

Second Life in higher education, medicine and health

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Health and medical islands, installations and services within Second Life have been developed by a variety of medical, educational, research and private organisations.

The Second Life 'worlds' consist of islands and larger areas of 'virtual land'. Linden Labs make much of their income by renting out land to people and organisations. Once you are renting some land, you can develop buildings and other structures. Some laws of physics can be ignored; for example, you can build rooms or floors high in the sky. Structures can incorporate an increasing selection of media, connecting Second Life to websites and 'Web 2.0' applications such as YouTube and Twitter. Streaming video feeds from 'real world' conferences – and sending back comments and questions from avatars to the conference – is increasingly popular, as it means attendees do not have to travel to the event, saving time, money and carbon emissions.

An introduction to Second Life

Second Life (SL) <www.secondlife.com> is an internet-based 'virtual world', launched in 2003 by Linden Research, otherwise known as Linden Labs (LL). Around 13 million accounts have been set up in SL, though the average number of people 'in world' at any one time is around 40,000.

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People (residents) who register for SL are given a default, human-shaped avatar. This can be easily customised at any point in a large variety of human and non-human ways, for example by changing its clothing. It is not uncommon to attend an event in SL and find yourself amid a crowd of human, semi-human and non-human avatars.

Avatars move around the world by walking or flying or by 'teleporting' instantly to locations. Forms of communication include instant messaging, text chat, movement (e.g.

or sold, which has led to a market-based economy. A small proportion of people make a living from SL, while more make enough income to offset their in-world expenses. The complex economy, and issues such as the exchange rate with the US dollar and the taxation of income generated within SL, has led to interest from economists, academics and Inland Revenue services.

Teen Second Life is a self-contained version of SL for 13–17-year-olds. Age verification is required for people to enter the Teen Grid. Teen

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waving to or pointing at another avatar) or, more recently, using voice (which has received a mixed response).

Underpinning SL is a currency system (the Linden Dollar) and an economy. People can create virtual items, such as clothing, shoes, new body shapes and other ephemera that exist in SL only. These can then be traded

Second Life users are transferred to the main SL grid once they turn 18 years, taking all content and private islands with them.

Though there are many articles and books on SL and the many other emerging virtual environments and worlds, there is no replacement for actually experimenting with and experiencing SL itself. It is highly

recommended to download the software (called the 'viewer'), set up a free avatar, follow the orientation exercises, find and explore areas of

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interest, and communicate with other people within SL.

SL in UK higher education

The key advantage of SL in teaching and learning is that there are many activities in which the student must be more than a passive learner in order to progress. The student has to develop 'stuff', collaborate and participate. Before these can occur, he or she has to master a new and transferable skill set, meaning that, in SL, learning is done more by participating and doing than by listening and absorbing.

A growing body of research points to virtual worlds being increasingly used in teaching and learning over the next few years. For example, a key 2007 report predicted that 'virtual learning spaces' will be adopted on a wide-scale basis in education within the next 2-3 years.¹

After a slow take-up during previous academic years, the number of higher education staff in the UK who are developing or operating teaching and learning resources in SL has

the London Oncology Clinic Island
<<http://slurl.com/secondlife/Cancer%20Innovation/137/65/29>>
is a recreation of a real-world clinic.

grown rapidly in the last year. While an accurate figure is difficult to determine (partially due to the non-public nature of some developments), a report by the Eduserv Foundation² estimated that some three-quarters of UK universities are actively developing or using SL at an institutional, departmental, or individual academic level. Of these, many institutions support several ongoing SL developments, often involving groups of people or collaborations across departments or institutions rather than lone individuals.

Many of these developments are funded internally, with staff often donating significant amounts of their own time. An increasing body of aca-

demics are reporting substantial use of their SL developments and successes in teaching and learning activities. Measuring the usage of these developments tends to be through raw visitor statistics or informal feedback, though a few academics teaching in SL use more rigorous evaluation techniques.

Academics who have successfully developed in SL report that their host institution and technical services are largely supportive, though with the

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latter there are often problems with firewalls, PC capability and enabling voice functionality. Academics report a wide variation in reactions to SL from colleagues, ranging from interest and curiosity to suspicion and 'hatred'.

The Eduserv Foundation survey showed that academics developed a wide range of SL activities spanning teaching, learning, research, performance, construction and student presentation and demonstration.

However, though use of SL in UK higher education (and, to a lesser extent, further education) is growing, many academics are not committed to it in the long term, being aware of its deficiencies and open to moving to alternative virtual environments, especially open source and more localised versions, in the next academic year or two.

SL in medicine and health

The ALS (Alliance Library System) received a grant of US\$40,000 from

the National Library of Medicine to provide consumer health information services within SL. The resulting HealthInfo Island <<http://slurl.com/secondlife/Healthinfo%20Island/128/128/0>> contains a variety of displays, information boards, surveys and other informative material from many health and medical organisations. A recent collaborative event on the island discussed the research evidence in stroke rehabilitation and survivor perspectives. The final project report³ details many of the features, and collaborative partners, of the island.

In Spain, teenagers can 'speak' to a doctor within SL, using the advantage of anonymity to discuss embarrassing conditions.⁴ This particular application of SL is not without its critics, who argue, for example, that

the root cause of teenagers not attending surgery should be addressed, and that the doctor often cannot give an accurate diagnosis of a patient he or she cannot see.

The SL Institute for Clinical Education <<http://slurl.com/secondlife/Aido%20Wedo/228/83/39>> is being developed by the Department of Medical Education at the University of Illinois at Chicago. This SL area is used to train medical students and physicians, and explore the educational applications of virtual environments. Meanwhile, in a password-protected area of SL, Dr Peter Yellowlees, Professor of Psychiatry at the University of California has created a simulation⁵ of schizophrenia so non-sufferers can experience (to a certain extent) the condition.

The Medical Ethics Park <<http://slurl.com/secondlife/Odaesan/24/224/0>> contains information on medical ethics around the world, and a meeting place for ethics committee members. Meanwhile, the London Oncology Clinic Island <<http://slurl.com/secondlife/Cancer%20Innovation/137/65/29>> is a recreation of a real-world clinic. People can walk in, look around, and read various information on the 'latest cancer treatments', for example.

He@lth Information on the Internet

SL can be used to engage with older people and people with physical disabilities, and help them combat social isolation and loneliness. A recent video interview of a SL user with cerebral palsy, describes how he runs a dance club in Second Life called Wheelies <<http://jeremylundberg.blogspot.com/2006/11/second-life-excellent-review-from-cbc.html>>. The technology also

[Imperial%20College%20London/150/86/27/](http://www.imperial.ac.uk/Imperial%20College%20London/150/86/27/) in SL which will provide experiential, diagnostic and role-play learning activities supporting the teaching of patient diagnosis, investigation and treatment. A 'virtual patient' has been implemented in this virtual hospital,⁷ a randomised controlled trial is currently taking place, aiming to compare the learn-

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exists (though not yet in mass-market form) for paralysed people to use SL to meet avatars, communicate, explore and carry out other functions without the need of a carer or other person <<http://news.sky.com/skynews/article/0,,30200-1294720,00.html>>. As more internet-based services are connected to or made accessible from within SL, so this technology may give back some independence and control to severely disabled people.

In examining the educational possibilities of user-created virtual worlds,⁶ David Antonacci and Nellie Modares from the University of Kansas Medical Center introduce some of the educational potential of

ing gains of participants in two groups given the same respiratory emergency case, one in an interactive e-module and the other using game-based activities in the respiratory ward in SL.

There are many other medical and health information services within SL. Again, descriptions of these are a poor substitute for visiting, exploring and interacting with them. The number of health and medical developments (and teaching and learning) within SL will probably increase over the next few years. Factors in this rise include the proliferation of broadband, improvements in PC and virtual world capabilities, the costs

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simulations such as SL. The paper includes a reference to their use of SL role play to provide medical students with practice in physician/patient encounters together with a sample video in which they use text chat to simulate the dialogue between the healthcare team and a patient and spouse.

Several health and medical islands and buildings were developed by the UK education and health sectors. For example, the University of Plymouth Sexual Health SIM <<http://slurl.com/secondlife/Education%20UK/18/36/22>> is a public education and outreach project, with a variety of interactive displays and tools.

Meanwhile, the Faculty of Medicine at Imperial College London have developed a 'virtual hospital' <<http://slurl.com/secondlife/>

of formal education, and more 'real world' issues such as the rising cost of large numbers of people collectively travelling to a centralised teaching location and the resulting carbon footprint.

However, some of the long-standing issues concerning health and medical information, services and advice are also applicable to virtual environments. How does the person behind the visiting avatar know the health or medical information is accurate? Who, or what, is providing the information? Is it up to date? Is it more suited to a visiting patient or doctor? These issues, long-grappled with by web-based services such as OMNI (now part of Intute: <www.intute.ac.uk>) are yet to be seriously considered and addressed by virtual environments such as SL.

Writing Style for Print vs web

Jakob Nielsen's Alertbox, June 9, 2008 <www.useit.com/alertbox/print-vs-online-content.html>

Writing for print as compared to the web requires a different style which can be summarised as: 'Linear vs non-linear. Author-driven vs reader-driven. Storytelling vs ruthless pursuit of actionable content. Anecdotal examples vs comprehensive data. Sentences vs fragments'.

While SL provides a smorgasbord of information and communication opportunities, the caveat 'reader, beware' still holds true for visitors to this virtual world.

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