



Case study 5: Moving into virtual worlds

University of Derby and Aston University

What this case study covers

- **Subject and level:** First year higher education undergraduate psychology students
- **Topic:** Development of collaborative distance and online learning provision
- **Technologies used:** Second Life[®], dedicated server to support Second Life

Background

The University of Derby serves a student population of approximately 17,500 (2009/2010), comprising undergraduate, postgraduate and research students. Campuses are in Derby and Buxton, and there is also franchised provision based overseas that caters for a further 2,040 students. The university has the following faculties: arts, design and technology; business, computing and law; education, health and sciences; culture and lifestyle; and a STEM (science, technology, engineering and mathematics) virtual faculty. In addition to undergraduate and postgraduate degrees, the University of Derby also offers a wide variety of further education courses at the Buxton College of Further Education, serving 3,140 students on programmes of study ranging from A level to apprenticeships.

Aston University is based in central Birmingham and has a student population of approximately 9,500 (2010/2011). The university offers a range of undergraduate and postgraduate degree programmes with schools of study for: business; learning innovation and professional practice; interdisciplinary studies; engineering and applied science; life and health sciences; languages and social sciences; and executive development. Aston University also works with the public and private sector to develop tailored continuing professional development and foundation degree programmes.

Vision

Both the University of Derby and Aston University have a strong focus on ensuring students develop skills that will equip them well for future employment; at the

University of Derby, this is expressed as a strategic aim to provide “an education for application”.

Like many universities, Derby is facing increased demand for distance and flexible learning, and aims to increase the number of courses providing alternative modes of study. The university has collaborated with Aston University to develop resources in Second Life to support tutorials and problem-based learning for undergraduate psychology students studying through the university’s flexible online programme (accredited by the British Psychological Society).

Transforming practice

Creating immersive learning experiences that replicate real life

3D multi-user virtual environments (MUVEs) such as Second Life have the potential to offer immersive simulations and, in some circumstances, overcome logistical and ethical barriers associated with learning in real-world settings. In Second Life, participants can move around, collaborate and socialise using voice and text chat as avatars (the digital forms they have chosen to represent themselves). MUVEs also offer flexible access for part-time, distance and work-based students.

Staff already had experience of using Second Life to provide engaging online learning activities, and identified the online psychology course as one that might benefit from this type of approach. With support from the [Higher Education Academy](#) (HEA) Psychology Network and funding from JISC, the universities set out to build on previous JISC-funded research involving the use of problem-based learning in virtual worlds ([PREVIEW project](#), Coventry University) and to apply the techniques to their own provision in a benefits-realisation project entitled [PREVIEW-Psych](#).

PREVIEW-Psych

The project team had a server available to host Second Life, an island available to host the scenarios, and the developmental skills necessary to build the PREVIEW-Psych learning environment.

On entering the Second Life island, visitors are directed to a reception desk and have access to a resource area providing guidance on how to perform tasks as well as information on the various mental health conditions they may encounter. Features such as meeting points are provided to facilitate group working. In addition, the island has a lecture theatre and a house where the scenarios are based. The house is populated with programmed avatars called chatbots that provide additional information and bring the case studies to life.

The PREVIEW-Psych course team developed four avatar-driven clinical scenarios designed around a family experiencing a range of common mental health disorders, closely linked to content from the University of Derby and Aston University's first year psychology teaching modules. The aim was to emulate campus-based learning using interactive lectures, seminars and group work. Students can take on the role of a social worker, working in teams with a tutor (member of staff) to find out more about the virtual family they are visiting as they interact with the evolving 3D scenarios. Students are then able to work together to construct a report, all without leaving the virtual world environment.

Careful consideration was given to what was necessary to provide an effective online learning space and to develop strategies that would engage the students in active learning. Problem-based learning was identified as an appropriate strategy because it requires students to seek out information and can be collaborative. Second Life allowed the students to read, listen to audio resources, see 3D avatars acting out symptomatic behaviours, and interact with avatars and peers to gain further information, very much as would occur in campus-based group work.

Delivering virtual lectures

MUVEs offer multiple ways of communicating that can be difficult for lecturers new to this style of delivery to manage: with voice, text, instant messaging and audio all available, it can initially seem overwhelming. The PREVIEW-Psych virtual lecture theatre has been specifically designed for ease of presenting: the lecturer faces the audience and is able to monitor participation, can ask and respond to questions using voice and text chat, instant messaging and notecards, and can conduct interactive polls. Lecturers have a 'heads up' display panel that enables them to see forthcoming slides in a presentation while facing and focusing on the audience. Presentations can be recorded and archived for re-use, providing a growing resource bank.

The virtual lecture theatre is an effective way to bring online and distance-learning students together, offering parity of experience with those who are campus-based and enhanced opportunities to interact with the presenter and to revisit recorded sessions.

Collaboration

In addition to benefitting from collaboration between institutions and subject networks, the project was also able to benefit from internal collaboration. The project team comprised a mix of academic subject staff and technical developers. This mix was instrumental when designing the learning experience, ensuring that pedagogic

considerations and the user experience were thought through in parallel and supported by responsive technical expertise. This collaborative approach is employed more widely by the University of Derby through its Technology Enhanced Learning Group, potentially bringing wider expertise to project teams as well as helping to disseminate effective practice to other faculties.

As part of the project, the PREVIEW-Psych team developed a [best practice guide to problem-based learning in virtual worlds](#) and hosted a training day for others interested in developing similar provision. The training included development space on the university island and mentoring to support participants as they designed and built learning experiences of their own in Second Life.

The PREVIEW-Psych island and associated project resources can be accessed online at www.previewpsych.org

Benefits

The problem-based approach enabled the team to build an evolving story that required students to conduct research and seek out information from the chatbots and from observing the environment around them.

Students enjoy the active and collaborative aspects but also view avatar-driven simulations as valuable for individual work and for revision. The immersive nature of the experience and engagement with characters created a sense of presence for some students which can foster deeper reflection than perhaps may otherwise be generated by less immersive activities such as essay writing.

MUVEs sometimes allow quieter students who find face-to-face interaction a challenge to come to the fore. The advantage of the virtual environment is further supported by the greater choice of options for communicating and interacting with staff and peers using any combination of voice, text, instant messaging and notecards.

While MUVEs can have cost implications, there are some important advantages when supporting distance learners or those studying part time, simulating learning which may be otherwise difficult to provide.

The approach taken by the University of Derby and Aston University is highly replicable. Initial investment costs can be recouped, as materials can be designed

once and re-used and/or copied and modified many times. For example, the virtual house is also being used for [PREVIEW-Sustain](#), an HEA-funded environmental project to explore people's attitudes towards green issues and motivation to embrace, for example, recycling and energy efficiency.

Useful to know

- Participants can use Second Life without charge, but developers need to purchase an island and either buy or develop buildings and objects to populate the space. The program can be run from a memory stick, removing the need for the software to be installed on every machine.
- Group induction and orientation sessions are an essential precursor for effective problem-based learning sessions in Second Life. Students found sessions more rewarding when facilitation was kept to a minimum once the initial introductions were made.
- Clarity of pedagogical purpose is vital and should drive the learning design.
- MUVES may not be accessible to all, and adaptations or alternative approaches may be necessary to provide an equivalent experience for some users. The University of Derby provides alternative access by posting all materials and resources used in Second Life sessions on a companion website.
- Combining academic and technical expertise is vital – both skill sets are necessary for effective and innovative use of MUVES – as well as careful curriculum design and training for all.
- Developing from scratch may require a considerable investment in learning new skills. On reflection, the team was keen to enthusiastically encourage use of MUVES for learning and teaching and suggests that perhaps the best approach is to adapt existing and proven methods in virtual-world teaching methods and apply these to customised teaching environments.
- The team received training from an external consultant with specialist expertise and knowledge of chatbot and 3D interface technology. This was regarded as a valuable investment to avoid many of the potential traps involved with programming virtual-world objects, and it enabled the team to maintain a focus on pedagogical aspects rather than technological considerations.
- If distance learners are required to use Second Life, it is vital that this is stated clearly in the student handbook. Technical help and support to develop ICT and digital literacy skills should be provided for online learners to ensure equity of experience with on-campus students.
- The project team made use of the 3D virtual world to hold development meetings, communicate objectives and discuss possible solutions. This meant that although

geographically separated, members of the project team were able to meet frequently in the actual area they were developing.

- There are several different MUVES, some of which are open source; those interested in working with virtual worlds will need to explore the different costs, functions and licence agreements to find the solution most appropriate to their needs.

Moving forward

MUVES allow you to think outside existing paradigms and offer simulations that are more than just a digital equivalent to the real world. In exploring the use of Second Life to provide parity for online learning students, the university is not only opening up new markets but also using the lessons learned to enrich campus-based provision.

Open source solutions and the sharing of knowledge between small dedicated teams can be effectively scaled up to service large numbers of campus-based and online or distance learning students. It is perhaps this economy of scale and the ability rapidly to provide creative bespoke educational solutions that may provide the momentum to further explore these virtual-world ways of teaching within higher education in challenging economic times.

Learner perspective

Student feedback reflects the engaging and immersive aspects of the PREVIEW-Psych learning experience:

“We worked as a team ... this seemed much more valuable than just writing an essay or having a discussion.”

“I was thinking more about the real life psychology because the avatars represented real people with real psychological problems.”

Tutor perspective

For academic staff, the advantages are in the flexibility and the ability to use the technology to interact with students in new ways:

“The real advantage comes in that we can set up effective learning environments for people that geographically are hundreds and hundreds of miles away.”

Dr Simon Bignell, Lecturer in Psychology, University of Derby

“We’re providing a lot more online distance learning opportunities, and technology offers us a way to interact with students that we couldn’t have done in the past when distance learning courses were done on a paper-based basis. You really couldn’t achieve an equitable sort of student learning experience as you can now with learning technologies.”

Professor Liz Barnes, Pro Vice Chancellor, University of Derby

Reflect and discuss

PREVIEW-Psych made effective use of team work and collaboration among academics and developers across institutions, using internal teams and professional networks to develop interactive, engaging and authentic learning experiences. One benefit of this was that the sharing of different pedagogical viewpoints and technical knowledge allowed the team members to learn from each other. The consequence was that the student experience benefitted from clearly communicated, straightforward tasks that were neither too open-ended nor overly complicated.

- Consider the networks that you use, the collective knowledge and skills embraced by them and the potential they offer to your own practice.
- How does your institution use technology to support students, whether on or off campus?

Key words

Distance learning, online learning, multi-user virtual environments, MUVE, problem-based learning, Second Life virtual worlds

Links and further reading

Bignell, S and Parson, V (2009) *Best Practices in Virtual Worlds Teaching: A guide to using problem-based learning in Second Life* (PREVIEW-Psych project guide)
<http://previewpsych.org/?p=200>

JISC, PREVIEW project report

www.jisc.ac.uk/whatwedo/programmes/usersandinnovation/preview.aspx

Parson, V and Bignell, S (2011) Using problem-based learning within 3D virtual worlds, in Hinrichs, R and Wankel, C (Eds), *Transforming Virtual World Learning: Cutting-edge technologies in higher education*, Vol. 4, pp. 245–265. Emerald Group Publishing Limited: Teynampet, India

PREVIEW project blog www.elu.sgul.ac.uk/preview/blog

PREVIEW-Psych website, the PREVIEW-Psych island and associated project resources www.previewpsych.org

Savin-Baden, M (2007) *A Practical Guide to Problem-based Learning Online*, London: Routledge

See also the video clip: Moving into virtual worlds
www.jisc.ac.uk/emergeresource