eduserv

An update of the July 2007 "snapshot" of

UK Higher and Further Education

Developments in Second Life

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1. Introduction

1.1 Purpose

This report summarises an investigation into the use and uptake of Second Life (SL) by UK Higher and Further Education. The research has four main goals:

1. to determine the "state of play" of SL developments within the Higher and Further Education sector
2. to discover how these developments are supported, in terms of time, funding and other resources
3. to explore the functionality of these developments, i.e. which types of media or interactive service they incorporate
4. to establish how "busy", or well-used, the developments have been and discover any impacts resulting from their implementation and use

Initially, the work set out to take a global perspective, as at the outset of the research there were only a small number of UK academic SL developments. However, as the work progressed a considerable number of UK Higher and Further Education SL activities were discovered (see appendix), and this report focuses exclusively on those.

It should be borne in mind that UK education activity is not restricted to just universities and colleges. Support services such as the Scottish Further Education Unit and the JISC Regional Support Centres are developing facilities in SL, as are various private learning institutions e.g. the Bath School of Languages, while several schools have been active on the Teen Grid.

1.2 Methodology

Initial searches for information on the use of SL uncovered a great deal of discussion and speculation concerning its potential, but disappointingly few examples of actual use in teaching and learning. It was decided that this report should be evidence-led, based on real data, in order that it presents a true "snapshot" of SL use at this time, rather than simply adding to the conjecture.

Consequently, searches for examples of SL use in education were undertaken in February/March 2007:

- on the web in general
- in specialist domains, e.g. .ac.uk
- across the blogosphere
- across some individual university and college websites
- across peer-reviewed literature
- in SL itself
- through mailing lists

These searches did not reveal many examples of SL use in UK education, although there were a substantial number elsewhere, especially in the US. A pilot email questionnaire was constructed and refined in view of these findings.

As a result of the questionnaire, the researcher interviewed several people associated with UK academic SL developments, within SL itself. However, these interviews did not reveal much information due to:

- the reporter's inexperience, at the time, with interviewing in a virtual environment
- the large amount of time required to type questions and responses
- various in-world distractions and technical problems

Furthermore, some interviewees revealed a lack of usable information only after the reporter had spent time with them in-world.

A second batch of searches took place in June/July 2007, using the previous media in addition to:

- enquiries through Facebook contacts
- postings on more mailing lists

Considerably more examples of SL activity in UK Higher and Further Education were found in this batch. Developers or coordinators involved in these examples were sent the questionnaire. Some chose to fill it in, while others described their development work in different formats.

Several people did not respond in time, or indicated they did not wish to respond until their SL construction was at a more advanced stage. Consequently, the data and examples in the initial report formed an (incomplete) snapshot of SL developments in UK Higher and Further Education in June/July 2007.

In August/September 2007, the report researcher re-contacted people who submitted information for the original snapshot, asking for any update on their activities. Many replied, and the responses fell fairly evenly into two categories:

- no update, or significant update, largely due to a lack of academic presence or students who would use structures built in SL, due to the time of year. For example:

  "Because of college holidays there is no further progress at the moment."[1]

- updates and progression carried on through the summer, using the extra time gained by not teaching

Original (July 2007) and updated (September 2007) responses are reproduced in this report.

1.3 Further "snapshots"

The original (July 2007) snapshot and the September 2007 update have revealed a significant body of SL activity in UK Higher and Further Education.

The Eduserv Foundation have decided to track this activity, through further snapshot reports. These reports will be made public around March, and September, 2008. Both will have a larger focus on the "impact" of using Second Life as, by then, several of the early adopters of this technology will have used it in formal education.

All of the snapshots will be available on the Eduserv Foundation website[2].

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[1] Sandra Taylor, E-Learning Manager, Ashton Sixth Form College, nr Manchester

On an ongoing basis, Eduserv are looking for examples of SL being used within UK universities, colleges and schools, i.e. the UK education sector. This includes, but is not limited to:

- initiatives listed or described in this report which have progressed in some way
- institutions constructing their own presence
- departments also constructing their own presence
- individual academics running courses within SL
- support centres active on the grid
- departments or academics experimenting ("testing the water") with SL before committing to a full-scale development
- researchers conducting research within SL
- students developing and exhibiting course-related work on the grid

We are also interested in developments that are not yet publicly accessible.

Please contact the snapshot researcher - john@silversprite.com - if you are undertaking one of the aforementioned activities and are in the UK education sector. Thank you.

2. Activity within UK Higher and Further Education

Some institutions do not appear to have a presence in SL. For example, in response to a general email enquiry, a contact at Bristol University replied:

> "I think it's been vaguely mooted by the public relations people … There are one or two learning technologists trying it out."[3]

Another, at Surrey University, reported that:

> "The University (as an institution) doesn't. Some individuals do, as research sites; Aleks Krotoski, for instance."[4]

However, as the survey revealed, a lack of response from institutions does not necessarily imply they have no SL development activity. Individual departments, groups, academics and students are often establishing their own offices, buildings or islands on the grid, sometimes with the approval and knowledge of senior institutional management, and sometimes without.

This situation is complicated by academics in different university strata (researchers, lecturers, professors, management) often being unaware of SL activity –be it planning, development or the use of in-world facilities –within their host institution. While some SL developments are loudly promoted within their host Real Life (RL) institutions, many others have a low profile. In addition, not every location and development within the grid can be found by searching within.

Areas can also have entry restricted by the owner. This makes it easier for a lone academic, using an avatar and name, to create an SL presence which is virtually "invisible" to others. Many of the staff and researchers at the institutions with an SL presence (listed in the appendix) were unaware of any such activity.

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[2] Snapshot reports available from http://www.eduserv.org.uk/foundation/studies/slsnapshots
[3] Martin Poulter, Bristol University
[4] Nigel Gilbert, University of Surrey

Survey responses were banded into nine, slightly overlapping, categories. It should be noted that some institutions fall into several categories. For example, institutions which develop their own SL "campus" often have individual structures for departments, projects and research. Edinburgh University is a prime example [Virtual University of Edinburgh, 2007], having a considerable variety of activities: as well as premises for departments such as Management, courses are run, a virtual campus has been established, and non-academic departments such as Marketing are taking an active interest.

2.1 Thinking or grouping together

The increase in the number of press and academic reports on SL use in education is evidently having an effect in some institutions; this was evident in several responses, such as:

> "Just this last month I have been asked to think about how we might become part of the Second Life community."[5]

Individuals, groups and consortia regularly appear on mailing lists, groups and other media appealing for information or contacts as they investigate SL. For example, Colette Lynch posted on the JISCmail Secondlife list in mid-September:

> "I run a small unit within the Belfast Metropolitan College which is one of the largest FE/HE colleges in the UK. My unit, mallni[6], produces rich media content for Broadband www.mallni.com. I am very keen to explore the opportunities which second life offers for our Foundation degree multi media students as a way of enhancing their digital media skills by involving them in active projects."

At the same time, individuals in institutions such as the University of Greenwich are investigating the usefulness of SL in their teachings and logistics:

> "Tony Ackroyd is a colleague in the school of Computing and Mathematical Sciences who is looking into using Second Life for education."[7]

> "We are holding meetings in it using one of our partner college islands."[8]

Within SL, it is easy to establish groups of like-minded people around a common charter, goal, shared interest or development. Groups of students, staff and researchers from institutions such as City College Birmingham, Imperial College, Oxford University, Sheffield Hallam University, the University of Wales and the University of Sunderland are active within the SL environment. Some groups seem to be established mainly for discussion, while others are dedicated to designing and developing institution-related structures within SL.

2.2 Actively planning an SL presence

Several academic units are at the stage of planning what they will build in SL. This usually involves looking at what similar departments, or other universities, have constructed; for example:

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[5] Jon Sykes, Glasgow Caledonian University

[6] Mallni: http://www.mallni.com

[7] Ryan Flynn, University of Greenwich

[8] Simon Walker, University of Greenwich

"We're noting other law school implementations (e.g. New York Law School's Democracy Island, Harvard's Berkman Island, etc.), learning from that, but wanting to create a form of education that's quite different from RL forms & genres." [9]

A number of colleges responded, indicating that they are in the planning rather than the development stage:

"We are not using SL at the moment but I am looking to use it, initially, for marketing purposes but eventually to provide virtual lessons. My problem is that our target audience is 14-19 year olds so I think I am going to have to go to teen grid … I have got over the first hurdle of having it made available on our network." [10]

An academic from Hull University is cautiously developing a building in SL to assess the usefulness of the technology:

"The purpose of our current SL development is purely exploratory. We want to see what we can do with/in SL by being in-world. We know we'd like to establish a presence for our department and campus (but not necessarily the whole university) in the coming months, but it's more important to understand what SL is all about than just building it and hope they show up." [11]

At Elmwood College in Fife, staff are thinking laterally about the possibilities of SL with respect to the courses they run:

"We have a few outline plans but haven't tied down a particular project to start with. Some ideas we are playing with include:

1. Golf course design - we do it in real life and it could be an interesting one to develop in 3D.
2. Sports event management.
3. Marketing exercise - SLs economy could make this a more interesting exercise than a paper-based, theoretical approach.

We are currently using a piece of land that I own to build on but don't have anything that is actively being developed. I would like to have a pilot under way by mid-way through the academic year" [12]

At Leicester University, an SL facility (the "media zoo"), based on an existing online information medium, has been developed [Media Zoo, 2007a][Media Zoo, 2007b]. This online resource has been nominated for the THES ICT project of the year awards[13].

2.3 Research within SL

SL is, itself, something that can be studied within a wide range of disciplines, including computer science, design, media, literacy, education, sociology and psychology.

Several research and PhD students are active within SL. For example, Mark Childs [Childs, 2006] at Warwick University is carrying out part-time PhD research into learners' experiences of

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[9] Paul Maharg, Law Department, University of Strathclyde
[10] Sandra Taylor, E-Learning Manager, Ashton Sixth Form College, nr Manchester
[11] Toni Sant, School of Arts and New Media, University of Hull
[12] Pauline Randall, e-learning Development Co-ordinator, Elmwood College
[13] Gilly Salmon, Leicester University

mediated environments. In Glamorgan University and the University of Wales, Cameron Mitchell [Mitchell, 2007] is using SL as a means to explore terraforming as part of his BSc placement year.

At the University of Surrey, Aleks Krotoski [Krotoski, 2007] is "exploring the social networks of virtual world Second Life, which displays unique, emergent social properties reflective of offline social life" as part of her PhD examining the relationship between communication patterns and group processes in the diffusion of information through an online community.

A team from the University of Nottingham set up an office in SL as part of research into "griefing" (in-world bullying). Around 50 avatars/people took part in interviews, the sessions monitored in RL by an occupational psychologist [Exchange, 2007].

Meanwhile, Janna Al-Bochi [Al-Bochi, 2007] is writing a Masters dissertation at the CASS Business School in London about SL and real world consumers' perceptions of branding inside the virtual world, trying to answer the question "Do virtual interactions lead to real-life consumer behaviour?"

At the University of Wolverhampton, the leader of the Learning Technology and Pedagogic Research Cluster is:

> "Currently supporting a member of staff to engage in a research project based upon the use of SL as a learning and teaching tool in a Digital Media UG programme."[14]

At Derby University, research into the use of SL by people with specific conditions is being undertaken:

> "Within our research and teaching facility on SL-Labs we are also conducting research in the virtual world that is investigating the unique affordance of multi-user virtual environments for people with communication difficulties, especially people diagnosed with differing degrees of severity of Autism and Asperger's Syndrome."[15]

Staff at Reading University :

> "...have a grant from our University's Teaching and Learning Development Fund. With this we are developing a Community of Practice for staff and students from across our university to explore the learning/teaching potential of Multi User Virtual Environments including Second Life."[16]

At Staffordshire University, two staff will be carrying out learning experiments within SL:

> "The project will involve the development of a meeting area for volunteer learners and, initially, myself and a collaborator. We will devise (preferably in conjunction with the learners) a series of SL learning/research activities. Activities will be timed and some will be individual, others collaborative. Once completed, those carrying out the activities will work with those who designed them to reflect upon the whole process and review the experience. The outcome from this will constitute useful information about how best to utilise the SL environment to supplement/complement learning and teaching."[17]

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[14] Crispin Dale, University of Wolverhampton

[15] Simon Bignell, Department of Psychology, University of Derby

[16] Shirley Williams, University of Reading

[17] Glynn Skerratt, Faculty of Sciences, Staffordshire University

At the University of the West of England, research facilities for students are being developed on the grid:

> "We are aiming to build a Research Observatory in Second Life for our research students. We have just announced internally a design competition so that students can put forward their ideas about how we could use our space in Second Life. Later on in the year we will design collaborative tasks that groups of students will complete in Second Life. The tasks will seek to maximise group creativity and will encourage students to be enterprising and to engage in discovery, synthesis and fact-finding missions. The tasks will be structured and facilitated by academic staff but will essentially be learner-centric." [18]

And at the University of Portsmouth, a project using SL [Virtual Worlds for Student Learning, 2007] is underway to assess "the strengths and weaknesses of Virtual World simulations to support academic teaching/student learning."

Imperial College London evaluated SL for teaching medical students:

> "The Faculty of Medicine decided to run a pilot project in Second Life aiming to evaluate the effectiveness of collaborative 3-D environments in teaching and learning. The Virtual Hospital developed by the Faculty provides an immersive 3-D simulation of the real South Kensington campus and the teaching hospitals. On the first floor, a Respiratory Ward has been developed and different patient cases have been designed. Students can walk around different wards and go through different cases covering: Asthma, Pneumothorax, COPD and Foreign Bodies cases." [19]

At the University of Huddersfield there is a project underway "to pilot and evaluate the use of the Second Life environment with Foundation Degree e-learning and MSc Multimedia and e-learning students, beginning in the current academic year and running through to 2008". This is part of a larger plan to "evaluate Second Life as a teaching and learning tool, in order to help inform future decisions about whether or not to establish and maintain a University presence in this environment".

Section five of the plan [Huddersfield University SL project plan, 2007] details nine members of staff across the university assessing the use of SL, including several who are "trialling its use in our curriculum area". By September 2007, the project had progressed and Cheryl Reynolds provided an update:

> "We've made progress with the project and are holding our first group meeting in SL with an MSc Multimedia in Education group this evening. The module they're working on currently is Theories of Interactive media so we'll be relating our activities in Second Life to theories of learning, assessing what the underlying pedagogies might be. We'll also be evaluating it in terms of theories of interactivity, semiotics and the formation of online communities. We feel that their input will help us to evaluate the efficacy of SL as a teaching and learning tool, whilst providing them with a first look at the platform, so that they can make a considered decision about whether or not to employ it within their own working practice.
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> In particular, we'll be focussing on the affordances of SL in comparison with more traditional Chat tools as well as considering the potential benefits of 3D modelling, using a spider planner created by Eloise Pasteur to build some 3D mindmaps. Also we'll

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[18] Manuel Frutos-Perez, Deputy Head, E-learning Development Unit, University of the West of England
[19] Maria Toro-Troconis, Imperial College London

be employing blogs with RSS feeds into SL and links from objects in SL to wikis as ways for students to record and reflect on their learning." [20]

In September 2007, Staffordshire University added a new project to its portfolio of SL activities:

"I now have another small 12-month project in SL funded through the HE Academy Subject Centre for Geography, Earth and Environmental Sciences. It's called Second Life Andragogy and Pedagogy Project - an Evaluation and Review. Or SLAPPER for short.

The aims are:

1. to evaluate means (within the constraints of learner orientation and hardware) by which SL can best currently contribute to the delivery of our environment / sustainability off-campus eLearning awards
2. to identify and prioritise the main pedagogic/androgogic advantages and challenges
3. to review and report on the learner experience of using Second Life as a learning environment by way of their participation in a number of learning/research-orientated projects and/or tasks in-world - such as webquests, for example - and their subsequent reflection on methodologies, monitoring, feedback and potential assessments associated with these activities
4. if appropriate, to produce an implementation plan that would facilitate inclusion of SL learning activities into delivery of current awards" [21]

2.4 Developing tools and simulations within SL

A minority of academics are using SL primarily as a platform to develop tools. Dr Peter Miller introduced his work in July 2007:

"I am currently developing a series of visualization tools that I intend to use in cell and molecular biology lectures and make available in-world for informal student use from September 2007 onwards. They currently comprise two workstations with a strong focus on providing an end-user building capability, one in the context of protein domain structure, the other as a means of animating regulatory networks in gene expression." [22]

This had progressed by September:

"My focus at the moment is on use of SL to develop machinima with the build also available as an option. Eloise Pasteur [Pasteur, 2007], who is mentoring me, blogs on the subject."

At Edinburgh University, the management school has developed a management simulation on the grid:

"The main progress in the management school is that we now have an operational factory simulation which will be used for teaching Operations Management to groups of students. Each member of a group takes on a role, for example scheduler, purchasing manager, and they manage as a team the factory which runs 24 hours per day in 6 times normal time. At the moment most of the work is ironing out technical glitches,

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[20] Cheryl Reynolds, School of Education & Professional Development, University of Huddersfield

[21] Glynn Skerratt, Faculty of Sciences, Staffordshire University

[22] Peter Miller, Biological Sciences, University of Liverpool

but it should go live with real students in about five weeks time (End October 2007). Visitors can find it on the island VueNW." [23]

2.5 Staging an exhibition

SL has been used by several groups or departments for staging one-off exhibitions or displays. For example, design students in Goldsmiths, University of London, held a virtual degree show, which took place in an SL replica of the venue used for the real show [Design degree show on Second Life, 2007], while students from the nearby London College of Fashion contributed images from their recent showcase to an SL structure. Leeds Metropolitan University also held an exhibition:

> "Over 150 people have visited our end of year degree show exhibitions on the LeedsMet FAS sim." [24]

Art and design staff, in their responses, are keen to "test the boundaries" of what they can achieve in SL. For example, Julia Gaimster[25], who produced the SL London College of Fashion building, replied:

> "We are not aiming to replicate the college but to create areas that enable creative thinking and activities and we are keen to develop collaborative projects using the space."

And indeed, the college did put on a successful exhibition on the grid, as Julia noted in September 2007:

> "We did manage to stream keynote speeches from the designs on elearning conference to LCF and LCC islands. The LCF exhibition continues to attract visitors over 1660 to date."

Second Scotland was developed by Honours students studying collaborative virtual environments at the University of Paisley. The exhibition, partially based on recreations of famous Paisley buildings, contains famous Scottish products (Irn Bru, shortbread), a chip shop, highland music and a midge.

At Leeds College of Art and Design, the "DDM Collective" are the students from the Design for Digital Media degree. They created a number of structures within their SL island, describing their activities within their Collective blog [DDM Collective blog, 2007].

2.6 Department or centre presence

One aspect of SL is the possibility to develop autonomously on the grid. This presents opportunities for individuals, departments and centres to develop an autonomous presence, or one in collaboration with another partner, that does not need to be "inside" the island of the host institution. However, this can present problems in terms of institutional "branding", publicity and authorisation.

Martin Harmer at York College is developing an SL area so he can:

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[23] Shale Bing, Edinburgh University

[24] Ian Truelove, Leeds Metropolitan University

[25] Julia Gaimster, London College of Fashion

"link to more active learning experiences in SL that learners can visit - hope to pilot it with a small group of mature HE students from late September 2007."[26]

Derby University also has a building in SL, which is being developed by Simon Bignell (a lecturer in Psychology with his own in-world office), containing teaching and research labs.

At Bromley College, Clive Gould developed an interactive area on the grid for prospective students of his computing courses to use:

"Over the years I have come across applicants for the courses who did not have prior experience of programming. This year I have been able to recommend the sim to such applicants. There they can learn LSL (Linden Script Language) programming in a fun environment and see if they enjoy programming and are good at it, before committing themselves to an HE course involving a lot of programming."[27]

In the college, lunchtime sessions in SL are hosted for staff and students:

"At college we now have one computer room equipped with SL compatible graphics cards, and so I shall now be able to run lunchtime SL classes in order to induct both students and staff. Once my students (FE and HE) have completed these sessions, I can then begin to introduce them to the facilities and resources that I have put in place at Shimmer Island in support of their Virtual Learning."[28]

Several other academic departments have staked a presence on the grid. The Faculty of Technology at the University of Portsmouth has an SL presence, and the Department of Information Science at Loughborough University is developing its own island. Norwich City College has a building on the UK Education Island, while Warwick University Maths Department has its own island.

2.7 Using SL to support a course or module

The tools for creating meeting and communication facilities in SL offer opportunities to develop learning support facilities, especially when the learners (in the real world) are in disparate locations. It is for this purpose that several universities have carried out substantial development work in the last few months.

The Open University has three islands: SchomeBase and CetlMent on the main grid, and Schome Park on the teen grid. The Open University has already built up considerable experience in operating various classes and distance learning facilities using SL:

"We have several courses formally adopting SL as a teaching environment now … sessions on CetlMent have tended to be scheduled tutorials."[29]

The university is preparing to expand on its use of SL over the next academic year:

"With regard to our COLMSCT work, we're embedding SL into a series of courses formally from Feb 2008 so we are busy planning, preparing and building in relation to that at the moment. These are a range of courses across Technology and Maths &

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[26] Martin Harmer, ILT manager, York College

[27] Clive Gould, Bromley College

[28] Barry Spencer, Bromley College

[29] Jacqui Bennett, Open University

Computing but what is exciting is that we are going to be formally and publicly offering SL as a tool and environment for these courses and we're looking hard at integrating the use of Sloodle effectively to mashup with the VLE." [30]

Sheila Webber from the Department of Information Science at Sheffield University has developed a grid presence to support a range of student activities in this coming academic year:

"An island is on order and has been billed, namely "Infolit iSchool". "Infolit" is for information literacy, while "iSchool" is the name that some of the US library / information schools call themselves when they don't want to call themselves library schools any more.

The island is funded by CILASS (Centre for Inquiry Based Learning in the Arts and Social Sciences) and the focus will thus be on IBL, and also on information literacy. 1st year BSc students (in a core module Information Literacy) will be carrying out inquiry into residents' information behaviour (through interviews), and this will contribute to their reflection on the nature of information and information literacy in first and second life. Their principal assignment will draw on this work in part (it is a reflective report). Taught Masters students will also be invited to participate in some optional activities of a similar nature, plus I intend to arrange SL library tours for any interested students.

The use apart from this will evolve through the year - some uses are obvious (e.g. for our semester 2 Educational Informatics class) - but the main focus will be on IBL and I hope that some students will use SL as a focus for UG or PG projects/dissertations. Some colleagues are interested and will be participating and I will be presenting to people in other departments as part of the CILASS programme.

Additionally, the Centre for IL Research will have a base there. We have our 4th discussion in the Eduserv CILR office this evening, and I intend continuing the series and expanding to take in a couple of mini-conferences on the island, focused around IBL and IL." [31]

In the same subject area, the Department of Information Science at Loughborough University are progressing with developing on the grid:

"We will have our departmental campus up by Christmas. This will be used in the teaching of metaverse skills in semester 2, as part of a module on computer games for leisure and serious purposes." [32]

Leeds Metropolitan University has also started to run "organised classes", which have:

"created flurries of activity, with between 5 and 20 avatars attending." [33]

Meanwhile, the University of Edinburgh has already used Second Life to support several MSc courses, including Business Building, Design and Digital Media, and e-Learning.

At Derby, SL is used in the teaching of 30 psychology students:

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[30] Jacqui Bennett, Open University
[31] Sheila Webber, Department of Information Studies, University of Sheffield
[32] James Dearnley, Department of Information Science, Loughborough University
[33] Ian Truelove, Leeds Metropolitan University

"The SL-Labs project at University of Derby is up and running encouraging Derby psychology undergraduates to engage with the unique attributes of a 3D virtual world to learn about basic Psychology skills. We are currently taking a group of 30 psychology undergraduates into Second Life on a supplementary module option of our Psychology Skills module. Here students learn core psychological skills including experimental design, essay writing, presentation preparation, critical thinking skills, and plagiarism avoidance and referencing." [34]

The design facilities of SL allow students to actively develop within the grid. This provides opportunities for SL use in subject areas such as architecture:

"I am in the process of preparing a class 'Designing in Virtual Worlds' to be offered in the next academic session [2007-2008] …The class will be almost entirely in SL, and it's about designing and building (after all, these are architecture students!). Students will be creating their own designs in SL, which I hope will be a mix of designs that could be built in RL and those exclusively for the virtual world (we'll see how the class goes). There will naturally be a bit of critiquing existing work in SL." [35]

The area created by David Jukes (business school at Nottingham Trent University) and an external person seeks to develop commercially viable courses and training that connect with outside bodies and organisations via the business school. David explained in July 2007:

"The basis for this work was a module we are developing online called the Inclusive Teaching Project. This has a role in SL whereby we look at aspects of the module that would be limited elsewhere by time and physicality limitations and ethics." [36]

Two months later, David returned with a substantial list of SL developments:

"We have set up a simulation nutrition clinic for sports science students. This uses goal based learning and the ability to undertake research and further questions helps with differentiation and deeper learning.

We are building a centre for University mediation services to promote what they do and act as a tool for mediators and parties.

We have opened SLEARNS SL educator and research network space; this is free space for educators from any University or College to use. This includes an area within the building and the use of a sandbox and teaching resources. A university from Mexico have taken up the entire 1st floor and are working on a project in SL on media and promotion. They are using our social hub as a tool to do this. Our social hub and the avatars that own / occupy / work at these places provide a narrative for teaching purposes. Finally we have opened a DJ Incubator and an open access hub for students to use socially." [37]

At Imperial College London, Second Life will be used by medical students in the 2007-08 academic year:

"The plan is to provide access to half of Year 3 students to access a specific case in Second Life while the other half will access an e-module in WebCT. We'd like to find

[34] Simon Bignell, Department of Psychology, University of Derby
[35] Scott Chase, Department of Architecture, University of Strathclyde
[36] David Jukes, Business School, Nottingham Trent University
[37] David Jukes, Business School, Nottingham Trent University

out what type of features makes the learning experience more engaging and memorable. This pilot will start in January 2008." [38]

The Institute of Education in London is looking at the teaching aspects of SL:

"We've got a project looking at teaching and learning in SL, so will be teaching some elements of MA modules in SL in October 2007." [39]

Another business school lecturer, this time in Newcastle University, is "working with Information Systems and Services to create a virtual collaborative learning environment in Second Life within which her e-business students can produce coursework" [Berry, J., 2007].

SL educational activities are not just confined to "traditional" academic disciplines. Plymouth University are rapidly creating an in-world facility to provide and acquire information about the sexual health of young adult users of SL [Boulos, 2007b]:

"We will collect data from users as to their information needs and their response to the program. We will track the development process systematically and use the lessons learned to suggest best practices for delivering sexual health programming in multi-user virtual environments (MUVEs)."

The SL world itself appears on the curriculum of several courses, such as the computer games and animation technology degree course at Anglia Ruskin University [Get a degree in the game of life, 2006]. In their course, SL is used as one of several information and communications technology tools:

"This September (2007) we will start to run our first course focusing on SL. 'Virtual World Environment Applications' is a 15 credit level 2 module available for Computer Science and Computer Gaming students. The course description is as follows:

This module will introduce students to a Virtual World environment such as Second Life where they will be able to experience and investigate the opportunities afforded by the environment. Aspects covered may include programming in the environment's native language to handle actions and data in world and its transfer to and from off-world servers, 3D modelling and building using in-world tools, animation, audio for use in-world and graphics tools to provide textures for their in-world creations." [40]

2.8 Supporting developments across several departments

One interesting development over the summer of 2007 is that several universities have "spread" their SL developments from one department, or even one lone academic, to several departments, groups or courses.

For example, Crispin Dale from the University of Wolverhampton gives an update of his university's activities:

"Over the summer we've had some further developments with our use of SL at the University of Wolverhampton. As part of the Learning Technology and Pedagogic Research Cluster I lead at the University, a SL Mini Research Cluster has emerged comprising colleagues from the School of Art and Design (SAD) and the School of Sport,

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[38] Maria Toro-Troconis, Imperial College London
[39] Andrew Burn, Institute of Education, University of London
[40] Mike Hobbs, Anglia Ruskin University

Performing Arts and Leisure (SSPAL). Denise Doyle in SAD has led the development of our SL island and will be using the island with her students this academic year.

Paul Brownbill in the drama department from SSPAL has been awarded funding through the Theatron project [41] to explore the use of SL in his subject.

Two colleagues and I will be analysing the use of SL within a marketing module which we teach this semester, for developing employability skills with leisure, tourism, hospitality and event and venue management students." [42]

Some academic developments on the grid also support academics and courses in other institutions. Daniel Livingstone, from Paisley University, co-chaired the education workshops held at the annual Second Life Community Conventions in San Francisco [Livingstone, 2006] and Chicago [Livingstone, 2007]. He describes developments at his university:

"We have an island (virtuALBA) which is still in development, but which hosts a share of the Eduserv Foundation-funded Sloodle project (along with virtual neighbour and collaborator, San Jose State University). The island currently also hosts an exhibition, university information centre as well as a corner for the University of Aberdeen medical school and a small area in use by the University of Strathclyde (who now have their own island).

Last year we taught a class (Collaborative Virtual Environments) which used a range of technologies including SL - and which should be repeated this year." [43]

European funding in particular is a key driver to collaborative projects between academic institutions from different countries. The University of Reading and King's College London are involved in one such project:

"The MUVEnation project, funded under the EU COMENIUS scheme, will be starting shortly. Use of Second Life will contribute a part of this project. The project aims to develop a European peer learning program for teacher training for the use of "Active learning with Multi-Users Virtual Environments to increase pupils' motivation and participation in education"." [44]

At the University of Derby, a facility has been built to support a subject area for academics from other institutions:

"We have office space on Education UK Island that acts as a central hub for activity for Psychological research. Also, we have a successful Second Life group 'Psychological Research' that has a thriving community membership of over 150. Groups for research in Autism and ADHD are now being used by the University of Derby as well." [45]

2.9 Building a campus-wide presence

Several universities are developing an official version of their campus within SL.

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[41] Theatron project:
http://www.english.heacademy.ac.uk/explore/projects/archive/technology/tech23.php
[42] Crispin Dale, University of Wolverhampton
[43] Daniel Livingstone, University of Paisley
[44] Shirley Williams, University of Reading
[45] Simon Bignell, Department of Psychology, University of Derby

The University of Hertfordshire has a campus which is "a space dedicated to exhibiting the major assets of the university, with a special focus on the Learning Resource Centres" [Virtual University of Hertfordshire, 2007]. Development was ongoing as of September 2007:

"The current status of our Second Life presence is still 'in development'. I'm building the student forum in Second Life before work on the real version starts. We hope to get some feedback from the students on what they'd like to see more of.

We want to create a space where people can go to learn even in the absence of a supervisor / lecturer. It's important that we help students to become self-motivated without involving the fear of failure. We want to encourage communication / collaboration from within a positive learning environment. We'll be conducting some trials in the coming months." [46]

Anglia Ruskin University is in the process of designing its campus:

"We are continuing to develop the Anglia Ruskin Island, but we don't plan on having open public access just yet. However, we will be looking at how we can use this resource with other higher education organisations in the Anglia region. We are in the early stages of spreading knowledge and experience of SL from a narrow base to a wider range of education technologists and e-learning support staff. We see this as an important step to move SL out of a computing niche towards a generic University supported tool." [47]

At Sunderland University, SL campus development is underway:

"Having played around with the platform since November last year, we were granted a small plot within Cybrary City II. This space served as something of a training area for us within SL, building bits and pieces and getting to grips with some scripting. Due to other commitments we have been a little quiet there of late; having said that it has served as a kind of proof of concept to us and we now have much grander plans for our SL presence.

We've recently purchased our own island which will be used initially for remote campus acclimatisation for our new / distant students. Since purchasing the island we have had a steady stream of enquiries from our academics and students wishing to utilise the space for teaching and course projects, which is all very positive. The island is currently closed as we finalise our building plans. We will make announcements in due course about the formal launch of this space." [48]

Coventry University has built a campus, which was launched in a split-world event in September 2007, as part of the Serious Virtual World 2007 Conference [Serious, 2007]:

"Last night the vice chancellor (Madeleine Atkins, who avatar name is Phoenix Watkins) launched the island at a formal launch at Coventry University in a lecture packed with academics and business. In world she cut the virtual tape and set off the fireworks. Many people came to the launch in world as well. We have had a lots of local and national media interest. We also had the first serious virtual world conference outside the USA and it was all streamed into Second Life over the last 2 days.

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[46] Andrew Marunchak, University of Hertfordshire
[47] Mike Hobbs, Anglia Ruskin University
[48] Shaun Allan, University of Sunderland

We have more courses starting to use it now, including transport design, fashion design, theatre studies and an MSc in clinical management. The vice chancellor is delighted with what we have done on the island and this afternoon asked if the film we are doing of the tour of the Coventry University island could be put on the University website over the next few days for new students to see." [49]

As occurs at most SL events in UK academia, various attendees blogged the event, e.g. [Powell, 2007a].

Over the summer of 2007, institutions such as Strathclyde University have moved from an investigative position to one of developing a composite institutional presence on the grid:

"Strathclyde University has purchased an island, to be used initially for the class 'Virtual Worlds for Design' for students on the Architecture and Digital Creativity courses. We hope to make the island available for selected small projects and experiments within the University as we develop Strathclyde's institutional presence in Second Life." [50]

Searches on the main grid map reveal several other islands which are named after universities, such as De Montfort and Oxford, indicative of developments of institutional presences in SL. The latter is taking the approach [Oxford University, 2007] of holding an internal (staff and students) competition to develop the island before it becomes public:

"Oxford University Computing Services has purchased an island in Second Life for the whole of the University to use. There will be areas for teaching, meetings, research, and just generally hanging out - open to all. We're hoping to unveil the island to the public for the start of Michaelmas term in 2007 but before then we need to make it look as good as possible … You will be sent details of the land, you can even take a look at it in Second Life, and you will then need to come up with a design for this communal site. You will be asked to present your design to a panel of judges and if successful you will be commissioned to build it in Second Life on the University's island and paid 500 pounds!"

As of September 2007, this project was still ongoing:

"We've been doing some work on getting structures in place on our island, but we still very much view this as a closed internal pilot project to allow us to explore SL's potential. We have no plans, as yet, to open this up to the wider public." [51]

Edinburgh University is taking a holistic approach to building its campus on the grid, which currently contains several service units (Development and Alumni, IT User Services, Library and Collections) and five schools (Informatics, Education, Management, Medicine, and Arts, Culture and Environment). Developments include facilities for Contextual Theology, a disability office, Geosciences, Divinity and an Informatics forum.

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[49] Maggi Savin-Baden, Director of The Learning Innovation Group, Coventry University
[50] Scott Chase, Department of Architecture, University of Strathclyde
[51] Quote via Alun Edwards, Oxford University

3. Functionality and support

3.1 Meeting places

A key aspect of SL is the ability to communicate with other people (through their avatars) in a variety of ways. Examination of islands being developed by academics shows that most have some kind of mutual seating area, be it outdoor benches (often in a group arrangement so most people can see who is speaking without turning around), or a room (often resembling a RL room) with all the seating facing a speaker.

Some academic developers have made the comfort of their users, many of whom would have little experience of a virtual environment such as SL, a high priority:

> "We have been interested in SL as a meeting place, and so we have been more concerned with the issues of how people conduct themselves in that space, than the creation of artefacts in the space ... The bulk of the effort was in configuring a 'comfortable' space for people to meet and interact." [52]

3.2 Popular media

Certain specific media are proving popular, being installed in their SL area by a number of academics:

- many of the UK Higher Education constructs incorporate video screens. For example, in the University of Edinburgh Management School, prospective students can watch a video about Edinburgh and the university
- nearly as popular as video displays, among the respondents, are facilities to present PowerPoint and slideshows within SL
- XML and RSS feeds have been installed by several academics, allowing users to access the latest content from specific websites
- visitor counters, and sensors to log avatar presence
- in-world custom Intute[53] search engine
- interactive message board or whiteboard
- links to websites are present in most academic SL developments. This is often presented as a card or mock laptop. For example, the University of Plymouth installation has a "laptop displaying a page from Contraception Education - clicking the laptop in-world will launch the corresponding web page"
- direct links to academics, e.g. pressing a button sends an IM or email to a member of staff
- Freeview TV, usually surrounded by an auditorium in the same way as video-streamed meetings, is available in a few locations

The Intute search engine is particularly interesting. Intute is the current collective name for the group of subject-specific net resource catalogues that previously formed the eLib programme subject gateways and the Resource Discovery Network. Christopher Stephens, an Intute developer, has created a mechanism for searching across these catalogues on the grid:

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[52] Hamish MacLeod, Edinburgh University
[53] Intute: http://www.intute.ac.uk

> "I made a couple of Intute kiosks for retrieving the latest records by subject, and for launching pre-defined searches at the Intute database. I've made these kiosks freely available through a couple of teaching gadget stores, and via the shoponrez website (under the Open SLEDware banner). The search terminals have been used in a couple of SL projects so far. For example, a potted search kiosk was used in the University of Plymouth's Sexual Health SIM. This terminal showed a good number of hits to the database." [54]

Some academic developers, such as the Open University, put a heavy emphasis on functionality that "captures" various media from an in-world session.

> "We keep chat records for all tutorials as well as taking movies/snapshots to record so we can complete evaluation activities within the OU Ethics requirements ...We're also in the process of building a Sloodle implementation so we can link activities on CetlMent directly to activities in the OU VLE (which is a Moodle implementation)." [55]

> "We have developed a tool called the SLog which allows you to create notes in-world which are saved to your SLogBook (web page) - you can also take snapshots in-world which are also saved to your SLogBook." [56]

3.3 Other media

A mixture of "off-the-shelf" media, and functionality scripted by academics and hired coders, can be found in the various islands and buildings under development. These include:

- e-books
- a Flickr browser
- a synonym cloud generator
- an answer phone
- interactive sculptures
- museum and gallery recreations
- a visitor survey in-world, where user feedback is then sent via e-mail to an individual or project team

3.4 Future functionality development

A factor in the suitability of SL as a medium for some potential adopters is whether tools currently in use or in existence can somehow be integrated into the SL environment. For example, the Law Department at the University of Strathclyde considers that:

> "In addition we want to embed the SIMPLE [2007] platform and tools we're working on within a 3D environment; and we're not sure that SL is the appropriate specific environment for that yet." [57]

Again, the Open University is keen to integrate the in-world aspects of SL to other materials associated with its students:

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[54] Christopher Stephens, Intute developer, Oxford University
[55] Jacqui Bennett, Open University
[56] Peter Twining, Open University
[57] Paul Maharg, Law Department, University of Strathclyde

> "The holy grail will be when we can link directly to e-portfolios and record assessments."[58]

By offering the Second Life client on an open source basis Linden Lab has encouraged greater innovation in the applications that interface to the Second Life grid. For example, Katharine Berry [Berry, K., 2007] has produced an Ajax-based SL client that works, to varying degrees, in different browsers without the need for the standard SL viewer. Such access has implications for developing information transfer between SL and other net-based applications. Meanwhile, at the Open University, integration with the popular social network Facebook is a possibility:

> "We are also looking at international collaboration and issues to do with spanning timezones - in this context the integration of Second Life (which is synchronous) with other Web 2.0 technologies (e.g. wiki, forum, etc) is critical. We are in the process of experimenting with the development of a plugin for Facebook that allows you to send messages/images from in-world to your Facebook page."[59]

3.5 Support media outside SL

There is a range of online media outside the grid which assists both developers and users of SL.

Linden Labs actively promote the use of SL for education and learning support [Second Life Education 2007], providing mailing lists, a wiki, active promotion and special rates for in-world land used for educational purposes [e.g. Campus: Second Life, 2007]. Some in-world locations where UK Higher and Further Education activities are taking place are listed in the appendix.

There is a growing body of conferences dedicated to education, learning and research in SL. Increasingly, conferences are run in RL and broadcast (sometimes with an element of interaction) in SL. For example, the Eduserv Foundation seminar [Powell, 2007a] was broadcast to three SL locations, with some questions for the speakers taken from in-world visitors, and in October 2007 the Internet Research 8.0 workshop [About IR8.0, 2007] on learning and research in SL "will be simulcast into Second Life".

Linden support 17 mailing lists [Second Life, 2007], including three (Educators, Educatorsandteens, In-world education) of relevance to people in UK Higher and Further Education. A new mailing list for educators has recently been started on JISCmail [JISCmail 2007].

Many developers of educational facilities in SL also run blogs or (to a lesser extent) wikis, where their work is chronicled. For example, there are blogs describing the work at:

- Edinburgh University [Bing, 2007]
- Leeds College of Art and Design [DDM Collective blog, 2007]
- Liverpool University [Miller, 2007]
- Loughbourgh University [A Second Life Campus for DIS, 2007]
- University of Plymouth [Boulos, 2007a]

The University of Hertfordshire has a wiki [Virtual University of Hertfordshire, 2007] for team members to provide the latest news on developments. This is linked to a development forum [FEIS Technical Forum, 2007] for discussion between the island developers.

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[58] Jacqui Bennett, Open University

[59] Peter Twining, Open University

Other Web 2.0 applications or social networking services contain some elements of SL interest or crossover. Facebook in particular has "groups" where like-minded people can discuss topics of mutual interest. Several such groups, including "K-12 Educators in Second Life" and "Second Life for Educators" are accumulating members. However, topic discussion activity is low, indicating that most people joining are doing so out of curiosity or are just "lurking".

4. Usage, impact and problems

Most structures within SL are intended to be used in some way by a defined audience or demographic. Many respondents indicated that, as they were developing towards a target date – usually the next academic year - or defined objective, usage was currently not an issue and the impact of their development would be assessed after official use. However, some respondents were able to provide some initial findings.

4.1 Usage

SL provides some metrics on how many visitors an area has:

> "As at 12 July 2007 noon our official Linden SL parcel traffic value has increased to 215 (up from 54 on 11 July)." [60]

And from the same SL project in September 2007:

> "Our in-world public group launched on 10 August 2007 now has 48 members as at 30 August 2007 (up from 25 members on 12 August 2007), and as at 30 August 2007 (end of the day, SLT time), our SIM received more than 410 unique visitors/avatars since our initial launch on 12 July 2007, up from about 210 unique visitors on 11 August 2007 (12 Jul 07 - 11 Aug 07) - the corresponding figures with repeat visitors would be much higher." [61]

At the University of Hertfordshire, a watch is being kept on the level of visits to the institution island as it is being developed:

> "Traffic stays at around 1000 (not sure how that equates to real numbers). We have had one meeting, it was an internal event used to try and see how difficult it is to 'herd' people around. We had about 25 people. We're not actually 'open' yet and, as such, advertising has been kept to a minimum." [62]

Some developers have also designed systems to keep a log or tally of visitors to their land or facility. The open nature of SL makes for a different approach to attendance at events, where access is possible to anywhere where the land owner has not placed restrictions. For events such as in-world courses and meetings, this has implications for both keeping wanted people "in" (when there may be more interesting content elsewhere in SL or RL), and keeping unwanted people "out".

A few respondents commented on aspects of meetings and visitors within their development; for example:

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[60] Maged Kamel Boulos, Plymouth University
[61] Maged Kamel Boulos, Plymouth University
[62] Andrew Marunchak, University of Hertfordshire

"The 'structure' has been a picnic table, or a beach fire pit - just meeting places. At 'timetables sessions' we have entertained three groups of about half a dozen people at a time. At other times, when courses are running, it is quite common to 'bump into' course members just hanging out. One of the things that we have wanted to achieve in our 'construction' in-world has been a place where people can go and know that anyone they encounter will belong to the course/programme (or be closely associated with it) and that they can have a secure and unthreatening meeting."[63]

4.2 Impact

Even though many of the respondents were still in the development phase, various impacts were reported. Some refer to individual student experiences:

"We have evidence of students commenting on the confidence given to them by the environment and how this has helped them as learners ...Results indicate that collaborative working in-world invokes considerably more enablers to flow than face-to-face sessions but this is not yet concluded."[64]

"We have evidence (in the form of reports from students) that their activities within the Schome Park Projects have had an impact on their real world activities (e.g. they have gained confidence in leading meetings in-world which has impacted on their confidence when it comes to real world meetings)."[65]

"One particular student, who had been struggling all year to find out what she was about, took to Second Life straight away. She recognised the creative potential, and it allowed her to re-invent herself. This has given her confidence in her real life working practice, and she now engages much more effectively with her course."[66]

Several respondents reported a positive impact from the perspective of collaboration with other academics, both within their own institution and elsewhere in the wider education sector:

"The main real world impact so far has been in fostering collaboration across the university. Whilst this began as a project for the School of Education and Professional Development, it has developed to include two other schools. In terms of recruitment, not yet - but we believe there may be potential here and one proposed outcome of the project is an area devoted to talking to potential students and providing information about the institution."[67]

"Personally I have met a number of academics working in my field from around the world, links that I would otherwise not have made. Similarly I have now met a number of academics at my own institution that I would otherwise not have worked with."[68]

Informal correspondence with some academics indicates an interest in SL by the marketing and/or alumni departments of their universities:

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[63] Hamish MacLeod, Edinburgh University

[64] Jacquie Bennett, Open University

[65] Peter Twining, Open University

[66] Ian Truelove, Leeds Metropolitan University

[67] Cheryl Reynolds, School of Education and Professional Development, University of Huddersfield

[68] Maggi Savin-Baden, Director of The Learning Innovation Group, Coventry University

> "I have had one or two enquiries about the Masters from prospective students who have made a point of visiting Holyrood Park before getting in touch - a hint that SL can play a role in recruitment."[69]

> "We have had (many) enquiries regarding course costs but have no system in place to track the decisions people make."[70]

4.3 Problems

Most of the respondents didn't report any problems as yet; several pointed out that, as they were in development mode, they hadn't tested in scaled-up conditions. One respondent compared his experience of teaching a class in SL from his home, with that of teaching it in the (real) classroom:

> "I conducted a Second Life induction session with post-grad students where I was at home, and the students were in a classroom. This was a disaster, as I was not able to command the attention of the class through my avatar. I repeated the same class the following day with first year undergraduates, but this time I was physically in the classroom. This was a huge success, and we achieved more in 30 minutes than we had in three hours the previous night. It made me realise the importance of a blended approach to inductions into Second Life."[71]

Heavy simultaneous uses – for example, large class sizes on the grid – may present issues, as recognised by the Open University:

> "The schome community is continuing to explore Teen Second Life - with a view to testing out issues to do with scalability (we have concerns about the extent to which Second Life can sustain serious educational activity with hundreds, yet alone thousands, of learners whilst keeping the costs manageable)."[72]

5. Considerations for an SL presence

5.1 Developing within an academic environment

In some institutions, specific senior people have not only approved the development, but are also actively participating in SL. Many respondents who were developing in SL had recognition and approval from senior staff in their institution.

> "Yes. VC (Vice Chancellor) very enthusiastic. VC has own avatar and will be launching the island at large event on 13th Sept, in RL and SL."[73]

> "Our activity is sanctioned by a Dean and the Head of my department."[74]

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[69] Hamish MacLeod, Edinburgh University

[70] Andrew Marunchak, University of Hertfordshire

[71] Ian Truelove, Leeds Metropolitan University

[72] Peter Twining, Open University

[73] Maggi Savin-Baden, Director of The Learning Innovation Group, Coventry University

[74] Tony Sant, School of Arts and New Media, University of Hull

> "(In July 2007) the position is that the VC was proud to announce the purchase of an Island, the head of the IT and communications infrastructure has set up a 'working group' for coordinating the use of SL."[75]

> "I did a presentation about our Second Life activities to the Senior Executive Team, which included the Vice Chancellor, and no objections were raised."[76]

> "We had a meeting with the VC and some heads of schools and departments in real life. It was a presentation we gave with a promotional video; since then there has been another presentation which was also well received."[77]

In Strathclyde University, the driving forces appear to come equally from individuals in departments and from senior management. Derek Law explained in July 2007:

> "Strathclyde University's strategic plan has three key strands, one of which is innovative learning. Academic and support staff are encouraged to explore new technologies and services and have developed a number of novel approaches in recent years. Social networking in general and Second Life in particular offer interesting opportunities both for novel forms of pedagogy and for reaching new markets. So we are exploring the development of specific courses in Law and Architecture which offer possibilities for role play and for easy building design respectively. More generally we are looking at courses aimed at overseas markets."[78]

Some academics who are not creating a large institutional presence in SL do not need to seek official status, as SL is merely a platform for their individual work and research:

> "I am not constructing buildings or badging land, just constructing tools for staff and student use. I presented on some of this work at our Teaching & Learning Conference last week and our eLearning team is aware (and broadly supportive) of these small-scale activities."[79]

However, in at least one UK Higher Education institution, SL activity by staff has been stopped by the press/marketing office until university management are comfortable with the development from a marketing and branding perspective.

Budgetary and financial approval can also be a problem, though the number of UK educational institutions who have purchased an SL island and/or are developing on one indicates this is usually surmountable. As previously mentioned, one approach being taken by some academics is to undertake their SL development "invisibly", or as independently from their host institution as possible. However, this does not solve the problem of official funding for an island. A member of staff at the University of Bath observes:

> "I've heard that Computer Science is trying to buy an island, but they're having problems justifying this to the finance department."[80]

Though the majority of respondents enjoy institution and home access to SL, a minority, and several HE and FE developers on mailing lists, indicated technical problems. For example:

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[75] Mike Hobbs, Anglia Ruskin University
[76] Ian Truelove, Leeds Metropolitan University
[77] Andrew Marunchak, University of Hertfordshire
[78] Derek Law, Head of Information Services Directorate, University of Strathclyde
[79] Peter Miller, Biological Sciences, University of Liverpool
[80] Brian Kelly, University of Bath

> "Currently we can't access SL from the university campus or machines on the network. IT are trying to find a solution to this." [81]

Most of the technical issues concern using PCs powerful enough to develop within SL at a reasonable speed, and having access to ports needed for activities such as teleporting.

Some academics use their skills, experience and/or ownership of land to give their initiative a position of strength within their institution:

> "As I've built up my SL interests I've built up a supply of land and so it was easier to make some space available for this first part of the exercise rather than try and persuade people that SL was a good idea AND the college needed to buy land!" [82]

This technique seems to be working, at least in this particular case, as in September 2007 the same person responded on a mailing list:

> "I have now got a small staff group going with interest cross-college. The plan for the year is to spend the first part getting the staff group up to speed, getting them to do some research into what SL offers and then in the second half of the year to get a small student pilot group going. We are going to have some interesting issues in getting this going, not least that a lot of our students are under 18 and therefore can't go on the main grid. Not too worried about this at the moment as we have a few ideas to keep us going and if we can get started on the main grid we can then look at whether we start a project on the teen grid too." [83]

From the responses, two observations can be made:

1. Successful SL developments usually seem to be the product of a determined academic, and/or have received the support of senior university management early on.
2. SL developments are more prevalent in colleges and the "newer" universities (82% of university responses for the July 2007 snapshot), rather than the "older" universities (18% of responses). Why this should be the case is unclear; possibilities include:

- colleges and "new" universities having more vocational subjects that can take obvious advantage of SL
- additional, accumulated bureaucracy in older universities that is not (yet) present in "new" universities

5.2 Time

It is difficult to quantify how much time is spent, or needs to be spent, on a specific development in SL. Factors include:

- structure and artefact planning and research
- the developers' level of experience
- the ambitiousness and complexity of the construction
- the extent of testing and promotion

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[81] Gilly Salmon, Leicester University
[82] Pauline Randall, e-learning Development Co-ordinator, Elmwood College
[83] Pauline Randall, e-learning Development Co-ordinator, Elmwood College

Several respondents indicated in July that they were hoping to accelerate their SL development activities over the summer academic vacation, to prepare in-world facilities for the forthcoming academic year. A few respondents discussed a relatively quick development time, or didn't use any official work time:

> "The actual building in SL doesn't take much time (a week or two would usually be enough, thanks to prefab objects that can be edited and customised)." [84]

> "Overtime - probably about 2-3 weeks evening work" [85]

However, most of the survey respondents had invested significant amounts of work time to create and support structures and activities within SL:

> "Before any students started using Schome Park we estimated that we had invested somewhere in the region of 1500 staff hours on preparation (exploration of the potential of SL, planning, design, building, scripting, etc.). Roughly half of that time was spent in-world. Since then the staff team have clocked up hundreds (low thousands) of hours in-world – in addition to the time spent on related activities in the Schommunity wiki and forum (and other real world activities/meetings)." [86]

Other academics, such as David Jukes, have dedicated significant amounts of their own personal time to SL developments. He explained in July 2007:

> "Not completely finished the sim yet but in total to put in the terraform, planning and building a total of 1,000+ person hours has been recorded. There are two people working on the build, one during the day and one in the evening. This was mainly due to not having all the skills necessary at the start to achieve what we wanted. This is actual work and not the research and visiting other sims for ideas and inspiration. Personally, I spent over 1500 hours being in-world understanding social interactions between October 2006 and May 2007, to get to grips with how SL works to hopefully help realise the full potential of what we/I could achieve. All this was done mainly outside official work hours as I am a full time lecturer and program leader." [87]

From the survey, it is evident that the large majority of staff do not restrict their in-world time to just their work hours in RL. It is clear that there is a high level of enjoyment and satisfaction among SL developers, with many carrying on their SL activities at home, in the evenings and at weekends. Ian Truelove confesses:

> "If only I'd kept a log. At least 40 hours a week between myself and Graham Hibbert. Often a lot more. We've had the sims since April, so probably about 500 hours. The vast majority of that time was not in official work time, although LeedsMet have been very supportive, and allowed us to be flexible with our work time to develop the island. We have time allocated for research and scholarly activities, so some of the time fits into this. It is a form of entertainment for us, so we don't feel hard done by. It's better than watching TV." [88]

5.3 Funding

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[84] Maged Kamel Boulos, Plymouth University

[85] Savvas Papagiannidis, Newcastle University

[86] Peter Twining, Open University

[87] David Jukes, Business School, Nottingham Trent University

[88] Ian Truelove, Leeds Metropolitan University

To develop a presence in SL requires an area of land. Funding is also required for other in-world costs, such as search listing, apparel and items constructed in SL by third-party developers.

There are a number of costs outside of SL that also need to be factored in:

- PC use. Though the SL "viewer" software is free, high specification PCs are usually required in order to carry out in-world development at a reasonable speed.
- Staff time. As the previous section shows, staff time is often significant, thus necessitating a large financial cost within the project.

Respondents indicated a variety of sources of funding for their development within SL. Some academics obtained funds from grants and awards:

> "I bought the island from money I received in an award for teaching." [89]

> "We received a HEFCE grant (which was distributed by the University) for the island." [90]

> "Part of our funding came from external sources e.g. NAGTY, Innovation Unit, BECTA, NESTA." [91]

Some institutions, such as Coventry University and Bromley College, have invested significant internal money into their SL development:

> "Cost of island and £20k to purchase team to build (students flying squad) and to help staff time." [92]

> "The marketing department in the College is now in the process of buying a full island (64K:-)" [93]

Other academics have obtained money from several different internal sources:

> "The Faculty of Arts & Society funded one of the sims, and the Office of the Pro-vice Chancellor (Assessment, Teaching and Learning) funded the other one." [94]

At the University of Derby, an academic is partially funding the development himself:

> "Myself and a free space grant from EducationUK." [95]

Several other colleges and universities are benefiting from Education UK Island [Education UK Island, 2007], which offers space and an education land grants programme. For the forthcoming academic year, this programme received three times as many applications as awards were available. As well as Derby, successful land grants projects were awarded to:

- The British Literature Classroom
- Scottish Further Education Unit
- King George V College

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[89] Gilly Salmon, Leicester University

[90] James Dearnley, Department of Information Science, Loughborough University

[91] Peter Twining, Open University

[92] Maggi Savin-Baden, Director of The Learning Innovation Group, Coventry University

[93] Clive Gould, Bromley College

[94] Ian Truelove, Leeds Metropolitan University

[95] Simon Bignell, Department of Psychology, University of Derby

- Mid Cheshire College
- University of the West of England

Office space projects were awarded to:

- University of Staffordshire
- University of Hull
- Association of Physical Educators

In September 2007, the Island owners announced a new programme of free land grants for educators. Other organisations provide free or discounted land or facilities for academic work, such as the EDTECH island:

> "EDTECH Island is a free, 24/7 open-access resource to support educators in the study and use of virtual world environments for teaching and learning. We offer any educator the ability to use the facilities on the island to support and research virtual world teaching." [96]

Developing a small proof-of-concept presence within SL to obtain internal funding for a larger institutional presence may be a successful approach for some academics:

> "We have *recently* bought an island, funded central by the University's Information Services. Before then - that is, most of the actual work we have done in world with students - was in a small area of 'Campus' lent to us by Linden." [97]

An additional cost for some projects is the use of external SL developers to construct their in-world presence:

> "We're in the process of purchasing an island called 'Kriti Island' and are drawing upon the expertise of an SL landscape designer …to assist in the development of our island's architecture." [98]

> "We're waiting to hear from TwoFour media about total development time from them." [99]

As a course or department presence in SL expands, and facilities are rolled out to more students, so costs increase and the search for funding becomes an ongoing task:

> "We're also looking at other sources of funding to support a much larger initiative with our PGCE students. This cohort is over 900 strong and study at one of over 30 different colleges in our consortium so we feel that SL would provide them with greater opportunities to network with their peers." [100]

5.4 Replication of real world

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[96] Lisa Dawley, Department of Educational Technology, Boise University

[97] Hamish MacLeod, Edinburgh University

[98] Crispin Dale, University of Wolverhampton

[99] Gilly Salmon, Leicester University

[100] Cheryl Reynolds, School of Education and Professional Development, University of Huddersfield

A topic that frequently appears in SL discussion forums is whether to "mimic" a structure from RL, or to create something new that can take extra advantage of SL functionality. The mimic argument is best summarised thus [Loon]:

> "One of the basic principles of good teaching is to begin on familiar ground and use it as a launch zone for stepping into the unknown. If a learner has to deal with too many new experiences at once, she can be distracted from the one you intended as the focus. I believe that if SL were NOT full of familiar RL features, it would not be an effective learning environment."

Some institutions are deliberately creating an image of their campus in SL. Leeds Metropolitan University's reason for recreating its campus in SL:

> "We recreated our RL building to provide an initial bridge for new users (to stop them feeling too scared by this strange new world and to give them a sense of ownership)." [101]

The opposite, anti-mimic stance is taken by people wishing to overcome the physical and psychological limitations of RL environments; for example [Levine]:

> "I really hate stairs in SL, they are so tedious to walk. And rooms that force you to use a single door (unless there is a narrative reason for the experience) and buildings with small rooms where your views on rotating put you looking at the outside of a wall. I've rezzed accidentally into concrete, mountains."

> "Hopefully folk will realise that replicating their physical campus is a waste of time pedagogically (though it may serve a useful marketing purpose)." [102]

This is the approach being taken by the Law department in Strathclyde University:

> "We want to create a form of education that's quite different from RL forms & genres. There's a lot in SL that merely mimics RL forms of education." [103]

Imperial College London represents the outside of their buildings as they are seen in the real world, but use the functionality of SL to make the inside somewhat different:

> "We developed Imperial College's Queen's Tower as the main land mark. We also developed the Sir Alexander Fleming Building. The inside of the building doesn't represent the real structure. This is because we wanted to make it available as a teaching hospital. Inside the hospital our Head of Undergraduate Medicine gives a welcome message as well as the Student Union President. Course Guides can be downloaded from the main reception and different links to the Student Union website, e.g. welfare area, are provided in the Student Union's office." [104]

As yet, there is no clear consensus on the best approach.

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[101] Ian Truelove, Leeds Metropolitan University
[102] Peter Twining, Open University
[103] Paul Maharg, Law Department, University of Strathclyde
[104] Maria Toro-Troconis, Imperial College London

6. Related developments

There are an increasing number of developments on the grid from within the UK Higher and Further education community that do not easily fit into the categories in section two; a few – predominantly related to the JISC[105] - are introduced in this section.

In the summer of 2007, UCAS created an island on the grid [UCAS] to support the clearing process (where potential applicants are found a place on a University course). The media release describes the facility:

> "The UCAS Island has a series of 'bio-domes' to house information for applicants with the opportunity to meet UCAS avatars who will answer their questions. The area also has a performance stage where up-and-coming bands will perform. The island has a PG rating and is designed to be free from swearing, sexually explicit language or behaviour and violent behaviour. There are also areas for applicants to meet each other, such as the beach area, where they can sunbathe, play beach-ball or take a trip on a pedalo."

The JISCmail service has also taken a plot on the grid, and is experimenting with how to best use SL:

> "We are looking to do active work here - both in terms of integrating second life with existing services that we all ready provide, and also provide training and helpdesk facilities. We are also looking to partner with other organisations to provide communication and other services to them where we can."[106]

Another JISC-funded service, the Regional Support Centres, have staked a presence on the grid:

> "The JISC Regional Support Centres (RSCs) have had office space on Education UK in a very informal capacity. Some RSC staff have taken a keen interest in the developments of the use of SL in teaching and learning and are developing their own SL skills. However, officially, the RSCs are not planning on widening their support services to SL until a guideline / acceptable use policy has been agreed with the RSC managers."[107]

Meanwhile, the JISC-funded EMERGE project is developing an island to promote the output of its project.[108]

UK Funding bodies are starting to commission research into the use and perception of SL in education. Ipsos MORI were commissioned to carry out such a piece of research involving prospective university students; the resulting report [JISC 2007], and the perceptions of SL reported within, being discussed online [Powell, 2007c].

The emerging position of the JISC on SL was summarised on October 1st:

> "Second life could be the critical point of transition between the passive, corporate designed and driven game play of video games created over the last 20 years and a new hegemony dominated by user imagined, created and supported virtually 3D interactions. Over the past year SL has 'opensourced' it's client allowing projects such as OpenSim to create a servers that use the client for an entirely user controlled environment.

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[105] JISC: Joint Information Systems Committee: http://www.jisc.ac.uk

[106] Simon Biles, JISCmail service: http://www.jiscmail.ac.uk

[107] Jane Edwards, JISC Regional Support Centre, West Midlands

[108] JISC Emerge project: elgg.jiscemerge.org.uk

It is at this critical point that the JISC can step in and help users and innovators to stretch out and take the opportunity that a simple, understandable platform like SL has allowed us, by supporting those innovators who are trying to bridge the gap between collaboration in both research and learning, gaming and technology. What we hope at this stage in the Users and Innovation Programme[109] is that we are about to receive a number of high quality project proposals that will consider the nexus between teaching, research and administration, and additionally these new 3D medias, including well known platforms such as Second Life but also some of the new emergent platforms."[110]

7. Conclusion

This updated report shows that a growing number of UK academic institutions, departments and groups are at different stages of SL development.

The summer of 2007 has seen several HE/FE institutions appear, in some form, on the grid. For example, Falmouth College has recently started its SL activity:

"At present we're planning two projects to test the water. First with BA (Hons) Journalism first year students who will use SL as their 'beat' (they have to report RL as well) and try to place material in the various SL periodicals. I'll be borrowing (or squatting) space in October to facilitate that. We also seem to have inspired enough interest (and equal scepticism, needless to say) in the Cornish tourism industry to buy an island which will be used to develop both training ideas and immersive promotional material. The first academic / industry meeting happens in October (RL but we intend to blend it as much as possible)."[111]

Along the coast at Bournemouth University, Andy Pullman and colleagues are also moving quickly with their developments:

"We are currently renting some space on UK Education Island 2 (from August 2007) for a one year project to examine and investigate the use and effectiveness of Second Life. As a part of this project, we have created the HSC Gallery which exhibits teleport links to interesting Health & Social Care areas within Second Life.

Other Second Life participants are being encouraged to provide exhibits for their Second Life Health & Social care projects which we will then display in the gallery. I am also blogging about our HSC activities in Second Life [Pulman]."

Some institutional and departmental islands, such as those developed by staff at Leicester and Wolverhampton universities, are now open for public access. Those previously open, such as at Nottingham Trent University, have developed rapidly over the last few months.

While some institutions are openly and actively developing in SL, others are doing so less publicly, and others still are either watching developments before making a decision, or being slowed down by institutional bureaucracy. Support services for Higher and Further Education are noting a high level of consideration:

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[109] Users and Innovation Programme:
http://www.jisc.ac.uk/whatwedo/programmes/programme_users_and_innovation.aspx
[110] Lawrie Phipps, JISC Programme Manager, Users and Innovation Programme
[111] Jim Hall, Journalism Department, University College Falmouth

"There's been a lot of interest in SL within the colleges in our region recently (July 2007) and we've received quite a few requests for information on the subject." [112]

Several institutions are interested in SL from the income stream perspectives of marketing (future students) and alumni (previous students):

"There has been quite a burgeoning of interest in SL across the university, and our Alumni Office is getting very interested. Their aspirations are, of course, quite different from ours." [113]

"The island was to include promotional information on the college, the University of Greenwich and our HE computing courses." [114]

It will be interesting to observe how these different perspectives – marketing, teaching and learning – drive institutional developments on the grid.

One point repeated through the July 2007 survey was that many academics were developing in SL with a view to running courses in the new academic year:

"We are not officially open yet but plan to be in October 2007 and that's when we will start teaching." [115]

"Teaching with students is planned for later this year." [116]

"My aim is to launch for large courses in September." [117]

As the 2007-08 academic year progresses and these, and other, courses are run, the advantages and limitations of using SL in teaching and learning will become clearer. Consequently, the next two snapshots (March and September 2008) will focus more on the "impact" of using Second Life within formal Higher and Further Education.

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[112] Kenji Lamb, JISC RSC for North East Scotland

[113] Hamish MacLeod, Edinburgh University

[114] Clive Gould, Bromley College

[115] David Jukes, Nottingham Trent University

[116] Simon Bignell, Department of Psychology, University of Derby

[117] Shale Bing, Edinburgh University

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Appendix

1. Some SL developments within UK HE / FE institutions

The "Cat" column follows the framework used in section 2 of the report:

1. Thinking about it but not planning – not included in the table below
2. Actively planning an SL presence
3. Researching within SL
4. Developing tools within SL
5. Staging an exhibition
6. Departmental or centre presence
7. SL providing support structures for a course
8. Supporting developments across several departments
9. Building a campus-wide presence

= islands or developments not yet accessible to everyone.

Institution	Contact / Leader	Cat	URL or SLURL
# Anglia Ruskin University	Mike Hobbs	7 / 9	secondlife://Anglia%20Ruskin%20University/162/104/101
Ashton Sixth Form College	Sandra Taylor	2	-
Bedfordia University	Mark Gamble	9	secondlife://Bedfordia/229/201/23
Bromley College	Clive Gould Barry Spencer	6 / 7/ 8 / 9	secondlife://Daydream%20SE%20Islands/206/40
Bournemouth University	Andy Pulman	5	secondlife://Education%20UK%202/231/28/30
Coventry University	Maggi Savin-Baden	6 / 7 / 9	secondlife:///Coventry%20University/126/91/38/
# De Montfort University	-	??	secondlife://De%20Montfort%20Island/109/101/27 or possibly secondlife://DMU/128/128/0
Derby University	Simon Bignell	3 / 6 / 7	secondlife://Education%20UK/2/145/24 secondlife://Education%20UK/241/94/23
Edinburgh University	Shale Bing Fiona Littleton Hamish MacLeod Austin Tate	3 / 6 / 7 / 9	http://vue.ed.ac.uk secondlife:///Vue/195/86/27 secondlife:/Edinburgh%20University/38/29/32
Elmwood College	Pauline Randall	2	-
Fanshawe College		9?	secondlife://Fanshawe%20College/128/128/0
Glamorgan University	Cameron Mitchell	3	http://learning.weblog.glam.ac.uk/posts/show/73
Falmouth University College	Jim Hall	2	-
# Glasgow Caledonian Uni.	-	9?	secondlife://Glasgow%20Caledonian/190/62/27
Goldsmiths, London University	Matt Ward	5	http://news.bbc.co.uk/1/hi/education/6609333.stm
Greenwich University	Simon Walker	2	-

Hertfordshire University	Andrew Marunchak	9	secondlife:///University%20of%20Hertfordshire/122/76/26
# Huddersfield University	Cheryl Reynolds	3 / 7 / 8	secondlifeproject.pbwiki.com secondlife:///Queensgate/172/195/27
Hull University	Toni Sant	2 / 6	secondlife:///Education%20UK/105/71/41
Imperial College London	Maria Toro-Troconis	7 / 9	secondlife:///Imperial%20College%20London/143/124/30
Institute of Education	Diane Carr	3	http://learningfromsocialworlds.wordpress.com/
King George V Sixth form college	-		secondlife:///Education%20UK/97/219/33
# Lancaster University	-	9?	secondlife:///Lancaster%20University/128/128/0
Leeds College of Art and Design	Annabeth Robinson	5	http://ddmcollective.blogspot.com/ secondlife:///Gourdneck/170/181/120
Leeds Met University	Ian Truelove	5 / 7 / 9	secondlife:///LeedsMet/128/128/0
Leicester University	Gilly Salmon	4 / 7	secondlife:///Media%20Zoo/125/128/23
Liverpool University	Peter Miller	4	http://tidalblog.blogspot.com secondlife:///Second%20Nature/181/215/24
# Liverpool Hope University	-	9?	secondlife:///Liverpool%20Hope/128/128/0
# Loughborough University	James Dearney	6 / 9	http://www.dis-sl.blogspot.com/ secondlife:///DISland/92/159/30
# London College of Communication	Andy Savery	2	secondlife:///LCC/140/133/30
London College of Fashion	Julia Gaimster	5	secondlife:///London%20College%20of%20Fashion/137/194/25
Newcastle University	Savvas Papagiannidis	8 / 9	secondlife:///Ebusiness/169/109/27
Norwich City College		9	secondlife:///Education%20UK/241/171/21 secondlife:///Education%20UK/20/94/21
Nottingham University	Thomas Chesney	3 / 6	http://www.nottingham.ac.uk/shared/shared_exchange/pdf/June07_full.pdf
Nottingham Trent University	David Jukes	7 / 9	secondlife:///Trent%20Island/83/210/24
Open University	Peter Twining	4 / 6 / 7 / 8	http://schome.open.ac.uk/wikiworks/ secondlife:///SchomeBase/128/128/0
# Oxford University	-	2 / 3 / 9	http://modelling4all.wordpress.com secondlife:///University%20of%20Oxford/131/121/47
Paisley University "Second Scotland"	Daniel Livingstone	3 / 5 / 7 / 8	http://www.sloodle.com secondlife:///Vesuvius/185/92/27 secondlife:///virtuALBA/56/46/27
Plymouth University	Maged Kamel Boulos	5 / 7	http://www.sl-sexualhealth.org.uk secondlife:///Education%20UK/31/63/23
Portsmouth University	Jane Chandler	??	secondlife:///Teaching%202/32/60/29
Reading University	Shirley Williams	3	http://redgloo.sse.reading.ac.uk/cop3d/ secondlife:///Teaching%205/150/47/23
Roehampton University	-	9?	secondlife:///Roehampton%20Virtual%20Campus/128/128/0

Sheffield University	Sheila Webber	6 / 7	secondlife://Eduserv%20Island/203/237/50
Staffordshire University	Glynn Skerratt	3	secondlife://Education%20UK/194/167/22
Strathclyde University	Paul Maharg Scott Chase	2 / 7 / 9	Island bought, and under development.
# Sunderland University	Shaun Allan	9	secondlife://University%20of%20Sunderland/131/121/47
# Sussex University	-	9?	secondlife://University%20of%20Sussex/128/128/0
# Ulster University (Magee Campus)	-	9?	secondlife://University%20Ulster%20Magee/162/82/30
Surrey University	Aleks Krotoski	3 / 5	http://mypages.surrey.ac.uk/psp1ak secondlife://Hyperborea/200/100/22
# Warwick University	Mark Childs Mathematics Department	3 6	www.tinyurl.com/ypdjkc secondlife://Warwick%20University%20Maths/128/128/0
West of England	Manuel Frutos-Perez	4 / 7 / 9	secondlife://Education%20UK/24/225/22
Wolverhampton University	Crispin Dale	3	secondlife://Kriti%20Island/133/128/24
York College	Martin Harmer	7	secondlife://Serenity%20Islands%20NW/151/215/28

It should be stressed that this table forms an incomplete profile of SL developments within UK HE and FE, as of September 2007. Some institutions are not tabulated, either because they are unaware of the survey and cannot be easily found on the grid, or because they do not yet wish to be "public".

The Simteach wiki [Institutions and Organizations in SL, 2007] also listed (in July 2007) the following as having a presence on the grid:

- Sheffield Hallam University
- University of Surrey
- University of Wales in Newport

2. Some other developments of interest

There are many other developments on the grid which, though not undertaken by a UK university or college, are of relevance to HE / FE. These include:

Service	Second Life
Eduserv Foundation	secondlife://Eduserv%20Island/128/128/27
JISC EMERGE project	secondlife://Emerge/118/78/112
JISCmail	secondlife://Education%20UK/200/128/22
JISC Regional Support Centres	secondlife://Education%20UK/240/78/21
Scottish Further Education Unit	secondlife://Education%20UK/30/180/21
UCAS clearing	secondlife://UCAS/128/128/0

The Eduserv Foundation have also funded four projects[118] which will involve Research and Development within Second Life:

- "Theatron 3" will construct 20 historic theatres in Second Life, creating an extensive, content-rich range of research-based virtual environments, and generating highly innovative, interactive teaching and learning resources.

- "Learning from Online Worlds; Teaching in Second Life" will research and theorise learning in two online social worlds (World of Warcraft and Second Life). The project will use this theory to develop practical recommendations for learning and teaching, and test these by teaching courses in Second Life.

- "Sloodle" will research and develop pedagogical theories relevant to multi-user 3D virtual worlds and use these to inform and lead the development of Sloodle and to support the growing community of educators using 3D virtual worlds.

- "Modelling4All" will attempt to make computer modelling more widely accessible by developing easy to use Web 2.0 services for building, exploring and analysing models, encouraging the development of an on-line community where models and model components are shared, tagged, discussed, organised, and linked to other resources. Furthermore, the project will explore the possibilities of providing an immersive first-hand experience of the execution of models within Second Life.

3. Acknowledgements

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[118] Eduserv Foundation research grants: http://www.eduserv.org.uk/foundation/grants