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**The Spring 2009 Snapshot  
of Virtual World Use  
in UK Higher and Further Education**

Virtual World Watch

[www.virtualworldwatch.net](http://www.virtualworldwatch.net)

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Funded by Eduserv

[www.eduserv.org.uk](http://www.eduserv.org.uk)



## 1. Summary

This report is the fifth in a series of snapshots of virtual world activity in UK higher and further education. It is the first to be conducted under the umbrella of Virtual World Watch (VWW). VWW and the previous snapshots are funded by Eduserv and supported by the Eduserv Foundation.

Questionnaire data for this snapshot began to be collected at the end of December 2008. Several staff within the JISC Regional Support Centres provided additional information; together with monitoring mailing lists, 'soft' information from contacts and searches of the web and Second Life, this contributed to a more rounded picture of virtual world activity in UK academia than was achieved in earlier snapshots. However, this report focuses on the 54 valid responses to the survey questionnaire.

Four main geographical clusters of academic Second Life activity have emerged in the UK:

- Edinburgh: the University of Edinburgh and nearby Heriot-Watt University.
- Milton Keynes: the Open University.
- The West Midlands: Coventry and the nearby universities of Birmingham City and Warwick.
- Leeds: the universities of Leeds and Leeds Metropolitan, and Leeds Art and Design College.

A number of universities, such as Lancaster, Southampton, Teesside and the West of England, have seen Second Life developments and teaching across several departments, and there is evidence that nearly every UK university is using Second Life to some extent for development or teaching work. However, in further education colleges the picture is more sparse, with evidence of development and student activity in a minority and little or no evidence of activity in the rest.

Eighteen uses of virtual worlds in UK higher and further education were identified, each described in several survey responses. Learning and teaching activities predominated, with these supporting many subject areas; however, the medical sciences, mathematics and art and design were mentioned more often than others. Simulations, the visualisation of complex structures and safety role-play were also described by several academic respondents.

Many universities are studying the use of virtual worlds - mainly Second Life - in education. There does appear to be a large amount of duplicated research in this activity. Some are using virtual worlds in courses about e-learning, while others are teaching staff how to use these environments to best effect.

Second Life remains the virtual world of choice for learning, teaching and research in UK academia. However, a cluster of universities, groups and lone academics are starting to experiment with OpenSim as an alternative.

Respondents to the survey reported mixed attitudes to the use of virtual worlds from both students and peers; however the large majority of respondents said they planned to do further virtual world learning and teaching in the next year.

The practice of solely creating an exact reproduction of the university campus in Second Life is now somewhat rare. Most institution-wide, in-world campuses make fuller use of available virtual world resources, for example providing teaching facilities for departments and courses, and exhibition spaces for student work.

## 2. Surveying the landscape

As the amount of virtual world activity has grown in UK academia, so issues have arisen about how best to survey these activities.

### 2.1 Identifying activity

This snapshot is based on responses to a questionnaire issued in December 2008 and January 2009 through the JISCmail virtual worlds mailing list and the Virtual World Watch website, and by emailing all previous respondents to the series of snapshot surveys.

The number of valid responses (54) was higher than for any other snapshot. Paradoxically, the amount of data received was smaller than for the previous two snapshots. This is due to:

- The ‘core’ of respondents to previous surveys who submitted lengthy replies being largely absent due to ill health, or being particularly busy or absent from work over the Christmas break
- A deliberate policy of asking as few questions as possible, making responding less onerous, to draw in new people (‘fresh blood’). This seems to have worked, with many new respondents.

Virtual World Watch (VWW) has now built up a data store of responses across five surveys and 18 months. However, it should be remembered that these responses do not form a comprehensive picture of virtual world activity in the UK as not all developers respond to the questionnaires. This is for a variety of reasons; the following have been stated to VWW by non-respondents:

- They don’t like filling in questionnaires.
- They don’t want to encourage more enquiries from researchers (‘interview fatigue’).
- They are busy.
- Their development is not yet public or official.
- Their development isn’t known to more senior people and/or central units in their institution, a situation they would like to continue.
- Their experience of virtual worlds has been largely negative.
- They do not wish to say anything that may jeopardise their career or future project funding, or make their working environment more difficult.
- There are some negative attitudes to the use of virtual worlds in their immediate workplace.
- They didn’t find out about the survey until after the closing date for responses.

In addition, even although the number of responses has increased, it is possible that the proportion of reported virtual world activity, as a part of such activity in UK academia overall, has decreased. It is evident even from crude Google searches e.g.

- [site:.bath.ac.uk](http://site:.bath.ac.uk) “Second Life”
- [site:.dundee.ac.uk](http://site:.dundee.ac.uk) “Second Life”
- [site:.manchester.ac.uk](http://site:.manchester.ac.uk) “Second Life”

... that there is a lot of activity in the UK. In fact, in January 2009 there was only one UK university where VWW could find no evidence at all of virtual world activity - teaching, learning, development, institutional campus, e-classes, student design work or research project.

A further complication is that universities disseminate information about their activities in different ways. While the majority do allow academics to write, blog and publicise what they like, there are still a minority that require responses to questionnaires to go through a senior person or central unit for authorisation.

In addition, internal communications about virtual world activities in universities can be variable. For the latest snapshot we received several returns from one university - but also an email from a long-term developer in the same university who didn't realise there were other academics in his institution doing the same thing. In the last four snapshot surveys there have been instances of contradictory returns: a central or PR unit will claim no activity, or an isolated example, while an academic in the same institution will happily describe a range of virtual world activities he or she has undertaken.

These issues should all be borne in mind when examining the survey results. The number of returns is considerable, enabling trends to be identified, and the detail provided first-hand by developers is highly valuable and often of a level not found elsewhere, however the questionnaire-generated data alone does not provide anywhere near a comprehensive account of virtual world activities in UK academia. Finding efficient methods that move Virtual World Watch towards that comprehensiveness is a challenge for the remainder of the project.

## 2.2 Categorising activities

Categorising activities in virtual worlds, in theory, has several uses:

- It becomes clearer which of the varied uses of virtual worlds are predominant.
- Subject areas with a significant amount of virtual world use can also be identified.
- 'Left field' applications of virtual worlds, for example in health and safety, can be identified and highlighted to others in the same category of work.
- Duplicated or closely related work, e.g. academics in several institutions creating the same resources or using a virtual world to solve the same teaching and learning issue, can be identified and those academics put in touch with each other.
- It is easier to comprehend and analyse themed groups of activity than a single block of nationally agglomerated activity.

The categorisation of virtual world activities in academia is not a trivial task. Various research papers categorise such activities, but usually just for the purpose of the research paper itself rather than a wider application.

The first snapshot attempted to generate a categorisation system based on a 'least effort' to 'most effort' scale:

1. Thinking, not planning.
2. Actively planning.
3. Doing Second Life research.
4. Developing tools.
5. Exhibition.
6. Departmental presence.
7. Supporting a course.
8. Campus-wide presence.

This has also been described as a continuum<sup>1</sup>, although some academic staff and units often jump into a 'most effort' stage first, e.g. developing a campus-wide presence before developing anything learning-related within it.

For this snapshot report, VWW has created a categorisation system based on just the survey questionnaire responses. Therefore, it is probably not appropriate for use in other situations, or even for other snapshots in this series. One option that was considered was categorising by subject area, such as following the RAE scheme. However, this quickly proved to be impractical due to many subjects (in the responses) having little or no activity, and many responses being independent of academic subjects.

Categorising by the type of activity is also inadequate, as it means that much activity falls into the area of 'teaching' (although perhaps this could be broken down further). The categorisation used in this report is therefore a mixture of activity and subject area and the 18 categories are not a definitive arrangement. It is quite easy to re-categorise the various responses according to some other criteria. The categories are also overlapping: for example, students needing to develop art and design objects from scratch in Second Life are also going to be doing a considerable amount of learning.

## 2.3 Acknowledgements

As ever, I am indebted the Eduserv Foundation for their patience and support. I am also grateful to the survey respondents and to several JISC staff, especially Jane Edwards and Shri Footring from the JISC Regional Support Centres.

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<sup>1</sup> Jeremy Kemp, Second Life Unifying Concepts:  
<http://www.slideshare.net/jeremykemp/sjsu-slis-campus-second-life-unifying-concepts>

### 3. Virtual world activities

As discussed in section 2.2, responses have been dropped into the most appropriate of 18 categories. It should be borne in mind that many responses can fit into several categories, and that the scheme was developed from just the responses to this particular snapshot, as opposed to some wider academic or research consideration.

#### 3.1 Studying virtual worlds in education

Quite a few universities are studying the use of virtual worlds for teaching, learning and education. This takes many forms, from the informal (an academic charged with finding out if Second Life is 'any good') to formal, externally funded research projects.

Research into the use of virtual worlds for teaching purposes has been undertaken for several years in various countries, but especially the US. There is probably a substantial duplication of effort happening in UK education, especially with respect to the broad research question.

"We are undertaking a pilot study looking at interprofessional education in Second Life."<sup>2</sup>

"We will be continuing with our in-depth research of learning in virtual worlds through several PhD studentships funded by the Leverhulme Trust. Researching the socio-political impact of learning in immersive virtual worlds<sup>3</sup> is a £513k project."<sup>4</sup>

"We are still exploring their potential for use as teaching technologies (tool kits) and as learning environments."<sup>5</sup>

"Originally, the goal of the [University of Hertfordshire Second Life] project was to gain exposure in a popular 3D social network but it has since been altered to include research into how such environments are able to facilitate communication and learning."<sup>6</sup>

"We used Second Life in the JISC-funded M3<sup>7</sup> (MUVE, Moodle and Microblogging-Twitter) project. We have now transferred M3 project outputs (interactive learning resources for international students) to the University of Southampton Second Life island."<sup>8</sup>

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<sup>2</sup> Elinor Clarke, Senior Lecturer, Midwifery and Associate Director, CIPeL, Coventry University.

<sup>3</sup> Learning research project at Coventry University: <http://cuba.coventry.ac.uk/leverhulme>

<sup>4</sup> Professor Maggi Savin-Baden, Director, Learning Innovation, Coventry University.

<sup>5</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>6</sup> Andrew Marunchak, Chief Developer, University of Hertfordshire's Second Life presence.

<sup>7</sup> M3 Project: <http://www.jisc.ac.uk/whatwedo/programmes/usersandinnovation/m3.aspx>

<sup>8</sup> Julie Watson, Senior Teaching Fellow, School of Humanities, University of Southampton.

“We are currently exploring Second Life with a small group for staff to look at the feasibility of using Second Life to exchange and work with other educational establishments or projects.”<sup>9</sup>

“We have an island<sup>10</sup> and are currently considering the best way of using the space to evaluate SL [Second Life] for teaching and learning purposes.”<sup>11</sup>

“My research includes the use of virtual worlds in education, and educational software development - SLOODLE and related projects.”<sup>12</sup>

“Virtual Learning Environment<sup>13</sup>: This project investigated pedagogical issues related to teaching within 3D virtual worlds using Second Life as the delivery platform. The objective of this project was to design, implement and optimise a learning environment which facilitates the effective delivery of teaching material in a virtual and distance learning context. Built in development tools and Linden Scripting Language were the main development tools utilized to achieve the project deliverable.

Extensive background research was carried out into the issues related to teaching in this medium, identifying the strengths and weaknesses of the delivery platform and the advantages and disadvantages of the technology involved. The project implementation involved extensive consultation with the Second Life educator community in the design and evaluation of the learning environment subsequently developed.

Two virtual learning environments were developed, one for lectures and the second for group and collaborative work.”<sup>14</sup>

### 3.2 Teaching staff about virtual worlds

The teaching of other institution staff about virtual worlds, even at a very introductory level, has several benefits, including:

- Myths about virtual worlds, e.g. ‘Second Life is just a game’, are dispelled, especially if the novice academics use the environment themselves.
- The potential for teaching and learning (hopefully) becomes more apparent.
- Academics have a better understanding of what their peers who use virtual worlds in education are doing.
- The proportion of academics who use virtual worlds in their work is still a (small) minority. More academics undertaking virtual world use will bring benefits to this community, in terms of resources, experiences and collaborators.

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<sup>9</sup> Mell Turford, Media Production Lecturer, Strode College, Somerset.

<sup>10</sup> University of York island: <http://slurl.com/secondlife/University%20of%20York/128/128/27>

<sup>11</sup> Kriss Fearon, Web Coordinator, University of York.

<sup>12</sup> Daniel Livingstone, Lecturer, School of Computing, University of the West of Scotland.

<sup>13</sup> Virtual Learning Environment:

<http://slurl.com/secondlife/Ulster%20Magee%203/199/45/22>

<sup>14</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

Several survey respondents indicated that staff in their institution either were taught or had virtual worlds made available to them.

“Teaching’ our staff - both academic and support - about virtual worlds, Second Life, and the possibilities of these as learning and teaching environments and tool-kits which can work alongside, complement, or even replace certain aspects of our current VLE.”<sup>15</sup>

“The presence is freely available for all staff to use and we encourage them to leave us feedback. We have streamed live events such as our Science and Technology Research Showcase and Digital Animation exposé into SL.”<sup>16</sup>

“We organised an in-world event on 16th December 2008 for interested learning providers from the region. The island was turned into a winter wonderland, complete with falling snow and an ice rink. 16 avatars from 9 organisations attended a mix of learning activities and entertainment. The programme consisted of reception drinks in the shared area of the island, followed by a grand tour of educational installations on other islands. This included Sloodle, Emerge etc. Upon returning to our island we had a treasure hunt competition, followed by skating and dancing to streamed music.”<sup>17</sup>

“I continue to provide free workshops and one-on-one teacher support for anyone that is interested in learning more.”<sup>18</sup>

“We held a number of induction events to allow interested members of staff to familiarize themselves with the environment and some of the facilities and tools available. We also held in-world discussions with other educators about their activities.”<sup>19</sup>

“At the OU, my COLMSCT fellowship is about enabling other associate lecturers to use Second Life effectively. This includes identifying transferable teaching skills, putting together a teacher’s toolkit and running some training sessions in Second Life. Clearly, I am not doing this from scratch but using resources already available in SL and building on work done by others.”<sup>20</sup>

“I run a small working group on virtual worlds as part of an organisation called EUNIS (European Universities Information Systems).”<sup>21</sup>

### 3.3 Teaching about e-learning and virtual worlds

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<sup>15</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>16</sup> Andrew Marunchak, Chief Developer, University of Hertfordshire's Second Life presence.

<sup>17</sup> Paul Miller, e-Learning Adviser, JISC Regional Support Centre Northern.

<sup>18</sup> Michele Ryan, Teaching Tutor, Department of Management Learning and Leadership, Lancaster University.

<sup>19</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>20</sup> Liz Thackray, COLMSCT Teaching Fellow, Open University.

<sup>21</sup> Andrew Rothery, Head of E-Learning Innovation, University of Worcester.

Perhaps not surprisingly, there are numerous academic courses concerned with e-learning. As virtual worlds have been used in education for several years, it is natural for their inclusion on many such courses, so students are aware of the contemporary range of e-learning tools and services.

As with many of these tools and social networking services such as Twitter, it is much easier to appreciate their value by 'having a go', rather than just being told or reading about it. This is much the same as learning to drive: you can't learn how to do it and pass your test just from taking the written exam and not getting into a car. Happily, it would appear that nearly all the responses that fell into the category of teaching about e-learning and virtual worlds involved the students in-world in some way, e.g. exploring, participating in discussions, making things.

"We are currently teaching some modules of the University of Edinburgh MSc in E-learning within Second Life. The MSc in E-learning is a fully online programme with around 130 part-time and full-time students currently enrolled. The MSc is a co-founder of the Virtual University of Edinburgh and uses a number of virtual world platforms for learning, teaching and research activities. (I am a co-tutor on some of these modules).

Classes in E-learning, politics and society; introduction to digital environments; introduction to digital game based learning; language, culture and communication in online learning; effective course design for E-learning; and information literacies for online learning are held each semester within Second Life."<sup>22</sup>

"I'm currently assisting a module called '3D Interactive Media'. It is the first we have run inside a networked virtual environment and is designed as a means of introducing students to the concepts of networked 3D worlds and cyberculture in general."<sup>23</sup>

"We introduced students to Second Life, via a module called Digital Cultures and Technologies where they can opt to practically explore 3D avatars, and online communities and environments. A few of these sessions - we've logged in as one avatar on the whiteboard - and as a group we've discussed and experienced the potentials and issues of this technology.

In February 2009 we'll be running our newly validated module 'Virtual Environments'; this will be the first time we take the entire cohort into Second Life to do an assessed project."<sup>24</sup>

"We have set up a closed island on SL for staff and students to use. There has been little demand for it. The only small pieces of teaching have been to demonstrate it, and to use it for one-off small group seminars in our Masters in e-learning as an experiment."<sup>25</sup>

"We're also beginning to prepare for the new MSc Digital Technologies for Learning degree which starts in September and will be 'housed' on TeesLife."<sup>26</sup>

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<sup>22</sup> Fiona Littleton, Educational Development Adviser, University of Edinburgh.

<sup>23</sup> Andrew Marunchak, Chief Developer, University of Hertfordshire's Second Life presence.

<sup>24</sup> Annabeth Robinson, Year Tutor, Design for Digital Media, Leeds College of Art and Design.

<sup>25</sup> Stuart Lee, Director, Computing Systems and Services, University of Oxford.

<sup>26</sup> Kate Boardman, Head of E-learning, University of Teesside.

“I am teaching 2nd and 4th year undergraduate classes on ‘Collaborative Virtual Environments’. I have a new distance learning class on ‘Introduction to Virtual Worlds’, starting in February 2009.”<sup>27</sup>

### 3.4 Students developing in Second Life

As an extension of the previous section, exploring an environment such as Second Life is better than just reading about it, but in many cases is not as useful or enlightening as developing in Second Life. What is perhaps underappreciated by many academics is the range of skills that are strengthened by such work, including:

- Digital presentation skills.
- Learning a particular language for development.
- Visualising objects, structures and functionality within a 3D environment.
- Mathematics and physics.
- Object and structure testing.
- Resource location (for using shared or public resources).
- Collaboration and discussion with other developers, and with visitors to your development.

This is in addition to fulfilling the subject-based requirements of the course.

Many responses detailed or indicated students developing in Second Life. In addition, most of the other developments made in UK Higher Education were created by students, either from scratch or in an area set up for them in-world. For example, the University of Wolverhampton has developed Kriti Island<sup>28</sup>, a space where digital media students can experiment with the environment. Meanwhile, students at Suffolk School of Arts<sup>29</sup> have developed various buildings and ephemera within Second Life.

“I run a course about 3D interactive environments so we do look at more how to create them.

We hope to have a few students explore interactive design in 3D next term (they have a choice between Second Life or x3d). Part of the island is also used by Bromley College.”<sup>30</sup>

“We are teaching first and second year computer science and information systems students on a 12 week module called Interactive Systems (total 138 students). The students learn how to program in Linden Script, and some simple 3D modelling. The module is 100% course work and their assignment this semester was to create an interactive virtual pet. We are collecting data on this project and will publish it in due course.

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<sup>27</sup> Daniel Livingstone, Lecturer, School of Computing, University of the West of Scotland.

<sup>28</sup> Kriti Island (University of Wolverhampton):

<http://slurl.com/secondlife/Kriti%20Island/128/128/47>

<sup>29</sup> Suffolk School of Arts in Second Life: <http://tinyurl.com/bsrw7b>

<sup>30</sup> Tony Ackroyd, Digital Media Programme Leader, University of Greenwich.

The reason we have chosen to use it as a teaching platform for introductory programming is because the students can see an immediate result in the virtual world from the scripts they write. It is easy for them to see the results of their program running in-world. They can also see what their peers are working on, which has a motivational effect. Technically speaking, it is quite an interesting language, so they learn useful programming concepts.”<sup>31</sup>

“We have held training workshops on how to build and create objects in Second Life and making objects interactive/animated.”<sup>32</sup>

“We are inviting students to examine the potential of virtual worlds through project work in various disciplines, particularly computer science and art at undergraduate level.”<sup>33</sup>

“Part of the ViCE project is concerned with ‘virtual poster sessions’, which 1st year undergraduate and MChem students will partake in as part of their course. This is intended to add to their training in communication and presentation skills. We are also developing the ‘window on a lab’ concept where activity in a teaching/research lab can be streamed into SL; this will allow school children and undergraduates alike to get a feel for what happens in these environments.”<sup>34</sup>

“We already have up a gallery for student work in Fine Arts - this will be a rolling programme of exhibitions, and is not as static as it looks, because it’s giving people a chance to ‘learn about how you curate a space and a collection’, and is already asking for an extension. I’m looking forward to lots of black tie invited previews :-)

Similarly, our digital and creative arts curator is building wildly different exhibits, to provide an outlet for internationally acclaimed student work currently only visible for a few days a year. In that all these students are learning to present their work in a professional field, and deal with private clients or companies like Pixar these interpersonal skills are sometimes missing in the traditional teaching environment.”<sup>35</sup>

“Student projects this year have ranged from developing content in Second Life to working on the SL client source code.

A public show-n-tell took place on the afternoon of 8th January 2009 at Virtualba sim (various locations). Significant parts of the student work will remain in the Sim, and some (such as the Club UWS and info-hub building) are likely to remain permanent landmarks.”<sup>36</sup>

“This semester’s project involved second year Multimedia Computing and Design students completing an assignment related to collaborative working in virtual worlds. The majority of students had no prior experience with Second Life.

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<sup>31</sup> Judy Robertson, Lecturer, Computer Science, Heriot-Watt University.

<sup>32</sup> Paul Miller, e-Learning Adviser, JISC Regional Support Centre Northern.

<sup>33</sup> Richard Mather and Andrew Middleton, Learning and Teaching Institute, Sheffield Hallam University.

<sup>34</sup> Simon Coles, School of Chemistry, University of Southampton.

<sup>35</sup> Kate Boardman, Head of E-learning, University of Teesside.

<sup>36</sup> Daniel Livingstone, Lecturer, School of Computing, University of the West of Scotland.

Students were divided into groups and allocated a building. They were asked to take pictures of the building in real life and use software tools such as Google SketchUp to prototype the building design before building it in Second Life<sup>37</sup>. After some building and scripting classes during lectures and practical sessions, students started the building process.

During their six week time frame, extensive camera footage as well as snapshots taken in worlds were accumulated. Students worked both during their allocated class times and also in their groups outside class times and with some communicating via email, via IM in Second Life and online tools.

The buildings were built and scripted in Second Life and delivered on schedule with excellent results. The eight buildings can now be seen on this island. After project completion students were provided a questionnaire based on their Second Life experience allowing them to express their views on issues such as software complexity, in world building and scripting, ease of use, any associated problems, if they intended to continue using Second Life and if they would start to explore virtual worlds. The overall focus of this project was on collaborative working in virtual environments.”<sup>38</sup>

### 3.5 Learning and teaching

By far the largest category of responses extracted for this survey was that of teaching and learning. The large majority of respondents to the questionnaire indicated this was one of, or the sole reason, for their use of virtual worlds. In addition, searches and anecdotal evidence point to many other UK universities using Second Life within one or more courses. For example, the University of Bedfordshire<sup>39</sup> has two islands in Second Life, one of which is dedicated solely to teaching and learning.

“Other areas of the University are using Second Life for teaching. Our latest project is helping to develop an MBA in E-commerce and using Second Life with activity-led learning in engineering. Our unit supports development and undertakes research in this area.”<sup>40</sup>

“There are plans to develop a tutorial area for some of our student cohorts.”<sup>41</sup>

“We are now designing e-learning courses to mesh with our current part time programs, we are active in our teach-the-teacher-SL program and several departments across the university are developing course material that includes SL modules or assignments. Additionally, we have a growing interest in using SL as a research tool.”<sup>42</sup>

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<sup>37</sup> University of Ulster Virtual Campus:

<http://slurl.com/secondlife/University%20Ulster%20Magee/250/151/37>

<sup>38</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>39</sup> Bedfordshire in Second Life: <http://www.beds.ac.uk/aboutus/second-life>

<sup>40</sup> Professor Maggi Savin-Baden, Director, Learning Innovation, Coventry University.

<sup>41</sup> Remy Olasoji, University of East London.

<sup>42</sup> Michele Ryan, Teaching Tutor, Department of Management Learning and Leadership, Lancaster University.

“At an upcoming Nottingham e-learning seminar (January 09), I have invited a colleague - who recently used our island to support his teaching - to present to the audience via SL. He is now in Lebanon and I will meet him in SL, he will then use the voice facility in SL and discuss his experiences to an audience in RL. I will relay questions to him from the audience.”<sup>43</sup>

“We are providing a Second Life stream to two courses, one partly supported with a grant from the Computing Subject Centre at the HEA and the other with funding from JISC. The university HR department is using Open Life for CPLD training sessions in our virtual office role play rooms. A course on distributed team working is offering students meeting space on Open Life. There are a number of tutors providing informal tutorial support to their courses and a significant number of scoping projects. Deep Think will see students this year.”<sup>44</sup>

“We are working on a project to create a new part-time MPhil for distance students to be delivered online. The programme will be offered by the Computing Department of the Open University starting from October 2009. We are constructing a virtual campus consisting of a Moodle site coupled with a Second Life island, called Deep Think, plus a number of synchronous Web 2.0 tools. The SL campus is now fully developed and we are in the process of evaluating it with volunteer users.”<sup>45</sup>

“Jonathan Crellin is teaching aspects of HCI, Emma Duke-Williams aspects of educational computing and a number of us have final year project students doing work in Second Life.”<sup>46</sup>

“We will be taking part in National Science and Engineering Week (7th March) with an exhibit which allows the 'peptide fruit machine' to randomly construct a tri-peptide, which is then submitted to a drug docking process, a result returned and the docked molecule rendered in front of the avatar. The docked molecule will get an 'energy score' which will enable a league table to be constructed during the event.”<sup>47</sup>

“Level 1 media styling students undertook a module 'Contextual Studies', using second life to build contemporary versions of historical fashion images. Level 3 fashion students are using Second Life for final year projects, while level 1 Business Studies students are taking part in library skills tutorials.”<sup>48</sup>

“We are now going into our second year of having an official presence in Second Life. In our first year, we used internal research funding to acquire our first region in Second Life, which was used for a variety of projects by the School of Computer Science, the School of Management, and the university library. The funding was primarily for a recreation of an archaeological site, the Akropolis Basilica in Greece, to help show archaeology students how a site would have looked around 2,000 years ago, and allow them to compare with its remains now present.

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<sup>43</sup> Andy Beggan, Learning Team Leader, University of Nottingham.

<sup>44</sup> Anna Peachey, COLMSCT Associate Teaching Fellow, Open University.

<sup>45</sup> Dr Lucia Rapanotti, Computing Department, Open University.

<sup>46</sup> Jane Chandler, Principal Lecturer, School of Computing, University of Portsmouth.

<sup>47</sup> Simon Coles, School of Chemistry, University of Southampton.

<sup>48</sup> Roger Emery, Learning Systems Developer, Southampton Solent University.

Computer Science also created a wireless traffic simulation, using NS2 for the simulation itself and then recreating the results using prims in Second Life, and a scripted lecture/teaching area to support staff working in Second Life. Computer Science and Management both used the island in teaching one of their course modules each.”<sup>49</sup>

“I’m interested in virtual worlds (Second Life in particular) as collaborative platforms for design and manufacture. To that end, I have been a participant in the Wikitecture project<sup>50</sup> which has been receiving a lot of media attention, both within SL and the mainstream press. I have twice run the class ‘Virtual Worlds for Design’ for architecture and engineering students<sup>51</sup>, namely 4th/5th year students and postgraduates.”<sup>52</sup>

“At Sussex, I am involved in a course which is based around developing learning experiences in SL. This is the second year of the course and we have learned from last year’s experience. The students will be developing their projects in SL and the intention is to use them with other students on appropriate courses.”<sup>53</sup>

“Yes - there is more emphasis [on using the University of Sussex island<sup>54</sup>] for e-learning - one project has been set up with the Music department where a mirrored event will take place in SL and a theatre performance in London. Also, the Informatics department is using SL for student assignments.”<sup>55</sup>

“We’ll be using the Research Observatory<sup>56</sup> structure and activities in SL to support Master’s students in IT, Statistics and Software Engineering in Semester 2 this year (Feb 2009).

Colleagues in Mathematics and Statistics have a presence in the offices on our island to support their Espresso Maths initiative, which offers support for students and staff in maths and statistics subjects in real life at lunchtimes in our main refectory. The SL presence allows students and staff who can’t get to the real life espresso maths help desk to access the same level of support in-world.”<sup>57</sup>

“As well as encouraging others, myself and colleagues are working on a project to help students learn to avoid plagiarism and cope with the surrounding issues. For this, we are using resources and facilities in Second Life.”<sup>58</sup>

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<sup>49</sup> J Ross Nicoll, Research Fellow, Computer Science, University of St Andrews.

<sup>50</sup> Wikitecture project: <http://studiowikitecture.wordpress.com/>

<sup>51</sup> University of Strathclyde SL island: <http://slurl.com/secondlife/Strathclyde/128/128/38>

<sup>52</sup> Dr Scott Chase, Senior Lecturer, Department of Design, Manufacture and Engineering Management, University of Strathclyde.

<sup>53</sup> Liz Thackray, DPhil student, University of Sussex.

<sup>54</sup> University of Sussex island: <http://slurl.com/secondlife/University%20of%20Sussex/75/16/38>

<sup>55</sup> Tony Hudson, Web Team manager, University of Sussex.

<sup>56</sup> UWE Research Observatory: <http://ro.uwe.ac.uk>

<sup>57</sup> Dr Liz Falconer, Manager, E-learning Development Unit, University of the West of England.

<sup>58</sup> Andrew Rothery, Head of E-Learning Innovation, University of Worcester.

### 3.6 Visualisation support

The use of Second Life for visualising and manipulating difficult and complex objects has been championed by several academics in the UK, and anecdotal evidence indicates possibly a much larger pool of such uses. For example, pharmacy academics at the University of Keele are using Second Life for visualisation work, while Anglia Ruskin University has been using Second Life with first year computer science degree students as an integral part of a course about the creation of digital artifacts. At City College Birmingham, Alan Wells has been innovative in the employment of virtual worlds, for example using Second Life to teach security CCTV engineers how lenses work.

“We've had 3rd year computing and engineering students building simulations for 1st year students in SL. Students have problems visualising complex algorithms and the 3D simulations are helping with this. 3rd year students were used to build the sim as they understand the problems they had with the topic, and so were better able to know what was required to help the 1st years with the subject matter. The 3rd year builds were useful for those students involved to learn a new language (LSL) and new skills (3D literacies; simulation visualisation; potential new environments for rapid prototyping/game design, etc), as well as the part of their own project work.”<sup>59</sup>

“Another project involves the possible use of Second Life as a landform visualisation tool with which to assist earth science and environmental students to familiarise themselves with a real world tract of land before engaging in field work. Other possible uses, such as the modelling of the visual impact of buildings and earthworks, might also arise from the work.”<sup>60</sup>

“I taught 5 x 1 hour sessions in the first semester on bacterial cell wall ultrastructure with particular reference to proteases involved in the host innate response to infection and the cognate defences that some bacteria deploy. This was possibly over-ambitious for a first attempt but it is not easy to strike a balance between learning opportunities for students and teachers at the same time as justifying the cost of the island. There is obviously a learning curve for all concerned. I also have four students using the island as part of their third-year projects.

I am presently building a feature for the island, viz a walk-round map of a bacterial genome that I may use in second semester teaching if it progresses sufficiently.”<sup>61</sup>

“We are just embarking on the Virtual Chemistry Experience (ViCE) project which is using SL as medium for public engagement and enhancing teaching/learning in the domain of Chemistry. This work will range from galleries of 'common molecules', through observation of real laboratory practice to visualisation and interaction with molecules. The University of Southampton island will host this material when developed. As a research project we are also developing aspects of remote laboratory monitoring and large/multi-dimensional dataset visualisation.”<sup>62</sup>

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<sup>59</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>60</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>61</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>62</sup> Simon Coles, School of Chemistry, University of Southampton.

“We have an island, Warwick University Maths<sup>63</sup>, in Second Life that was set up under an internal ‘Education Innovation Fund’.

The virtual environment makes visualisation of three dimensional mathematical objects easier. Tutorials are being developed to allow students to explore these objects in their own time (although I have also used Second Life projected onto a screen in a lecture with 250 students to demonstrate periodic orbits of dynamical systems on tori!). Quite often the ability to jump from thinking in 2D to 3D is a major reason why students who were good at A-level maths struggle with degree level. We are also trying to recreate our small group tutorial system in a virtual setting to explore the pros and cons of doing so.”<sup>64</sup>

“Engineering Education Island<sup>65</sup> has being created to allow student to learn about electronic and electrical engineering. A large number of demos have being created including Ac and Dc motors and rectification. These demos have been recreated so that avatars have the opportunity to walk around, inside and through these demos which are interactive. Many scripts have been applied to each demo allowing it to move as it does in real life.”<sup>66</sup>

“The giant PC project<sup>67</sup> created a giant PC modelled on a Dell XPS 720. The focus of this project was to teach students the internal architecture of a PC.”<sup>68</sup>

“I am involved in several Second Life projects, focusing on developing tools for teaching chemistry. We are still in the early stages of development but we are working on a molecule render and a poster presentation.”<sup>69</sup>

### 3.7 Social exploration

Virtual worlds are also being used to explore and consider aspects of society that would be otherwise difficult to comprehend. The display, media and communication facilities offered by worlds such as Second Life lend themselves to social exploration in a neutral, controlled environment with no distractions.

“We’re building a Buddhist monastery as part of a 2nd year course on the anthropology of Buddhism. It’s not designed to be ‘authentic’ - rather, we’re focusing on the student experience. A subset of the class will create avatars, learn to socialize in Second Life in all its indulgent glory, and then surrender all fashion, wealth and gender to become

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<sup>63</sup> Warwick University Maths: <http://slurl.com/secondlife/Warwick%20University%20Maths/>

<sup>64</sup> Dr David Wood, Director of Undergraduate Studies, Department of Mathematics, University of Warwick.

<sup>65</sup> Engineering Education Island: <http://slurl.com/secondlife/Ulster%20Magee%203/123/126/23>

<sup>66</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>67</sup> Giant PC project: <http://slurl.com/secondlife/University%20Ulster%20Magee/148/43/24>

<sup>68</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>69</sup> Stephen Wilson, School of Chemistry, University of Southampton.

temporary monks/nuns. After engaging with other inhabitants in Second Life as mendicant renunciants for a few weeks, they will go back to their ordinary life.”<sup>70</sup>

“Our School of Fine Art, History of Art and Cultural Studies has run live sessions with students considering aesthetics and cultural awareness (e.g. how avatar design is an expression of self).”<sup>71</sup>

“Every time I run my course in 'Online Education and Training' I generate a lot of interest, excitement, and ideas for applications by sending the participants into Second Life to take a look and participate in something that's going on.”<sup>72</sup>

It is interesting to compare this next example, which developed a virtual world perspective on the troubles in Northern Ireland, with the JISC-funded eLib CAIN<sup>73</sup> project, which created a web-accessible resource concerned with the same social topic.

“This project was designed to allow users from different communities to meet in a non threatening environment to gain an insight into the troubles in Northern Ireland. This project contains symbols, flags and murals which can be seen in area in Northern Ireland.

There is one main building<sup>74</sup> which houses a number of videos which include information on:

- The history of the troubles in Northern Ireland.
- Remembering the victims of the troubles.
- The conflict in Northern Ireland.
- The culture in Northern Ireland.

Three videos on the peace line which is located in Belfast to avoid conflict between the two sides of the communities. (Some of these videos are spoken in Irish language.) There are two other buildings, one is an ‘outdoor meeting venue’ called the ‘Seminar Venue’ and the other the ‘Conference Venue’. These both have the ability to show PowerPoint presentations and a media screen as well as seating.

There is an area which is dedicated to murals. The murals have been photographed and imported into Second Life. There are two walls: one is a slideshow of these photographs of murals with additional text whilst the other is a looping preview of all the murals. Additionally there is a mural notice board which contains links to more information on murals, a video on murals and some background information. There is seating provided.

Close to this is the flag park, this has been used to display sixteen flags which are the main flags used in Northern Ireland from both sides of the community, these flags are

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<sup>70</sup> Dr Will Tuladhar-Douglas, Anthropologist, Department of Religious Studies, University of Aberdeen.

<sup>71</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>72</sup> Anita Pincas, Senior Lecturer, Continuing and Professional Education, University of London.

<sup>73</sup> Article describing the CAIN project: <http://www.ariadne.ac.uk/issue9/cain>

<sup>74</sup> INCORE Peace reconciliation project:  
<http://slurl.com/secondlife/Ulster%20Magee%202/84/176/23>

all named and when touched provide a note card with information, within each of these note cards is a URL which will allow for further reading. Again a dedicated notice board is located in the flag park which has a video on flags and their history, a link for further information and background information.

There is also an area recreating the peace line which is located in Belfast; this is the largest feature within the project and has been recreated so that is it as realistic as possible. In keeping with the realism of the peace line, it has been designed so that users can actually leave a message/a graphic on the peace wall. There are also a number of photographs of the peace line again with text and links for more information. A notice board is located close to this peace line which has a video, background information and a link for further information.

Finally, there is a recreation of 'Painted Kerbstones' which is a common sight in Northern Ireland. Both sides of the community use colours of each respective flags and paint the kerbstones. In Second Life the kerbstones from both sides of the community meet in the middle. Also provided in this location is a picture of a painted kerbstone from real life and some information with a link to further reading."<sup>75</sup>

### 3.8 PhD student support

As with previous snapshot surveys, a small number of respondents indicate the use of Second Life for PhD and remote research or tutorial work. Anecdotal evidence points to the use of Second Life for this purpose being more widespread, but as one of a range of electronic communication tools shared by supervisors and students.

It should also be borne in mind that the unique nature of the Open University means that nearly all of their research students are remote from the physical campus, with many using online communication with their supervisors.

"At the moment we are mainly evaluating the technology, and have colleagues who conduct PhD supervision in our virtual space."<sup>76</sup>

"Some other work is taking place around support where students will be able to use SL in cases where face to face may be too off putting or uncomfortable for some students."<sup>77</sup>

### 3.9 Health, medicine and the biosciences

The academic domain with the most examples of Second Life and virtual world use is the health and medical sector. Some institutions, such as Imperial College, Plymouth and Portsmouth Universities, have invested significant resource in such developments over several

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<sup>75</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>76</sup> Dr Lucia Rapanotti, Computing Department, Open University.

<sup>77</sup> Tony Hudson, Web Team Manager, University of Sussex.

years. Anecdotal and other soft evidence points to other academic institutions using Second Life in this area, especially in nursing and midwifery teaching.

“We have had a university island for some time but have only recently started to make some inroads. The School of Health and Bioscience now has a wet lab with a PCR experiment and in the very near future we will be adding further experiments.”<sup>78</sup>

“I am involved with colleagues in the Medical Education Centre, College of Medicine and Veterinary Medicine who are involved in a project entitled ‘A virtual bug’s life’ which has students working on projects within many different types of virtual worlds as part of their student selected component.”<sup>79</sup>

“We are developing a simulation of a full working model of an X-ray machine, which will be for use of radiology students later this semester. This allows for safe practice, is flexible either to be used in a class or for self study, and is scaleable - only one exists on campus but we can copy the simulation as many times as we wish.

We are also developing a full clinical ward to support scenarios of various types.”<sup>80</sup>

“The Faculty of Medicine at Imperial College London has developed a Virtual Hospital in Second Life that aims to design game-based learning activities for the delivery of virtual patients that can drive experiential, diagnostic, and role-play learning activities supporting patients’ diagnosis, investigation and treatment.

Phase I of this project (<http://www.elearningimperial.com>) focused on the delivery of a virtual patient in the area of Respiratory Medicine following a game-based learning model in Second Life. A pilot was carried out in March 2008 with 43 students. The feedback received has informed the development of Phase II which incorporates a multi-patient approach.”<sup>81</sup>

“We are now experimenting with our successful University of Plymouth Sexual Health SIM<sup>82</sup> on the New World Grid<sup>83</sup>, a French OpenSim-based grid.”<sup>84</sup>

There is progress planned for next year in this area:

“I would like to look at simulation for midwifery in SL.”<sup>85</sup>

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<sup>78</sup> Rose Heaney, Learning Technology Advisor, School of Health and Bioscience, University of East London.

<sup>79</sup> Fiona Littleton, Educational Development Adviser, University of Edinburgh.

<sup>80</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>81</sup> Maria Toro-Troconis, Senior Learning Technologist, Faculty of Medicine, Imperial College London.

<sup>82</sup> Sexual Health SIM: <http://osurl.org/grid.newworldgrid.com:8002/Eleniel/58/45/33>

<sup>83</sup> New World Grid: <http://www.newworldgrid.com/>

<sup>84</sup> Maged Kamel Boulos, Faculty of Health and Social Work, University of Plymouth.

<sup>85</sup> Elinor Clarke, Senior Lecturer, Midwifery and Associate Director, CIPeL, Coventry University.

### 3.10 Law and legal

A small number of respondents outlined the possibility of using virtual worlds for legal training. Creating a courtroom in Second Life (there are several) is a more convenient and cheaper alternative to mocking up the environment in 'real life'. Second Life's communication tools, especially the ability to record dialogue, lend themselves to court case re-enactment and analysis. 67 UK universities submitted their law department to the 2008 RAE process<sup>86</sup>, indicating a substantial yearly intake of students in this subject area. There is obvious potential for shared and collaborative court training between these 67 departments in Second Life if such facilities were funded and developed.

"Law students have been following a 6 week PBL (problem based learning) scenario where they have been investigating aspects of online law and creating resources to share with each other and future cohorts."<sup>87</sup>

"In the very near future we will be creating some crime scene scenarios for use by forensic science students."<sup>88</sup>

"Our future developments include a court."<sup>89</sup>

### 3.11 Art and design

The use of Second Life in art and design courses has been evident since the first snapshot. This is not surprising, as the environment lends itself to the transplanting of real world art, e.g. paintings, into a virtual space, and objects, structures and functional devices can also be created from scratch.

As with previous snapshot reports, several responses were received that fit inside a general art and design category. Web searches and anecdotal evidence indicate that this particular use of Second Life may be far more widespread. For example, Elizabeth Swift, who teaches Drama and Performance Studies at the University of Worcester, has several students who have been doing some virtual improvisation and she is hoping to set up a research project around scenic design in Second Life. It is likely that there are many academics using Second Life for similar purposes, especially in the newer universities, art colleges and further education institutions.

"I've been exploring Second Life as a practising artist for several years. Recently I took over ownership of The Port sim exploring its use a space for a Community of Practice, with an interdisciplinary range of artists, designers, filmmakers and architects exploring the metaverse. The knowledge gained is continually recycled into my own teaching, and observations of using Second Life as a platform for artists, particularly with a bent to Life Long Learning."

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<sup>86</sup> 2008 Research Assessment Exercise: <http://www.rae.ac.uk/>

<sup>87</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>88</sup> Rose Heaney, Learning Technology Advisor, School of Health and Bioscience, University of East London.

<sup>89</sup> Remy Olosoji, University of East London.

“The School of Design at Solent has developed Solent Life Island<sup>90</sup>. It is used for fashion, media styling, digital music and product design students, as well as by business studies students. It includes a catwalk, nightclub, meeting areas, galleries, and sandboxes.

We are using Sloodle tools to link VLEs to SL enabling students to blog reflective journals direct to their VLE space.”<sup>91</sup>

“I am making a movie of the relaunch of Skinningrove Jetty in Second Life, to develop the same in Real Life. The project has moved on somewhat and has a screening date of February 5th at the University of Teesside’s Animex International Animation Festival. The project involves 2 schools, university staff and students, community groups and a Member of Parliament.”<sup>92</sup>

“The Design for Digital Media course has its own island, The Collective, which we purchased in March 2007.”<sup>93</sup>

We originally rolled out Second Life to the students via Personal Development back in 06/07, where students have opted to explore Virtual Worlds within their own work. This has led to some students finding work-experience in Second Life - particularly of note, ‘Artisan Hawks’ was commissioned by Penguin books to create a Blue Ant statue for William Gibson’s booklaunch in SL. ‘Jetsunami Duell’ in 2008 has done a virtual world based Work placement, with Associated Northcliffe Digital - this has included creating content for the DMGT building in SL London.”<sup>94</sup>

### 3.12 Machinima

The Wikipedia definition of ‘machinima’ is currently:

“a portmanteau of machine cinema, [machinima] is a collection of associated production techniques whereby computer-generated imagery (CGI) is rendered using real-time, interactive 3-D engines instead of professional 3D animation software.”<sup>95</sup>

The combination of virtual environments and recording tools open up machinima possibilities for students. A high level of technical skill is currently required for using Second Life and similar environments in this way. Therefore, either a skilled and experienced academic or a group of motivated and technically competent students (preferably both) are required to make good use of Second Life for producing machinima.

“Over the last two years, we have set a couple of Machinima briefs, for students interested in Moving Image projects to explore new techniques.”<sup>96</sup>

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<sup>90</sup> Solent Life island: <http://slurl.com/secondlife/Solent%20Life/54/50/23>

<sup>91</sup> Roger Emery, Learning Systems Developer, Southampton Solent University.

<sup>92</sup> Steve Thompson, Community Media Coordinator, Institute for Digital Innovation, University of Teesside.

<sup>93</sup> <http://slurl.com/secondlife/The%20Collective/19/95/22>

<sup>94</sup> Annabeth Robinson, Year Tutor, Design for Digital Media, Leeds College of Art and Design.

<sup>95</sup> Wikipedia entry for machinima: <http://en.wikipedia.org/wiki/Machinima>

<sup>96</sup> Annabeth Robinson, Year Tutor, Design for Digital Media, Leeds College of Art and Design.

“We found great value in experimenting with the use of virtual worlds for film-making using machinima techniques. We found that virtual worlds can be a cost-effective, accessible space for creating a range of short films that can support teaching and learning activities.”<sup>97</sup>

“Machinima workshops for staff and students, as well as local colleges (particularly performing arts) and community groups.”<sup>98</sup>

“A group of media students are undertaking a project on creating machinima and guidance on the use of the event simulator described above as part of their interactive media course.”<sup>99</sup>

### 3.13 Safety and risk

As an extension of machinima, the ability to create scenarios, use them, replay them and record them provides opportunities for safe exploration of ‘risky’ environments. Situations can be set up and explored, with random or surprise elements added, e.g. an unexpected accident in a recreated factory. Students acting through their avatar can react (or not!); the whole incident can be recorded, then instantly replayed for debriefing and analysis.

This offers a quick way of providing initial training and awareness in a no-risk environment, an issue of increasing importance due to the high profile of health and safety legislation and associated legal issues.

However, while using virtual worlds for safety and risk training and analysis is cheap, easy and convenient, it should be remembered that they do not provide 100 percent training. At some point, the fireman has to confront real smoke and fire; the doctor has to make the first incision of his or her career into human flesh; the quarry worker has to handle real explosives.

“We have developed a virtual care home in Second Life for ‘patients’ with moderate to severe learning disabilities. Designed with clinical management students in mind, the care home is a basis for strategy development, whereby the students undertake scenarios in the care home such as an epidemic, a fire outbreak, a poorly managed staff team or an unhelpful higher being. They must collaborate with each other to come up with a convenient strategy that should effectively solve the scenario.”<sup>100</sup>

“We have developed a virtual quarry taking up an entire ‘island’ for quarrying students in conjunction with the Institute of Quarrying. This work is still in progress and is intended to replicate real quarrying situations (some of which are hazardous): dangerous overhangs; explosions; hazardous working vehicles and to have students moving around the quarry identifying those hazards.”<sup>101</sup>

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<sup>97</sup> Richard Mather and Andrew Middleton, Learning and Teaching Institute, Sheffield Hallam University.

<sup>98</sup> Steve Thompson, Community Media Coordinator, Institute for Digital Innovation, University of Teesside.

<sup>99</sup> Dr Liz Falconer, Manager, E-learning Development Unit, University of the West of England.

<sup>100</sup> Professor Maggi Savin-Baden, Director, Learning Innovation, Coventry University.

<sup>101</sup> Pete Radcliff, Manager, e-Dev team, Learning Technology Lab, University of Derby.

“I will be working on a project to determine whether Second Life is a suitable environment within which to develop students' business enterprise skills. There is enormous potential for students to experience the range of activities and pitfalls involved in the establishment and successful management of a business with minimal financial risk.”<sup>102</sup>

“The build project already presented at ReLIVE'08 is scripting a visit to a food factory where trainee trading standards students can put into virtual practice all the things they should have learnt - Teesside has quite a bit of land, and quite a lot of money, but not enough to build our own working factory environments! These scenarios echo some of the excellent healthcare work done, for example where you need to remember to wash your hands before and after dealing with patients and make the right selections for test requests.”<sup>103</sup>

“We are just completing an event simulator<sup>104</sup> that can run scenarios in a set that has been created rather like a movie set. In this case it is to support teaching risk, accident causation and accident investigation to Master's students in environmental and occupational health subjects.

The students gather in a learning space above the set and the tutor explains how the system works and the way it will be used for the particular session. The tutor has control of the scenario as it plays, and can either run it through from start to finish, or stop it scene by scene. So, for example, a group of students might be split into 2: witnesses and investigators. The witnesses go down to the simulation set and the investigators stay at the gathering point.

The tutor runs the simulation through - in this case a fork lift truck accident in a small warehouse which the witness students can view through their avatars, who will be guided to viewing points before the simulation begins. The simulation uses realistic representations of equipment, and 'crash test dummies' as the players so they can be easily distinguished from avatars in the vicinity.

The accident plays through, with actions, sound and 'conversations' between the players. When the accident has happened and there is a static aftermath scene, the investigator group go down from the gathering point and go about investigating the accident. They can see the aftermath, interview the witnesses, pick up information from clicking on objects in the vicinity and get documentation from a filing cabinet in the offices attached to the warehouse.

In real life they then reconstruct the accident using fault or event tree analysis techniques and then go back into Second Life, say a week later, where the accident will be replayed so they can compare their reconstructions with the actual event. We believe the potentials for accident analysis, accident causation theory and risk reduction studies are tremendous.”<sup>105</sup>

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<sup>102</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>103</sup> Kate Boardman, Head of E-learning, University of Teesside.

<sup>104</sup> UWE event simulator: <http://slurl.com/secondlife/Elearning%20at%20UWE/110/128/35>

<sup>105</sup> Dr Liz Falconer, Manager, E-learning Development Unit, University of the West of England.

### 3.14 Technical developments

This section has some overlap with other sections, such as students making things in virtual worlds. Technical developments, for example creating tools for other academics to use in their work, teaching or learning, forms a significant activity for some university projects. As with digital library projects, it will be interesting to see how much these tools are used by others.

“Staff from the University are also involved in the technical development of Sun Microsystem's Project Wonderland resource.”<sup>106</sup>

“Self directed interest in Second Life has led to several students exploring Game Mod tools like UnrealEd and Steam. This in turn has me evaluating a game development program called Unity - (<http://unity3d.com>). This is the software used to develop 'FusionFall' and several other recent MMORPG's. My initial interest with Unity is how students can progress their skills learnt from using Second Life, into more industry based game design skills.”<sup>107</sup>

“The Second Life Toolkits project is undertaken on behalf of The Higher Education Academy Subject Network for Information and Computer Sciences by The Technology Supported Learning Group. It has produced 2 toolkits for academics wanting to use Second Life to support their teaching:

A generic teaching toolkit: a range of Second Life equipment and materials which will facilitate teaching within Second Life. For example multi-gadgets for teaching which bring together such things as whiteboards, PowerPoint displays, lecterns, student queuing tools, assessment tools, timers and office hours tools in an easy to use package with incorporated instructions for use and details about how to customise the tools for particular activities.

An ICS subject toolkit: sample resources specifically designed to show academics a range of ways of using Second Life to teach ICS topics together with details of existing resources within Second Life that can be used to support student learning.”<sup>108</sup>

“The PREVIEW project for paramedic problem based learning is coming to an end in March, but is morphing into a couple of other projects. A key one for us is PIVOTE - which is the name for the Open Source version of the Medbiquitous Virtual Patient player we developed for PREVIEW. This will let educators and trainers author an immersive learning exercise via the web and then play it in any virtual world (or on the web). We hope to formally launch this in February, and are in early Beta with a couple of educational organisations.

A second Post-PREVIEW stranding is taking the chatbot and PIVOTE work to Derby University to look at its use in psychology training. We are continuing to support Coventry University in their use of the chatbots.”<sup>109</sup>

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<sup>106</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>107</sup> Annabeth Robinson, Year Tutor, Design for Digital Media, Leeds College of Art and Design.

<sup>108</sup> Jane Chandler, Principal Lecturer, School of Computing, University of Portsmouth.

<sup>109</sup> David Burden, Daden Limited (independent developer).

### 3.15 Multi-department use

Some responses, especially from universities such as Edinburgh, Southampton, Teesside, the West of England and the Open University, show that several or many departments are using virtual worlds for learning, teaching and other purposes. This isn't really surprising: the technology is subject independent; the communication tools, ability to integrate with learning materials and the development facilities offer something for many areas of learning and teaching practice.

There is also anecdotal evidence that some of those further education institutions making use of Second Life are doing so across several departments. For example, Barnfield College<sup>110</sup> is developing a substantial presence in Second Life for a range of teaching, learning, student and other activities.

“We currently have one of nine islands on Virtual University of Edinburgh (Vue). The Vue group is a virtual educational and research institute bringing together all those within the institution interested in the use of virtual worlds for teaching, research and outreach. The Business School; School of Informatics; Arts, Culture and Environment; Medical Visualisation; School of Education and many more are actively involved with Vue.”<sup>111</sup>

“We are exploring using SL to provide a web based campus<sup>112</sup> to support teaching and research. This is a fairly new initiative for the University (since September 2008), but even in this relatively short timeframe the island has already been used to support teaching and research activities.

Second Life has been used to support teaching of undergraduates, as well as sessions aimed at staff who teach. We have also developed a sand box with freebies and tutorials to further develop SL skills, plus additional online support via our e-learning support website. We plan to use a combination of online support and taught sessions (in Second Life and Real Life) to widen exposure to the potential of MUVes for teaching and learning.”<sup>113</sup>

“We are researching and teaching in Second Life. Currently we have finished building our island and are actively using it to teach Law, Radiography, 3D interactive media, real time media streaming, 3D animation, creative writing, Computer Science and much more.”<sup>114</sup>

“There has been interest from other departments in the college, particularly Fashion, Interior Design and Critical Studies. Hopefully over the next few months, staff will have an opportunity to explore 'hands-on' the potential of SL for their disciplines. It is a particularly useful time as there is a drive within the college for courses to use more e-

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<sup>110</sup> Barnfield College promotional video: <http://uk.youtube.com/watch?v=-d94NVQ9QEI>

<sup>111</sup> Fiona Littleton, Educational Development Adviser, University of Edinburgh.

<sup>112</sup> University of Nottingham:

<http://slurl.com/secondlife/University%20of%20Nottingham/98/43/25>

<sup>113</sup> Andy Beggan, Learning Team Leader, University of Nottingham.

<sup>114</sup> Dave Lee, Virtual Campus Manager, University of Hertfordshire.

learning within their curriculum. To aid this, a section of the island has been set aside as a common sandbox for all the college staff to use.”<sup>115</sup>

The Open University has developed a considerable presence within Second Life over several years:

“Open Life<sup>116</sup> is the central OU presence in SL and has a welcome building and sandbox as well as a number of spaces that can be booked and used for a variety of activities including tutorials, lectures, teaching/learning activities, visiting speakers, group builds, parties, formal and informal meetings etc. For example, in November our main events space was used to host the conference cafe that supported ReLIVE08 and in December it saw the first ever performance of the OU inworld Christmas Panto.

Open Life Village has only just arrived (01/01/09) but is the next step in our project to support the OU inworld social community, who were previously located in Halls on Open Life and then Shomebase. Open Life Village will be developed according to a village metaphor where members of the OU community (staff and students) can rent ‘houses’ and use communal space for group activities. For example the community recently presented an art exhibition on Shomebase - in future they will be able to do so within the Village. The community is actively involved in the development of the village and their input has been canvassed via a survey as well as lots of informal discussion.

Open Life Ocean is an open space sim dividing Open Life from Open Life Village. This helps demonstrate the distinction that there will eventually be between the formal and informal learning spaces whilst maintaining the real world metaphor for the division, so users can fly or sail between islands rather than have to teleport between spaces that are adjacent.”<sup>117</sup>

“Deep Think is part of the welcome/orientation area. As well as the welcome/orientation area and the traditional sandbox, we have:

- A (rather impressive) auditorium and lecture theatres for large scale events (up to 140 avatars).
- A study area with an exhibition centre, breakout spaces, and staff and students common rooms.
- A very cool library area directly linked into search engines and bibliographical databases; it also includes a custom-made resources store and browser for audio and video material, as well as pdfs, ppts, etc.
- Our beach bar is quite fun with interactive pool tables and dance floor.”<sup>118</sup>

### 3.16 Providing hosting for academic institutions

UK Education Island<sup>119</sup> continues to offer hosting for a collection of institutions, departments, research groups and lone academics, as well as support services such as JISCmail. The

<sup>115</sup> Annabeth Robinson, Year Tutor, Design for Digital Media, Leeds College of Art and Design.

<sup>116</sup> <http://slurl.com/secondlife/Open%20Life/97/48/25>

<sup>117</sup> Anna Peachey, COLMSCT Associate Teaching Fellow, Open University.

<sup>118</sup> Dr Lucia Rapanotti, Computing Department, Open University.

increased interest from the JISC Regional Support Centres in how institutions are using virtual worlds has led to support such as site hosting for colleges and universities in their areas:

“We have established an island (RSC Northern Learning Island<sup>120</sup>) for interested colleges and other supported learning providers to experiment with ideas for learning activities. 12 providers have their own individual development parcels on the island.

The aim of the RSC Northern Learning Island is to provide a place for learning providers to investigate how virtual worlds might be used as settings for interaction, collaboration, learning, and experimentation. The overall goal is to enable learning providers to explore the potential of virtual environments and share knowledge and experiences. Some are already planning to acquire an island of their own for more ambitious work as they have outgrown their small plot.

There is a communal central area consisting of RSC Northern reception, amphitheatre, exhibition area and directory of island occupiers/facilities. A section of the island is designated for film making (machinima), with an adaptable diorama and terraformable landscape for creating sets. This area is bookable for fixed periods and is open to any of the learning providers supported by the RSC.”<sup>121</sup>

“Our ILT unit has a plot on the JISC Regional Support Centre Northern sim.”<sup>122</sup>

### 3.17 Marketing

It is inevitable that universities use virtual worlds for marketing purposes. This is because of the perception that future students are possibly users of virtual worlds such as Second Life. Whether the number of students actually recruited justifies the creation of an in-world university is a matter of debate. Perhaps this is why the proportion of universities recreating their campus in Second Life solely for marketing (as opposed to teaching and learning, or student design work) purposes is now very small.

“Recently I produced (in conjunction with the student television station) the first episodes of a news program for SL educators which is filmed inworld and explores different educational islands, interviews SL teachers and gives the latest calls for papers and bids. I hope we will be able to produce it on a regular basis.”<sup>123</sup>

“I’m using SL as a marketing tool giving visitors a sense of the University and its campus but also the University has recently purchased another region for use with e-learning.”<sup>124</sup>

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<sup>119</sup> UK Education Island: <http://slurl.com/secondlife/Education%20UK/223/32/22>

<sup>120</sup> <http://slurl.com/secondlife/RSC%20Northern%20Learning/140/124/25>

<sup>121</sup> Paul Miller, e-Learning Adviser, JISC Regional Support Centre Northern.

<sup>122</sup> David Wardhaugh, IT Development, Newcastle College.

<sup>123</sup> Michele Ryan, Teaching Tutor, Department of Management Learning and Leadership, Lancaster University.

<sup>124</sup> Tony Hudson, Web Team Manager, University of Sussex.

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“We’ve released our island<sup>125</sup> to staff, students and the public. Not that we’ve particularly encouraged the public yet, as we’re not sure there’s much to see (although we do have some quite cool fireworks for special occasions!) yet.

We spent quite a lot of time looking at other campuses and evaluating the balance between a replica campus and a free space. We decided on creating representations of the two most iconic structures on campus, so that it would be recognisable, and because they fitted with some of the space we wanted to create. Apart from that (which included judicious use of artistic licence with geography to take advantage of a nice sunset for our offices!) we have only made a rough identity of layout and left the rest of the island to be developed little by little in a freer way.

We have built the students a bar, as they wanted somewhere to hang out, and one or two have asked about building the Student Union, which is equally iconic to them as Middlesbrough Tower is to the staff. However, we’re looking at a compromise which gives them a bigger ‘bar’ and incorporates a stage area and can also be used for events, both conference and performance.”<sup>126</sup>

### 3.18 Library involvement

The libraries of several universities are involved in Second Life development work in some way. However, the amount of interest and activity still seems proportionally much smaller than such activity in the US academic library sector.

“I am exploring ideas with our Librarian...”<sup>127</sup>

“I am running a small-scale pilot project<sup>128</sup> part-funded by our Library who are also using the island to provide in-world support to distance learners.”<sup>129</sup>

“The Library has developed the island Solent Life 2<sup>130</sup>. This is a library skills island adjacent to the main island.”<sup>131</sup>

“The special collections section of the library has a building on the island which presents information about rare books.”<sup>132</sup>

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<sup>125</sup> University of Teesside island: <http://slurl.com/secondlife/TeesLife/86/43/24>

<sup>126</sup> Kate Boardman, Head of E-learning, University of Teesside.

<sup>127</sup> Tony Ackroyd, Digital Media Programme Leader, University of Greenwich.

<sup>128</sup> University of Liverpool Port Island:

<http://slurl.com/secondlife/Liverpool%20University%20Port/211/204/25>

<sup>129</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>130</sup> <http://slurl.com/secondlife/Solent%20Life%202/211/66/22>

<sup>131</sup> Roger Emery, Learning Systems Developer, Southampton Solent University.

<sup>132</sup> J Ross Nicoll, Research Fellow, Computer Science, University of St Andrews.

## 4. Other virtual worlds

Though Second Life is the predominant virtual world used by UK academia, there are plenty of similar environments that could be used for educational purposes. For example, Sarah Robbins recently released a comparative chart<sup>133</sup> listing over 70 virtual worlds, many of which have some kind of educational potential.

Since the first snapshot survey, there has always been a core of academic respondents who have been keen to explore several worlds, or ones other than Second Life. Reasons for this include:

- Being uncomfortable with the ‘open’ nature of Second Life, and looking for alternatives.
- Wanting to host the virtual worlds themselves; again, to have more control over the environment.
- Payment issues with Linden Labs, or technical difficulties, e.g. lack of sufficient IP addresses.
- Looking for benchmarks against which to compare Second Life.

Since the last snapshot survey, there has been a ‘buzz’ in the UK academic virtual world community regarding OpenSim. This particular virtual world offers some compatibility and object transference capabilities with Second Life, as well as the ability to self-host (and therefore have more control over) the environment. OpenSim has therefore piqued the interest of several respondents:

“Through the Open Habitat<sup>134</sup> project, we are piloting various approaches to teaching and learning in Second Life and OpenSim with Art and Design students based at Leeds Met. We’ve been mostly using OpenSim standalone to provide large numbers of students with a quick, sign-up free virtual world hit, following this up with a more intense Second Life project with a smaller group of volunteers.

The Open Habitat project has highlighted many issues regarding the use of virtual worlds in formal education. Whilst I value the power of role play and the endless sources of learning in a truly massive online world like Second Life, I also need a more controlled environment that all of my students can easily access. I am nervous about requiring students to sign up to a commercial service, and I can envisage a situation in the future where we provide a closed virtual environment to support our enrolled learning community, with an option to enter an open grid, either via the OpenSim hypergrid or Second Life (or both).

I am excited about the potential for welding together bespoke web-based tools with OpenSim to provide students with a virtual studio environment to support the studio-based learning approach that has proved so successful in art and design education. We are currently testing out our own eportfolio-like tool in the School of Contemporary Art and Graphic Design at Leeds Met, combining the best ideas from Web 2.0 to provide a tool that serves the needs of our students. The addition to this tool of a virtual world that uses the same user authentication, and accesses a central database of student

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<sup>133</sup> Facet chart of 70+ virtual worlds: <http://twitter.com/Intellagirl/status/1168520887>

<sup>134</sup> Open Habitat Project: <http://www.openhabitat.org/>

generated content, is an attractive prospect. I think that OpenSim currently looks like the best candidate for this job.”<sup>135</sup>

“We installed OpenSim on our university network two weeks ago and are looking at its potential<sup>136</sup> to stage an internally funded project to embed our Blackboard VLE in a student produced Virtual World. It's very, very early days, but the project will be led by staff in the animation department and offer students who are studying animation the opportunity of creating their avatars, designing and building in a 3D environment and developing a personalised portal to learning resources on Blackboard. We feel that these students in particular would engage with the VLE more if embedded in an environment which they enjoy and have helped create.”<sup>137</sup>

“The latest OpenSim server builds offer outstanding performance and are rapidly maturing and becoming reliable for everyday use. Porting objects and scripts (but not all of them) from Second Life to OpenSim is now possible.”<sup>138</sup>

“Outside of Second Life, we have an OpenSim grid running with a few regions set up. We are applying for funding to support an OpenSim grid for the UK academic community. This would involve providing centralised user, inventory, asset, messaging and grid OpenSim services, technical support for institutions wishing to perform their own OpenSim installations and developer time to progress OpenSim towards being more suitable for educational use.”<sup>139</sup>

Several other academic developers are keeping a watchful eye on this particular virtual environment:

“I personally doubt that OpenSim, standalone or networked, will be feasible for us as a replacement for SL in the next academic year but am watching with interest the experiences of early adopters. It will certainly put Linden Lab on their mettle and a premium on inter-operability.”<sup>140</sup>

“We expect to see more interest in Open Sim, and possibly Wonderland - emphasising the need to keep the ‘intelligence’ of any solution out of any one particular virtual world (hence the way PIVOTE and Discourse work). We also still see no ‘Second Life killer’ out there.”<sup>141</sup>

An array of other virtual worlds are being considered, or used, by academics:

“We have started researching Unity for simulations, visualisations and to build a private MUVE that is webpage accessible.”<sup>142</sup>

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<sup>135</sup> Ian Truelove, Principal Lecturer, Faculty of Arts and Society, Leeds Metropolitan University.

<sup>136</sup> OpenSim at the University of Lincoln:

<http://learninglab.lincoln.ac.uk/2008/11/12/opensim-for-private-virtual-worlds/>

<sup>137</sup> Joss Winn, Technology Officer, Centre for Educational Research and Development, University of Lincoln.

<sup>138</sup> Maged Kamel Boulos, Faculty of Health and Social Work, University of Plymouth.

<sup>139</sup> J Ross Nicoll, Research Fellow, Computer Science, University of St Andrews.

<sup>140</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>141</sup> David Burden, Daden Limited (independent developer).

<sup>142</sup> Dave Lee, Virtual Campus Manager, University of Hertfordshire.

“We are also tentatively looking at the possibilities of Playstation Home for hosting educational content. Initial impressions are that it is well suited for this purpose, providing a better locked down service compared to Second Life, with better graphical facilities. We are currently enquiring as to availability of development tools, costs and licensing terms.”<sup>143</sup>

“We have just started looking at Metaplace. We are particularly interested in environments which can be shared easily across the institution in a classroom environment and of course, between other institutions. These environments also need to be able to be constructed rapidly but have powerful enough scripting behind them to be useful to us. We are also looking for solutions that afford maximum opportunities when linked to the ‘Web 2.0’ services that we use to support the Medical curriculum.”<sup>144</sup>

Two responses from the University of Edinburgh indicate a substantial resource investment into looking at multiple alternatives to Second Life:

“Our OpenSim area (<http://vue.ed.ac.uk/openvue/>) is now a (terrain anyway) clone of our main 9 regions in Second Life, but allows for a new Welcome island, to potentially link up with OGP and HyperGrid ideas in future. We currently host a region for the School of Education on our own servers, but we will shortly be testing adding in regions from other computers onto our own UGAIM server setup.”<sup>145</sup>

“We are very actively looking at other virtual worlds to use in combination with and instead of Second Life (depending on the discipline). We have our own Open Vue regions in OpenSim hosted on a University hosted server. We have also Vue spaces within Twinity, Lively (as it was) and many more.”<sup>146</sup>

Other academics and institutions are also taking a multiple world approach:

“I am attempting to launch OpenSim and Teen Grid activities.”<sup>147</sup>

“We are also investigating other virtual worlds including Entropia Universe, Twinity, Active World, IMVU, HipiHi, Kaneva Playstation Home and Xbox Live.”<sup>148</sup>

“My role is to coordinate the OU activity in virtual worlds, which is currently centred on Second Life although we are actively reviewing alternatives.”<sup>149</sup>

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<sup>143</sup> J Ross Nicoll, Research Fellow, Computer Science, University of St Andrews.

<sup>144</sup> Dr Neil M Hamilton, Director, Medi-CAL Unit, University of Aberdeen.

<sup>145</sup> Professor Austin Tate, Director, AIAI, School of Informatics, University of Edinburgh.

<sup>146</sup> Fiona Littleton, Educational Development Adviser, University of Edinburgh.

<sup>147</sup> Ferdinand Francino, Project Manager (CU There), Glasgow Caledonian University.

<sup>148</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>149</sup> Anna Peachey, COLMSCT Associate Teaching Fellow, Open University.

## 5. More virtual world use next year?

The large majority of respondents to the questionnaire said that they were intending to use virtual worlds in their work in the next academic or calendar year. Of the others, five were unsure or hopeful, and only one was unlikely to use virtual worlds.

However, this should be considered in the context of the questionnaires. It is less likely that academics who had endured a disappointing time with virtual worlds, and who don't wish to proceed further with this technology, would reply. Having said that, there have been several such negative responses to previous snapshot survey calls, and the proportion of negative, "not repeating use of the technology" responses is smallest for this snapshot.

As can be seen from the selection of quotes, many of the academic respondents have clear ideas about what they want to use virtual worlds for in the next year.

"If Metaplace looks like a viable tool, we will probably be piloting in that environment."<sup>150</sup>

"Following our LiVE Learning in Virtual Environments project we have a number of interested parties following up the use of virtual worlds, particularly in education, healthcare, construction industry and environmental application."<sup>151</sup>

"There have been discussions with lecturers in other disciplines, such as the Built Environment, who are interested in finding ways to use SL with their distance learners. There is a possibility of looking into cross-subject SL work, i.e. Computer Science students might build 3D objects (such as buildings with specific requirements) for Built Environment students to fault find, survey, etc. This is a tentative thought, but one that might be worth pursuing, if funding can be secured."<sup>152</sup>

"Yes. It is recognised at very senior levels in the university that the use of virtual/immersive worlds in education is a worthwhile area of development and experimentation."<sup>153</sup>

"Yes. A recent internal call for e-learning projects has resulted in a number of SL based bids. This is encouraging in terms of interest and active use to support teaching and research. These projects will be explored and developed further over the coming months.

The School of Geography at Nottingham is also part of the DELVE project (JISC funded) and they exploring using virtual worlds."<sup>154</sup>

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<sup>150</sup> Dr Neil M Hamilton, Director, Medi-CAL Unit, University of Aberdeen.

<sup>151</sup> Jerry Foss, Faculty of Technology Innovation and Development, Birmingham City University.

<sup>152</sup> Nicole Cargill-Kipar, Flexible Learning Co-ordinator, Educational Development Unit, Heriot-Watt University.

<sup>153</sup> Joss Winn, Technology Officer, Centre for Educational Research and Development, University of Lincoln.

<sup>154</sup> Andy Beggan, Learning Team Leader, University of Nottingham.

“This (calendar) year we will have a full time support post for the OU community in Second Life, with half time senior project management to coordinate OU activity across projects. Activity generally will become more formal as our understanding of the environment progresses and enables us to put more strategy and support structure in place. We are looking at several potentially large virtual world projects across several faculties.

Recently I was talking to an avatar in Second Life who is about to start his first OU course - he signed up as a direct result of finding us in-world and meeting and chatting to other students. It feels like we have done a lot of ground work since 2006, and this year should see this paying dividends in take up from both staff and students.”<sup>155</sup>

“Yes; colleagues from a number of departments have expressed an interest in using Second Life with their students.”<sup>156</sup>

“We are still reticent about the value of large-scale use of virtual worlds in teaching and learning, because we can't see how they fulfill a widespread need. It is possible that this will change should larger audiences of students and academics become familiar with virtual worlds. The need to introduce the space as a learning technology is considerable for most stakeholders. However, where there is an obvious application, we are ready to exploit the potential of 3D virtual worlds.

What would move us from a watching brief to more active engagement is a clear sense from our student body that 3D virtual worlds are environments in which they want to be.

Hopefully, yes: involvement in projects with students. We would hope any projects will be led or determined by students, so such work is hard to predict. At the moment we don't see a necessity to unduly promote the potential of 3D virtual worlds, but we are open to ideas that emerge from student and academic stakeholders and the literature. We will continue to have a watching brief.”<sup>157</sup>

“Many more schools and professional services should be active in-world as we are in the process of allocating funds to mini-projects through internal funding.

I have been asked to be a guest lecture at Schools that I didn't even know were doing anything in SL. In March, students on the MSc Teaching and Learning Innovation have now got a Second Life module included. Last year I organised a Second Life seminar for anyone doing an activity within the University of Southampton; this was very useful. There will be another one in September this year.”<sup>158</sup>

“Development of a language café in Second Life for the Modern Languages of the University island; adaptation of more language learning resources ('learning objects'

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<sup>155</sup> Anna Peachey, COLMSCT Associate Teaching Fellow, Open University.

<sup>156</sup> Jane Chandler, Principal Lecturer, School of Computing, University of Portsmouth.

<sup>157</sup> Richard Mather and Andrew Middleton, Learning and Teaching Institute, Sheffield Hallam University.

<sup>158</sup> Fiona Grindey, Coordinator for educational activity in Second Life, University of Southampton.

and vidcasts) for use in Second Life; further exploration of its potential for language learning.”<sup>159</sup>

“Digital music students streamed and live performance in Second Life. Product design students investigating design elements within virtual worlds, and level 2 journalism students (course under development).”<sup>160</sup>

“Yes; Computer Science has a second year’s (internal) funding for the island in SL, with which we hope to progress the wireless simulation project further. We would also like to have a public region in Second Life, and have space available for all interested local staff to be able to experiment with it, but these will depend on how far funding can be stretched. We are applying for external funding for OpenSim work, although have been rejected on first application in September.

Also related to Second Life, we are integrating Second Life support with an administrative web tool we use locally, called MMS. Unlike Sloodle, where the focus is on teaching tools, this will primarily centre on reducing workload of teaching staff by providing functionality such as automated lecture attendance taking, student SL/RL name lookup, etc.”<sup>161</sup>

“There’s interest in our department in using Second Life as a medium for collaboration in the new MSc in Global Innovation Management, and I hope to integrate this into the curriculum for the next academic session.”<sup>162</sup>

“Yes. We will link, and exchange information, with other colleges.”<sup>163</sup>

“At Sussex, my DPhil is around aspects of teaching and learning in Second Life. We have just bought a second island specifically as a learning space and I will be working on this during the coming year with different groups of students. The project isn’t properly scoped yet, but we want to get students developing and using stuff in the virtual world and to use this as a way of enthusing others about the possibilities.”<sup>164</sup>

“At the Open University, I hope to have a tutor group in SL - this is a course which runs February to October and is currently being recruited. I have run some one-off tutorials in the past, but have not been able to use SL as the principal means of student support before. I am also exploring the possibility of using SL on another course I teach on for running a group exercise; there has been discussion and some interest, but this will need more discussion during the coming months. The group element of the course happens in August/September and is a mixture of role play and simulation.”<sup>165</sup>

“Lots more. Staff claiming plots on the island is already getting to the point where we can see larger investment in land, and as people get more confident and word spreads,

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<sup>159</sup> Julie Watson, Senior Teaching Fellow, School of Humanities, University of Southampton.

<sup>160</sup> Roger Emery, Learning Systems Developer, Southampton Solent University.

<sup>161</sup> J Ross Nicoll, Research Fellow, Computer Science, University of St Andrews.

<sup>162</sup> Dr Scott Chase, Senior Lecturer, Department of Design, Manufacture and Engineering Management, University of Strathclyde.

<sup>163</sup> Mell Turford, Media Production Lecturer, Strode College, Somerset.

<sup>164</sup> Liz Thackray, DPhil student, University of Sussex.

<sup>165</sup> Liz Thackray, COLMSCT Teaching Fellow, Open University.

interest levels are rising further. Because we're evaluating our current VLE/LMS position, and looking closely at what a 'virtual learning environment' really is, in 2009, a number of academics are looking at this concept particularly, and because we have both a wide range of potential scenarios (health, forensics, media, marketing, journalism, arts) and also a number of programmes around graphics/animations/digital interaction we are matching up students needing projects with projects to be built it's an exciting time.

Parallel to this 'physically' creative strand, we also have staff looking at the proximity and community aspects of engaging on- and off-campus students through virtual world collaboration, which need very little additional resource in terms of building or scripting support, there's vast and exciting scope for our use to blossom. Looking forward to it!"<sup>166</sup>

"The island is constantly being improved. We aim to add more interactive tutorials and hold more 'face to face' avatar tutorials in world. The main lesson we have taken from this venture though is that it is easy to underestimate just how long it can take to set up islands, and it is probably an understatement to say that we have not used it as much as we wanted to yet."<sup>167</sup>

"Absolutely, yes. UWE has many students studying for careers in a wide range of professions, e.g. law, health, planning, tourism, environment, architecture and so on. The ability to enable them to practice the application of theory in simulations of real life events has huge educational potential. Colleagues in our schools of health and social care, and built environment, are beginning to plan simulations that students can interact with in Second Life. We feel that one of the real benefits of virtual worlds is not only the interaction amongst students and tutors, but also interaction with the environments that can be created. The latter is something that tends to be overlooked in the literature on the educational uses of virtual worlds.

We have also bid for funds with our colleagues in Mathematics and Statistics to enable us to build a maths laboratory, where students can interact with simulations of mathematical concepts and explore those concepts graphically in three dimensions. We haven't built a working version of this yet - that depends on the funding!"<sup>168</sup>

"At the University of Worcester, we are just beginning. We have acquired a university island and are getting it ready for use during 2009. There are one or two projects in the pipeline."<sup>169</sup>

"There are projects in the pipeline and I hope they come to fruition. We have another year or so of space on SL so there's time to give it a decent try."<sup>170</sup>

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<sup>166</sup> Kate Boardman, Head of E-learning, University of Teesside.

<sup>167</sup> Dr David Wood, Director of Undergraduate Studies, Department of Mathematics, University of Warwick.

<sup>168</sup> Dr Liz Falconer, Manager, E-learning Development Unit, University of the West of England.

<sup>169</sup> Andrew Rothery, Head of E-Learning Innovation, University of Worcester.

<sup>170</sup> Kriss Fearon, Web Coordinator, University of York.

“The Engineering education island will continue to be developed. More projects will be allocated to our second island. The Virtual Campus project will continue to be a project on the Multimedia Computing and design undergraduate course.”<sup>171</sup>

“Yes, a major focus for us will be rolling out the PIVOTE open source project, and doing more implementations of our SL and web based chatbots, as well as any client driven projects.”<sup>172</sup>

As ever, some academics would like to carry on teaching and learning activities, but this depends on obtaining further or continuation funding:

“I wish...but I don't have funding to pay, so I have to rely on sending the students to free events.”<sup>173</sup>

“Hard to say at this stage. It very much depends on whether continued funding is available but this was always seen as a pilot project rather than necessarily a long-term commitment. Having said that, it would obviously be a pity if we couldn't build on initial experiences, good and not-so-good, and possibly involve a limited number of additional colleagues. It is likely that I would continue to use SL for teaching in some fashion even if our island disappeared.

It would be nice to see some subject-specific SL content disseminated via the forthcoming JISC Open Educational Resources initiative.”<sup>174</sup>

“At the moment the Scheme Park Programme is analysing data, writing up ‘findings’ and thinking about next steps (including funding); expect a rash of publications in 2009/10. We have one substantial bid in for funding at the moment.

We will be doing more work using virtual worlds to explore visions of Scheme over the next 12 months. Exact timing will depend upon funding. Our aim is to start the next Phase of the Scheme Park Programme in September 2009 with more students and a redesign informed by our analysis of the first three Phases. We are particularly interested in developing mechanisms to draw people into the environment in a way that supports their integration into the community and simultaneously collects data about their progress (and knowledge age skills).”<sup>175</sup>

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<sup>171</sup> Michael Callaghan, Lecturer, School of Computing and Intelligent Systems, University of Ulster.

<sup>172</sup> David Burden, Daden Limited (independent developer).

<sup>173</sup> Anita Pincas, Senior Lecturer, Continuing and Professional Education, University of London.

<sup>174</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>175</sup> Peter Twining, Senior Lecturer, Department of Education, Open University.

## 6. 'Feelings'

Even when not asked for, respondents to snapshot survey questionnaires have never been shy to comment on problems and attitudes towards their work with virtual worlds.

### 6.1 Attitudes among staff and students

There is anecdotal evidence that some academics, previously involved in Second Life, have given up due to either a lack of peer support (or understanding) and/or a lack of funding. This is the feedback from several previous snapshot respondents; as a side point, a few of them have become sufficiently frustrated to leave their position and set themselves up as freelance virtual world developers.

Attitudes reported by respondents are a mixed bag, with the concept of 'slowly changing attitudes' being a prevalent one. Making the connection between virtual worlds and effective learning and teaching is still difficult for many people (academics and students); it is hoped that some easily accessible 'proof of concept' will emerge to help academic users and developers make the case to both students and staff.

"Progress on roll out to others in the University is still very slow, though this is as expected with new technologies in Education, to some extent. However I've noticed a particular difference with this one (3D environments/virtual worlds), a reluctance that I've not seen as strongly before. Even amongst our 'usual' early adopters progress and uptake is slow, if at all. Perhaps this technology for the majority is still, in many ways, one jump too far?"<sup>176</sup>

"We have questionnaire data which indicates that our students don't like SL very much. It has had negative publicity recently which makes some of them think it is 'sad'. However the students do on the whole like our module. They seemed to enjoy making their pets and are proud of them. There is not a straightforward motivational effect for SL itself, and it would be a mistake to use it on the assumption that the students will like it because it is fashionable."<sup>177</sup>

"The data that both the 07-08 and 08-09 modules yielded is extremely rich and can be analysed in the light of a diverse range of learner centred topics, such as group work, motivation, individual learning, identity and peer learning, etc. The use of SL in these particular Computer Science modules was motivational because of its direct visual abilities (students see peer work, they learn from others, help others, set their own goals and standard through motivation by others) but, as Judy said, not because of the medium/tool of SL itself. To us, SL was the most suitable tool currently available, no more, no less."<sup>178</sup>

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<sup>176</sup> Kathryn Trinder, Research Fellow and Academic Development Advisor, Glasgow Caledonian University.

<sup>177</sup> Judy Robertson, Lecturer, Computer Science, Heriot-Watt University.

<sup>178</sup> Nicole Cargill-Kipar, Flexible Learning Co-ordinator, Educational Development Unit, Heriot-Watt University.

“It would be fair to say that interest in the use of virtual worlds in learning and teaching is confined to a small number of committed individuals who can see potential beyond the recreational/social networking applications. There have also been technical difficulties until recently in delivering Second Life via the University’s intranet.

I expect our staff development activity to continue to expand once we have established a permanent presence in Second Life. The key to this will be to dispel the perception that Second Life is a game.”<sup>179</sup>

“At the moment awareness of SL among students is low and we are a long way from having, say, a first year induction en masse, even at a departmental level, that would obviate the need to teach the basics for every class. That is a significant limitation but I continue to explore a ‘minimum requirements’ approach for individual sessions, introducing features incrementally as and when necessary.”<sup>180</sup>

“I have no doubt this is going to grow and grow, but educationists are so slow to take advantage; they are still getting their heads around e-learning, and don’t want to drop that in order to rush off to something else. Unfortunately, they’ve heard too much nonsense about what ‘goes on’ in SL, like pornography and silly marriages.”<sup>181</sup>

“We are not aware of anyone else in the university making substantial use of 3D virtual worlds, despite awareness raising activities.”<sup>182</sup>

“At Sussex, I sense things are more tentative [than at the Open University]. We do have a main university island and a second island has just been purchased and we are working closely with the Creativity CETL, but there is a fair amount of watching what we are doing and assessing it before jumping on board.”<sup>183</sup>

“It’s been interesting to see that some of our senior management have been faster to see the potential of SL than of some of the opportunities offered by ‘traditional’ e-learning. Perhaps that is simply because they can see it. Interesting times ahead anyway, and I’m also very grateful that our technical helpdesks are all on board with being encouraging about hardware and kit to cope with SL. Slightly less useful that LL can whitelist 5 IP ranges for us when we have trillions, but little by little things are coming together. Definitely exciting times ahead.”<sup>184</sup>

“I think so. My stuff is peripheral but I’m also working with our ‘official’ Second Life presence and working towards a North East England SL Conference for April with JISC RSc (Sunderland University).”<sup>185</sup>

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<sup>179</sup> Geoff Barker-Read, Head of Academic Quality and Standards, University of Leeds.

<sup>180</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>181</sup> Anita Pincas, Senior Lecturer, Continuing and Professional Education, University of London.

<sup>182</sup> Richard Mather and Andrew Middleton, Learning and Teaching Institute, Sheffield Hallam University.

<sup>183</sup> Liz Thackray, DPhil student, University of Sussex.

<sup>184</sup> Kate Boardman, Head of E-learning, University of Teesside.

<sup>185</sup> Steve Thompson, Community Media Coordinator, Institute for Digital Innovation, University of Teesside.

“The grant which made this island possible was a fantastic support and we would encourage other institutions to do similar things. The grants supported ‘innovative’ projects, and were awarded on quite vague project descriptions and outline budgets which showed promise. The greatest selling point of this initiative was that the grant was left flexible enough to use it for purchasing computer equipment, paying students real money and buying Lindens for purchases in-world.”<sup>186</sup>

“[Are you doing any teaching or learning?] Not yet, even though this was the purpose of buying space on there. It’s proved very difficult to get teaching staff engaged in the project, which is informal and voluntary and dependent on finding someone who’s interested and committed to think of good projects to do. We’re also coming up against technical challenges in delivering the SL viewer to students in our supported computer classrooms so we can get enough student access to do a viable study of how well it could work as a teaching/learning tool.

Things I think might make the project work more effectively:

- A knowledgeable senior member of staff as a figurehead.
- Formal commitment to the project from the VLE team.
- Organised buy-out of staff time so there’s an opportunity to follow up on some of the really good ideas that have been suggested within a reasonable timescale.

We will learn some useful lessons from doing this, but as an institution may not be ready to make use of virtual worlds as a teaching tool; there isn’t the critical mass of interest here yet.”<sup>187</sup>

## 6.2 Comments about Second Life

Several respondents added comments about Second Life and Linden Labs itself.

“Following trialling Second Life for group activities with Film and TV technology degree students, there was an overall feel that Second Life (and virtual worlds in general) are lacking where an authentic environment is required, in this case for planning a film-shoot (a location scout). Personally I think we need more work on personal representation in virtual worlds (i.e. it’s more than just being an avatar).

We also need better perception of the presence of others - awareness, etc. For example, in a room, you know that there’s other people present even if you can’t see them. You probably can in virtual environments if you keep a check on the mini map; but this isn’t enough for the human perception aspect. I’m keen to follow up on the tools to support this.”<sup>188</sup>

“The key to making a virtual world usable for an educational establishment is accessibility. In the case of Second Life, people have to download the client and register an account, which has proven to be a confusing process for (some) staff and

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<sup>186</sup> Dr David Wood, Director of Undergraduate Studies, Department of Mathematics, University of Warwick.

<sup>187</sup> Kriss Fearon, Web Coordinator, University of York.

<sup>188</sup> Jerry Foss, Faculty of Technology Innovation and Development, Birmingham City University.

students alike. We have gone to great lengths to streamline this process to the point of installing the SL client in our Learning Resource Centre and using the 'Reg API' (registration assisted programming interface) provided by Linden Lab to allow students to create accounts from inside the university network. We are also working on a way to fix a few issues we're having with voice chat (we have a separate network for staff and students, freeing up ports is proving to be problematic)."<sup>189</sup>

"As the ongoing saga between our finance department and Linden Lab continues (I just got an email to say that one of our islands was about to get sunk due to confusion around payment), and as a result of our findings from the Open Habitat project, I am determined to make 2009 the year of OpenSim. We plan to set up our own OpenSim server for our 600 art and design students to enjoy, free from some of the obstacles that we have encountered whilst trying to use Second Life."<sup>190</sup>

"I have been pleasantly surprised by the stability of SL. This has improved considerably over the past 12 months."<sup>191</sup>

"I feel that there needs to be more online meetings aimed at UK, as the time difference means that most in-world events happen when the UK cannot access during normal working day."<sup>192</sup>

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<sup>189</sup> Andrew Marunchak, Chief Developer, University of Hertfordshire's Second Life presence.

<sup>190</sup> Ian Truelove, Principal Lecturer, Faculty of Arts and Society, Leeds Metropolitan University.

<sup>191</sup> Dr Peter Miller, Lecturer, School of Biological Sciences, University of Liverpool.

<sup>192</sup> Mell Turford, Media Production Lecturer, Stroud College, Somerset.