translation of languages within the context of social encounter and empathetic engagement.

Second Life skill-sets can create and enable avatar-populated virtual worlds that offer cost effective services for sectors such as social care, education, health communication, team building, and resource management.

2.1 WHAT IS SECOND LIFE?

Second Life is an online networked 3D virtual world accessible by anyone with a PC, Macintosh, Linux, or mobile device with access to the internet. Virtual

3D avatar populated worlds have developed from multi-user virtual environments ‘MUVES’. The SL world is accessed by an open source client program known as the SL viewer. The virtual world was launched in 2003 but most of the content of Second Life is created by the users, not by Linden Labs who created, continue to develop, run and maintain the Second Life platform.

The viewer includes:

- 3D modelling tools for creation and modification of the inworld environment. (Inworld refers to objects and experiences within the 3D virtual environment.)
- A highly functional programming language LSL (Linden Scripting Language).
- Communications tools for text and voice communications.
- Group and friend structures for social networking.
- An accessible accounting system for sales and purchasing of assets and services.

Second Life land can be purchased or rented but Second Life can be used for no charge. The user is represented in the world by an avatar that can be tailored and enhanced. Avatars can be used by one user, used by many users, or a single user can have many avatars.

This combination of these facilities and tools makes Second Life a very affordable and accessible e-Learning platform. In addition, the immersive experience users commonly report, indicates that it is capable of engaging learners not engaged by more conventional classroom techniques. Many Higher and Further Educational establishments use Second Life for teaching and research.

2.2. The benefits of virtual worlds for learning and teaching

Today’s students engage with an enriched experience of technologically mediated creative and social worlds. Embedding integrated digital eco-systems has a positive impact on retention and ability. (Dreher et al 2009) .Whilst Web 2.0 applications such as wikis and blogs enable and enrich shared learning platforms, 3d immersive worlds enable immediate interactivity, collaboration, spatial reasoning, autonomy and connect to students’ future aspirations.

2.2.1 Primary benefits

Primary benefits of the immersive 3D environment are the development and encouragement of social collaboration, an emphasis on visual spatial ability

within a multi-modal environment and a sense of play, exploration and social presence.

The ability to collaborate within the learning context is identified as a primary benefit (Zhao, Y. and Wu,L.2009) (Dreher et al 2009). The promotion of spatial reasoning in Second Life is evident for people with abstract reasoning ability but also with concrete reasoning abilities, although different cognitive structuring is required for different users (Hwang et al 2008).

2.3 Learning through enjoyment and exploration

The Second Life platform can be used as a playground, enabling learning through experimentation. Like all environments, both conditions of safety and freedom to experiment need to be attended to.

2.3.1 Second Life as a playground

The general public often describe Second Life as a game, however it is more accurately described as a playground of user-generated content with user generated identities, roles, rules or conventions. Second Life can be described as a vast number of globally networked islands on which there are individual uniquely constructed dolls houses and environments. Virtual avatar worlds can facilitate play and experimentation as part of the learning experience – whether this is through building environments and objects, simulations of processes, teleporting and exploring the inworld, writing, role-playing, performance and presentations.

2.3.2 Second Life as a ‘safe’ playground

Second Life can be used as a ‘safe’ playground space. Degrees of safety can be offered to achieve the appropriate balance between individual free will and social ethics and values. Second Life Land can technically be accessed either as a public space or an enclosed private space, or semi-private, (whereby it can only be easily accessed by specific location co-ordinates). Second Life activities can be monitored by the online presence of Linden Lab avatars, owners of Second Life land, Second Life group monitors.

2.3.3 Learning through experimentation enabling failure, iterative development and success

Learners assimilate transferable technical, project management, and communication skills as they engage in play. Creative experimental play – whether in groups or as individuals playing and building individually but in parallel on the same site – is understood to be of benefit. Atkins and Caukill (2009) promoted learning through play and active

experimentation in the virtual world, offering challenges to develop practicing failure and work towards eventual success. Their case study describes a learner who was enabled to fail and thus build up skills iteratively. Second life was used to create tasks to enable eLearning. Their observations of one student project indicated that students building eLearning models – need to use naming conventions, within a structured asset management system, to enable tracking of design processes and technical procedures. Their case history demonstrated how the student proactively was able to build a simulation thus enabling him to grasp complex concepts and also offered him the opportunity to present his work to people from other institutions.

2.4 Reflective and collaborative writing on virtual platforms

Second Life as a socially mediated virtual world can offer researchers and writers – an enhanced environment for the writing process. Traditionally an author engages in the writing process in stages. Often primary stage of research leads to a conceptualising, and structuring phase, then a series of drafts. An editor can collaborate to support an individual author. Authors, often collaborate to develop shared investigation and experience. Reflective writing necessitates the centrality of ‘an internal witness’ and the building up of resilience and thus independent critical thinking (Kendal 2005). Writing process is understood as both an iterative continual process but also a process that requires different atmospheres or environments for both collaborative and self-reflective stages of the process. Research and investigation involves hunting, gathering, and the analysis of material, followed by conceptualisation, structuring and synthesis.

2.5 Appeal of immersion into the miniature

The appeal of a ‘dolls house’ world, whether electronically mediated or as described by non-digital forms of representation is established across culture. Stewart (1993) investigates how the miniature as a form of representation mediates experience, through illustrations from literature and history. Locating the book as a metaphor for containment and intimacy, for interiority and exteriority, Stewart extends this investigation to the ‘dolls house’. The ‘dolls house’ is experienced as a house within a house, not only presenting an articulation of exteriority and interiority but also of two forms of interiority. This space within an enclosed space feels as if a locket or secret recess of the heart.

Stewart (1993) observes that dolls houses historically, were an adult amusement that

represented a set of real external property relations containing ornaments, privacy, variety and fecundity.

Within the dolls house, through an individual’s absolute control and manipulation, relations can be inverted, designed, and contaminated. As the puppet master, an individual can invent and imagine rules and relationships without reference to another person, a witness, or an externally shared reality. Both the appeal and danger of an individual’s immersion into a miniature world is evident in the excessive addictions of the contemporary online gaming generation. In contrast to the control of an omnipotent game environment, virtual social worlds like Second Life offer the opportunity for open-ended experience and the exercise of individual free will within a shared reality with others to enhance and extend communication and culture.

Second Life offers a particular experience of sensory immersion. The tradition of the miniature creates an ‘other’ time, skewing and negating the space-time relations experienced in the everyday real world. It can remove and compress our experience of time so that we become lost in the interiority and fantasy of the miniature world. Stewart (1993) observes that within the dolls house tradition, there is an emphasis on the Tableau and the Visual rather than the narrative and other senses. Whilst in Second Life, Tableau collections are evident, innovative performance based and simulated narratives are being developed. And in Second Life the dominance of the visual interface has developed into a multi-sensory experience through 3D space, video, text, chat and audio channels, distributed both peer to peer, and one to many.

The appeal of immersion into the miniature, of which Second Life is a contemporary illustration – foregrounds a nostalgia for a craft culture that is individually unique, enabling a return to playground of childhood and pleasure for the hobbyist, distinct from repetition and constraints of industrial production. Can the virtual world as multi-sensory communication channel with its appeal of immersive play respond to business, social and community requirements?

2.6 Emerging business models

Acknowledging the reinvention of business as providers of e-services and the creation of virtual communities with common interests across many market sectors, emerging business models enable the opportunities for open source development, open collaborative practices and third party development, as observed by Tapscott and Williams (2006). The community mass

collaboration model, threatens closed access developers like Microsoft, Adobe and Apple. Business opportunities include developing third party widgets for social media and mobile application, as well as earning Linden currency that can be converted to US dollars. Drivers of capitalism are not lost but transformed. Boellstorff (2008) documents a new movement of ‘creationist capitalism’ within the virtual world of Second Life, currently emerging as ‘cottage industry’ product and service designers. However, traditional corporate activities in Second Life lack the creativity of resident activity and enthusiasms noted by Boellstorff (2008) and as observed by Hudson and Moschini (2009).

Virtual worlds, as an emerging communication channel are on the agenda of large corporations, many of whom are funding innovation projects, such as the NASA Second Life project (2009) in which involving the virtual ‘inworld’ communities is an essential thrust. In tandem with this reconfiguration of capitalism within community collaborative practices, Hall (2008) calls for open access that is digital, online, and free of charge, moving from knowledge economy to an academic gift economy, funded by the state through the tax paying public or charitable bodies like Wikipedia. These, different yet simultaneous movements of creationist capitalism across multiple platforms, the long tail of niche markets as indicated by Anderson (2004) and free academic access are shifting our systems of production and exchange.¹

2.7 Virtual World as InWorld cultures

As a spring-board for this project with Second Life, Boellstorff’s ethnographical study, ‘Coming of Age in Second Life’ enabled the bringing together of our individual experiences of virtual worlds and developed our understanding of how this fusion of human and avatar could support learning and teaching in innovative ways and also enabled our understanding of the wider culture of immersive experience.

Boellstorff, through his ethnographic investigation of the virtual human and cybersociality within Second Life, identified key questions about the nature of friendships, addiction, seepage, and membranes of commentary.

Can virtual places enable relationships, not just networked connections? Our experiences are made up of many different actual worlds and virtual worlds. How do we deal with this fragmented experience? Does this fragmentation or difference

enable empathy? The adding of ‘Friends’ to virtual worlds is a swapping of media enriched business cards but does not necessarily create a friendship.

Some users seem to immerse themselves addictively – in a sense ‘download’ themselves into the virtual world. As avatar-enabled selves, we experience linkages or seepages from virtual to actual worlds known as ‘bleed through moments’.

Virtual worlds offer avatar- enhanced selves porous membranes from real world experience through to 1.) online forums, blogs and webpages, 2.) relationships between SL and the virtual game and worlds, 3.) relationships between SL and the actual world and importantly the connections between these membranes. The online-networked experience enables a rich tapestry of commentaries. Reminiscent of ‘Commentaria’ in theological discourse – whereby one source text is literally surrounded by commentary from different scholars on the same page. Similarly the virtual world is supported by threads of online and ongoing commentaries. (Boellstorff,2008)

Boellstorff (2008) concludes that “All of us, online and offline , are virtually human.” In that, all of us are representing ourselves to our self, to others and within many actual worlds.

Our approach to Learning and Teaching sought to emphasis play, fun, imagination and empathetic understanding whilst delivering learning outcomes. In this project, Second Life was used as learning platform to deliver a ‘real experience and ‘real’ project outcomes.

The focus was - not as a FaceBook – a social network world – where the individual present a favourable persona and gathers a collection of ‘Friends’ as if business cards, but rather as a platform for creative activity – both building 3d and communicating and writing as individuals and co-operative working in teams.

3. LONDON METROPOLITAN UNIVERSITY AND SECOND LIFE

3.1 Beginnings at LondonMet

Various departments and faculties at London Metropolitan University have been using Second Life since 2006, and in 2008 the Faculty of Computing invested in four regions (one region being a 256metre by 256 metre plot of land) and this was augmented by another region run by the Faculty of Humanities, Arts, Languages and Education. The LondonMet regions were first developed by post graduate students studying E-

¹ Kendal (2010) Employment in the creative industries, extract from draft chapter for Lane and Moshini in Digital Media Handbook -

Learning and were later joined by undergraduates and students from other faculties and departments.

3.2 Current uses of Second Life

The land is currently used by staff and students across the University for distance learning, 3D design and building, event planning, student recruitment and e-learning research.

4. BEGINNING THE PROJECT

4.1 Background

The ‘On the Beach’ project aimed to stimulate, engage creative writing processes making use of virtual space enabling one to one and one to many communication and sharing documents across groups. Funded by ‘Write Now’ Centre for Excellence in Teaching and Learning within London Metropolitan University, as a SWAP project, it sought to deliver creative approaches to reading, note-making and writing development within Second Life as an emerging blended learning platform.

4.2 Students Taking Part

During the life of the project, six groups of students within the Faculty of Computing on computing or multimedia courses participated. Most students had not previously used Second Life. Three undergraduate student groups in Study Skills modules followed through the main project programme as indicated below. In addition, two post graduate and foundation student groups participated in a three one-hour sessions, shortened programme, integrated into a Research and Academic Skills module. A further student undergraduate group in a Cultural Heritage module, worked on a Fashion Show project adapting elements of the programme.

5. MAIN PROJECT STAGES

5.1 Introducing Students to SL

In the first three weeks students were given worksheets to familiarise themselves with the user interface. They were directed to the Beach that was a large parcel of land in the form of a beach with rolling waves and circles of chairs around bonfires. Each area was sign posted and colour coded for each group. The initial worksheet tasks enabled them to:

- Move their avatar by walking, flying, and teleporting.
- Communicate with each other by text and voice

- Work together in small groups investigating their environment and recording via notes and snapshots what they found.

5.2 Problem solving

In week four, students were given a work sheet asking them to meet at the beach and solve the Collaborative Computer Cube Challenges. No further instructions were given. Students found large red cubes on the beach and very quickly, by working together within SL discovered that by clicking on the outside of the cubes they were given a question, by clicking the faces they could change the characters displayed and enter their answer. If they got the answer correct the red cube changed to green.

This exercise created a lot of cooperative interaction between students and enabled them to work effectively within informal teams. Some questions required specialist knowledge, such as being able to read music, which only a few members of the class possessed.

In weeks five and six students were encouraged to explore other areas of SL and to record their conversations and notes using a small utility worn by their avatar we created for them which emailed their conversations back to their email box. This meant they could concentrate on exploring and conversing without having to worry about making notes.

In week seven we gave them another small gadget worn by their avatar, which utilised the Google translator and enabled students to converse in many languages. The students were encouraged to go to non-English speaking areas of Second Life and interview other avatars in other languages. Students were given suggested places to visit.

Some followed our instructions but many chose to use the translator to converse within the group using languages they had some knowledge from school but were far from fluent in. Again this created a high level of interaction between students and a very high level of engagement.

5.3 Creative activities: Fashion Show

The Fashion Show assignment engaged a first year class over ten four-hour sessions. Students were given the task of creating different avatar identities and appearances, designing historical and contemporary costumes, building a fashion catwalk, and producing a Live Fashion Event with music and audience within SL.

Following a field trip to the V&A museum, different digital design methods using visual language

techniques, photography, Adobe Illustrator and Photoshop, to create both historical and contemporary costumes for their SL avatars. Students took roles of: Catwalk Builders, Master of Ceremonies, and everyone used their avatar in the event as a fashion model, using combinations of animation presets. To supplement their clothes collection, a beached galleon was provided on the beach containing crates of clothes and accessories to add to their avatar wardrobe.

Research knowledge on content and technical know how methods were exchanged inworld using SL note cards between avatars, transmission of collective class notes of student contributions between avatars, Metpad recordings of inworld Chat, screen snapshots and location references using SLURLS (Second Life URLs) and URLs from the 2D internet.

Following a planning session and dress rehearsal the students presented their fashion show in SL to a small audience, simultaneously both inworld and in the real classroom. Alongside this deliverable, the students designed, wrote and presented an online proposal for funding to a real world museum for a SL project incorporating their visual assets, some using a comic book style.

5.4 Collaborative researching and writing

Our ‘On the Beach’ Second Life Project set out to provide a varied and rich environment to facilitate both collaboration and self-reflective aspects. The ‘On the Beach’ writing process was presented as a staged process. Three distinct environments were provided:

1. Communal areas with deck chairs and open fires for social groupings; here avatars could gather and sit whilst discuss their methods of research and investigation as well as being a meeting point to regroup after InWorld teleporting exploration and they could gather here, whilst their real selves surfed the 2D internet gathering content.
2. A round table for conversation with chairs, which added chairs as and when required, surrounded by an apple orchard with butterflies. This was our tutorial space for tutors and students.
3. Quiet streams and inlets with trees, grasses, rocks and lapping waves for quiet reflection, meditation and stillness. Research subjects included: Museums in SL, online and in the real world, Accessibility online and in SL, Translation tools online and in SL.

The sessions were carried out in the classroom setting as a blended learning enhancement to a curriculum of research skill development. The classrooms were full and noisy. This social atmosphere was reflected in the virtual environment and little use was made of the quiet

zones on the beach during this time. However at other times, late in the evening, during the night, students were observed using their avatars to build explore and gather assets across all zones of the beach and other areas as an individual activity. At these points contact was made with the tutor’s avatar, as a greeting, or requesting information or for problem solving or support.

5.5 Transferring information from 2D to 3D platforms

Technological developments are enabling the building up and representation of 3D space to be node-based rather than overlapping layers. How do users navigate this transitional stage? Whilst Kim et al (2008) observed that the 2D web collaborative communities from Wikipedia, to social media networks are paving a way for a 3d internet as an integrated experience². Our observations indicate that users created a transitional phase across 2D and 3D platforms by transfer and integration of image and textual information (using copy and paste and screen capture) across and between the 2D web and Second Life 3D windows by opening up and working in both windows simultaneously on the computer screen.

6. FINDINGS AND REACTIONS TO THE PROJECT

6.1 Feedback from Students

In the final week students were asked for feedback on the experience. Almost all students reported that they had enjoyed the work and found it useful. They commented that it had made the students closer, had broken down barriers, and encouraged them to work together and engaged students who might have been left out.

They had particularly enjoyed the Collaborative Computer Cube Challenges and using the language translator. (This has now been incorporated by Linden Labs into the standard viewer.)

6.2 Observations

Students were obviously engaged much more while using SL than they would have been using more conventional classroom techniques. Most students were on Study Skills modules, which are notoriously unpopular among students.

² “3D Internet—a Web of three- dimensional, computer simulated *virtual worlds*, visited by real people who interact with others, and are served by businesses that are hosted in these worlds” Kim, H.M., Lyons, K., and Cunningham, M. A. 2008

During one session a group of students were absent from the campus due to food poisoning but attended the class by using Second Life. Many students have continued to use SL long after the module finished and some, especially those who are quiet and shy in class, have created homes within SL and use SL most days for socialising.

Many times during classes the students were very engaged with the activities, the classroom would fall silent except for the tapping of keyboards and clicking of mice. This level of engagement and concentration is rare among first year students on modules of this type.

7. PROFILE OF SECOND LIFE DEVELOPMENTS AT LONDONMET

The On the Beach project was inspired, designed and developed alongside other projects within a Second Life profile, developed and led by Alan Hudson in the Faculty of Computing as indicated below.

7.1 Virtual Nursery

An MSc E-Learning student has created a simulated nursery for the training of early years teachers. The building has been designed using government guidelines on aspects such as carpet colours, window area and the provision of outside space. It is inhabited by interactive bot children who become bored, hungry, tired, dirty and wet. The trainees must work to try to keep the bot children happy.

7.2 North Star Gallery

Another MSc E-Learning student has created a large exhibition space used by LondonMet's IICTD (International Institute for Culture Tourism and Development). The institute runs modules in which students are required to organise and stage an event. While this is difficult and expensive in real life, needing a safe physical space, it is easy and cheap in SL. The E-Learning student created a large building incorporating good practice guidelines for exhibiting art and then handed this over to IICTD students who now use it as their event space. They gather exhibits and organise and advertise the opening night, which is conducted by them welcoming guests to the reception.

7.3 Machinima

SL can be used as a studio or film set. Avatars can act out roles and the video captured from the screen and edited like conventional live action footage. Media companies such as Indusgeeks use

Machinima extensively with their clients. A number of SL introductory videos have been made for use with students and staff and businesses interested in collaborative work with LondonMet.

7.4 Londinium – Roman London

An MSc E-Learning student, working with The Museum of London, has created a model of Londinium. The model includes the main forum with interactive bot stall holders and a time line showing the changes in architecture during the Roman occupation.

7.5 Computer Science

All objects in SL can contain scripts to interact with avatars and change their appearance. A number of models have been produced including:

- A ring communications network
- Random number generation
- A neural network

These provide very visual ways of showing quite abstract concepts and could form interesting student assignments.

Programming can also be taught using the visual and interactive nature of SL. Linden Scripting Language (LSL) is an event driven highly functional programming language with syntax very similar to Java, C and many modern programming languages. However, the function library is oriented to actions one would want to use in a virtual world. Again the visual nature of SL and its media rich environment makes programming enjoyable and engages students. Undergraduate and postgraduate students have been taught basic programming using SL with very good results.

7.6 Toxic Warehouse

An interactive model of a modern warehouse is being built with funding from the CILT (Certified Institute of Logistics and Transport) for Health and Safety training. Exposing students to hazards is obviously difficult but in a virtual world we can safely expose avatars to dangers. Scripted objects can sense an approaching avatar and react by e.g. falling on them or running them over. This project started in Autumn 2010 and is continuing.

7.6 Recruitment and Putting LondonMet on the Virtual Map

LondonMet has been using SL for recruitment and general marketing for some time. The welcome area is now being rebuilt in coordination with our International recruitment Office. Avatars will be able to find course information, useful contacts and information about living in London.

7.7 Collaboration with Virtual London

Virtually Linked, a London based Media Company, run a Virtual London Second Life island, which virtually mirrors real London. Our students have collaborated with them on SL developments; one helping new users of SL master the interface, and one environmental project, which will probably be further developed later in 2011.

7.8 Socialising and recreation

Many users of SL use it purely as a place to meet people and socialise. We have developed our own nightclub with streamed music and are currently hosting a Second Life football stadium and team.

8. THE FUTURE OF SECOND LIFE AND VIRTUAL WORLDS

8.1 Highly Functional Virtual Environments

The majority of current developments in SL emphasise the 3D building aspect of the platform, creating many detailed but static creations. Programming tends to be limited to small separate interactions, e.g. a greeter object giving a visitor a welcome and information, doors opening and closing, board games, and vehicles.

As yet there appears to be little exploitation of the platform for creating a single integrated experience for a visitor in which actions trigger a series of actions using rich media (sound, video), much like a theatre or installation experience. SL has many theatres but these attempts to recreate a conventional theatre experience rather than capitalising on aspects, which a platform such as SL can provide. They maintain distinctions between audience and performance and audience space and stage.

When creating environments in SL builders tend to reproduce conventional buildings, with doors, windows, walls and roofs, even though security and weather, which make these essential in real life, is very different in SL.

When building in SL it is very important, as it is when building any system, to build what is needed and not build with preconceptions in mind from a different environment. Buildings are commonly not necessary in SL. They use up valuable computing resources and doors this particularly can be an annoying barrier in SL serving no useful purpose.

8.2 The Future of 3D and Virtual Worlds

There are hundreds, if not thousands, of online virtual worlds. World of Warcraft is the most used, but Second Life is the most popular world in which

users are responsible for making most of the content. In fact in many virtual worlds the users can make no content. This makes Second Life the first choice for most educational establishments.

There is much activity and discussion about the creation of a 3D web environment, but little progress appears to be being made establishing standards and tangible software. Virtual Worlds that have been developed since the launch of Second Life seem to be poor in functionality, perhaps because the developers just don't have the experience and expertise of Linden Labs.

3D imagery seems to be increasingly popular with various 3D film formats, more 3D cinemas and the evolution of 3D TV. It would seem that 3D online worlds are here to stay.

9. CONCLUSION

The On the Beach project investigated ways in which an avatar-populated 3D virtual environment can be used to develop and enhance writing skills for the investigatory essay within the context of research and creative production. The observed benefits of Second Life include: synthetic experience of inter-relational modalities; simulations and exercises which offer both open, semi-structured and structured components; development of reasoning skills – spatial, abstract, concrete, problem-solving, iterative design and development; research and communication skills to include reflective tasks, drafting, producing and sharing documents as a team (objectives followed the traditional focus of content, style, structure and language accuracy), communication tools included note-recording and making, in text, chat, screen capture and audio, translator tools; transportation and search methods for the exploration of alternative geographic and cultural worlds within SL; team-working, empathetic engagement within a social context.

Critical and theoretical approaches to SL experience offers an understanding of SL as an immersive avatar-populated environment which builds on the cultural traditions of the miniature, the dolls house and a craft culture. Furthermore SL is a carrier for 'creationist capitalism' (Boellstorff 2008), not only providing a playground for the hobbyist but importantly developing virtual inworld communities for public-facing organisations i.e. NASA whilst the systems of production and exchange shift perhaps to a first tier gift economy that builds up communities and market share with secondary purchasable additional and value added services.

Whilst SL was observed to be used effectively for teaching skills in problem-solving, creative activities

and collaborative research and writing, there was a question as to the duration of the learning curve for novice users. Following feedback, it was observed that the ten-session scenario was more satisfying for users compared to the users in the three-session scenario, as they could build up their skills in Second Life. Novice users required time to develop familiarity with the interface and function tools. The three session brief scenario was a small part of a full and complex curriculum. Although successful as a taster to virtual worlds, its brevity did not lend itself to project development. Some students on this brief programme did go on to develop individually designed SL projects in other modules.

Additional observations indicated that students on the Foundation undergraduate courses found the SL interface more intuitive than many of the older students on the postgraduate courses. New audiences, building on their childhood experiences of virtual, mobile, media and gaming devices are likely to populate the new 3D avatar worlds for pleasure and work. Usability and functionality continue to be iteratively developed, producing relevant and appropriate virtual environments to deliver social, community, educational and business requirements. These may not necessarily simulate the real environment but offer virtual environments which simulate the exploration and play inherent in problem-solving activities.

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