



Integrating Second Life into two Masters' distance learning programmes in Occupational Psychology

Abstract

This is a case study of incorporating Second Life (SL) into two Masters' distance learning programmes in Occupational Psychology at the School of Psychology, the University of Leicester, UK. The aim of this pilot was to create a simulated organisational environment for students to apply skills as occupational psychologists. The activities that students undertook in SL involved training in-world, visiting a SL oil rig platform, an evacuation simulation and group presentation. Four Psychology students took part in this pilot. The research was conducted as part of the JISC-funded project called DUCKLING (Delivering University Curricula: Knowledge, Learning and Innovation Gains, <http://www.le.ac.uk/duckling>). We found that SL is effective in creating a simulated environment in which they can practise skills in a safe and non-threatening way. The small group of distance learners also enjoyed the opportunities to interact and collaborate with their tutors and peers in SL.

The programme

The Occupational Psychology (OP) team of School of Psychology, University of Leicester started delivering two Masters distance-taught programmes in 2000: the MSc in Occupational Psychology and the Diploma/MSc in the Psychology of Work. Each programme involves six 20-credit modules and a 60-credit dissertation. All modules are compulsory. There is no on-campus equivalent of these programmes. The two programmes attract about 50 part-time students per year, and can be completed over two years. Almost all students are in employment throughout their studies.

Through consultation with staff, students and employers at the beginning of the DUCKLING project in early 2009, the Psychology team identified five key challenges in curriculum design and delivery, most of which are common in distance and work-based learning:

- Improving learner engagement with materials by bringing the materials to life and offering a variety of teaching approaches
- Improving learner support by offering enhanced guidance, support and feedback in a variety of media formats
- Enhancing flexibility and mobility in programmes aimed primarily at time-poor, work-based learners
- Reducing learner isolation through the provision of additional opportunities for student-student and student-tutor interactions
- Enabling skills development and transferring theory into practice for work-based learners

The OP team has focused on enhancing the overall learning experience of distance and work-based learners on both programmes through appropriate incorporation of four DUCKING technologies: Podcasting, Second Life (SL), e-book readers and Wimba Voice Board. In this DUCKLING case study, we report on the experience of incorporating SL into two Masters' programmes in OP.

The Second Life pilot

Purpose of using SL

The Psychology team decided to integrate SL into Module 5 *Psychology of Occupational Training and Learning*. An interview with a Psychology staff showed that there are two purposes of using SL:

1. To support student learning the subject by creating a simulated organisational environment for students to practise skills as occupational psychologists
2. To support distance learning by enabling interactions among students through collaborative tasks

Design of a SL-tivity

Between November and December 2009, a structured activity in SL (SL-tivity) was designed by the Psychology team, using Salmon's (2002) 5-stage model and trialled with four Psychology students studying a training and development module. The SL-tivity involved students to participate in an evacuation exercise from a SL oil rig. The purpose of the SL-tivity was to enable students to apply their learning about workplace training in a real-life scenario. Table 1 shows this SL-tivity, also available from DUCKLING website <http://tinyurl.com/ygixfz2>.

5-stage model	Weekly target	Key activities
Stage 1: Access and Motivation	Week 1: Introduction	<ul style="list-style-type: none"> • Explain why we are using SL • Provide an overview of the SL-tivity • Provide students with links, resources, and training guide
	Week 2: Getting started	Students using the training guide and resources to acquaint themselves with SL and learning how to: log in, choose an avatar name, create an avatar, teleport, move and communicate.
Stages 1 and 2: Access and Motivation and Online Socialisation	Week 3: Acquiring competence, improving confidence and motivation	<p>A group training session in SL for students and staff led by Beyond Distance Learning Technologists, aiming to assist in the acquisition of the following skills:</p> <ul style="list-style-type: none"> • Specific movements and gestures • Navigation • Camera control • Different modes of communication
Stages 2 and 3: Online	Week 4-1: Explaining and discussing the task	An initial meeting will be held in SL to explain the task which will feature on a virtual Oil Rig. It will allow students:

5-stage model	Weekly target	Key activities
Socialisation and Information Exchange		<ul style="list-style-type: none"> • Ask questions • Discuss their views • Discuss general concerns • Comment on the task • Talk about the process so far
	Week 4-2: Initial visit to the Oil Rig	The tour will enable students to look around, inspect and familiarise themselves with the environment. At the end of the tour they will be asked their thoughts in relation to a brief which they will then present in a brief to the senior project team.
Stage 4: Knowledge Construction	Week 5: Revisiting the Oil Rig	Students will be free to visit Oil Rig as much as they wish whilst they are preparing their ideas. This may be done on their own or with other members of the project team.
	Week 6: The live event	The live fire will occur in which students will have to perform an evacuation.
	Week 7: Presentation of results	Students will be asked to present their findings in SL in a group.
Stage 5: Development	Week 8-1: Feedback	Each student will receive individual feedback on their presentation by email.
	Week 8-2: Evaluation	Participants will be emailed and thanked for their participation, and invited to respond via email to give their thoughts about the project and reflect upon the task if they wish to.

Table 1: A SL-tivity developed for Psychology students

An article describing the live evaluation event from the SL oil rig is available at <http://tinyurl.com/yf7fha>. Three snapshots (Picture 1-3) were given below to show activities that student avatars were engaged with in this oil rig evacuation activity.



Picture 1: A tour of SL oil rig



Picture 2: Group presentation on the SL oil rig platform



Picture 3: Live evacuation from the SL oil rig platform

Development of a SL oil rig

An SL oil rig platform was used in this Psychology pilot. The oil rig platform was donated by a SL user and was placed at the University of Leicester's Media Zoo island (<http://tinyurl.com/yhwqaa7>). The Psychology team and a DUCKLING learning technologist had a couple of meetings discussing how to design the interior and specifications of the SL oil rig. To make the platform as realistic as possible, a control room, a bedroom, a kitchen, a living area, and two workshops were created; lift boats, life jackets, and exit points were set up on the SL oil rig. The process of adapting the SL oil rig to suit the needs of the course was documented in detail in an article available from DUCKLING website <http://tinyurl.com/ygjxfz2>.

SL training

We provided training to students at two levels.

- **Level 1: Learning individually**

At Level 1, the focus is on helping individuals to gain access to SL, create an avatar and choose its avatar name, log on, teleport, and use movement and chatting tools. We developed a DUCKLING training guide for participants, including YouTube videos that demonstrate the basic skills, and another guide for participants to set up audio and video systems in SL. Both guides (available from DUCKLING website <http://tinyurl.com/ygjxfz2>), were sent to students via email before the SL pilot. In the SL-tivity, Level 1 was built into activities in Week 2: Getting started.

- **Level 2: Learning in a group in-world**

At Level 2, the focus is on acquiring competence in more sophisticated in-world skills such as movement, gestures, navigation, camera control, private chat and searching. We provided a one-hour training session for the Education students, delivered in-world by a DUCKILNG technologist. In the SL-tivity, Level 2 was built into activities in Week 3: Acquiring competence, improving confidence and motivation.

Research methodology

Data collection methods

A SL questionnaire (see **Appendix 1**) was firstly sent to four Psychology students via email after the SL-tivity to collect student experience throughout the pilot. The survey was completed by all four Psychology students.

Interviews with two of the Psychology students and a tutor about their use of SL were conducted using cognitive mapping (Bryson et al., 2004) after the SL survey.

Additionally, staff views on SL were collected with another three tutors after the pilot through informal discussions.

Data analysis methods

1) Descriptive statistics

Quantitative data collected from the survey was transferred into an Excel spreadsheet and descriptive statistics were compiled for answers to the closed questions.

2) Thematic analysis

Qualitative data gathered from the survey was coded using data-driven (inductive) coding (Boyatzis, 1998) and analysed using thematic analysis (Boyatzis, 1998; Joffe and Yardley, 2004) to identify categories and combine categories into themes.

3) Cognitive mapping

Interviews with two Psychology students and a staff member regarding their experience in SL were conducted using the cognitive mapping (Bryson et al., 2004). This method was developed based on Kelly's (1955) theory of personal constructs. The rationale of this method is, "People make sense of their lives and situations by constructing, elaborating, revisiting and re-revising a system of interconnected concepts (more formally called 'constructs')" (Bryson et al., 2004, p.21). This method was used to capture a causal map of a student's or tutor's views, perceptions and experiences in SL. A causal map is a word-and-arrow diagram in which ideas and actions are causally linked with one another through the use of arrows. The arrows indicate how one idea or action leads to another. The causal maps of this study were created using *Decision Explorer* software (<http://www.banxia.com/demain.html>).

Figure 1 below shows a fragment of causal map created from an interview with a Psychology student regarding her experience in SL, using *Decision Explorer*. The arrow from Concept 2 to 5 can be interpreted as, 'SL offers an opportunity to meet other people studying the same course', *as a result of that*, 'What I found fascinated about SL is that people from all around the world can meet at a particular place and talk about course related things'.



Figure 1: A fragment of a causal map from an interview with a Psychology student about SL

In this SL study, student interviews focused on one question: ‘In what aspects did you find this SL activity useful and relevant to your study of this Masters programme?’ For each interview, a causal map was developed that summarised their views, perceptions and experiences in SL. See **Appendix 2** for a complete causal map based on an interview with a student about SL. Additionally, using the same method a causal map was developed based on an interview with a Psychology tutor.

The Domain and Central analyses provided by *Decision Explorer* were applied to the four students’ causal maps. In cognitive mapping, the Domain analysis calculates “the total number of in arrows and out arrows from each node” (Bryson et al. 2004, p. 324). The result of the Domain analysis indicates the richness of meaning of each node. A node with the highest score indicates that it is the “nub of the issue” (Bryson et al. 2004, p. 324) of that map. The Central analysis calculates the centrality of a node within the map. A higher Central analysis score implies that the node is of structural significance to the map. Both Domain and Central analyses are used to detect the most important or ‘busiest’ concepts. These concepts were compared and contrasted with the themes that emerged from the SL survey.

Summary of research methods

Methods for data collection and analysis, and the number of student participants involved in this SL study were summarised in Table 2.

Data collection/analysis	Methods and No. of participants
Data collection	Staff views were collected through: <ul style="list-style-type: none"> • A cognitive mapping interview with a Psychology tutor • Informal meetings and discussions with another three Psychology tutors Students views were collected through: <ul style="list-style-type: none"> • A survey completed by four Psychology students • Cognitive mapping interviews with two Psychology students

Data collection/analysis	Methods and No. of participants
Data analysis	Descriptive statistics applied to closed questions from the SL survey Thematic analysis applied to open questions from the SL survey The Domain and Central analyse applied to causal maps developed from interviews with the Psychology students and tutor

Table 2: Summary of research methods adopted in the SL study

Results

The findings that we discussed here were indicative, as they were generated from a small-scale pilot, in which four Psychology students and four tutors were involved.

Practising skills and learning concepts

All four Psychology students considered this SL-tivity useful and relevant to their study. SL allowed students to apply skills as occupational psychologists in a simulated working environment. In response to the SL survey, all four students agreed that SL allowed them to see and explore in a simulated working environment that wouldn't be possible for them to visit in real life; three of them agreed that the SL oil rig activity enabled them to practise skills as occupational psychologists in a safe and non-threatening environment.

An interview with a Psychology student showed how SL can be useful for exploring subject-specific issues and concepts. First of all, SL is considered a safe environment from a psychological point of view for exploring certain issues. In *Leadership and Training* module, SL is considered useful to explore concepts and issues such as:

- The debate about whether people can be trained as leaders or they already are leaders
- Concepts about how people take on different role
- The issue why some people got together and some didn't and what connects them
- The issue why certain people are more willing or able to communicate with other people and get a result

Another interview with a second Psychology student showed that participating in SL oil rig activity helped with a module assignment.

These findings suggest that SL offers the opportunities for simulation and role-play that can be potentially useful for students exploring subject-specific concepts and issues in OP. This SL-tivity enabled skills development and transferring theory into practice, one of the challenges faced by the OP students and staff.

Enabling interaction and collaboration

All four Psychology students considered that this SL-tivity enabled interactions and collaborations with tutors and peers. In response to the SL survey, three students agreed that SL enabled interactions with the tutors and peers; three agreed that SL offered opportunities to work collaboratively with other students on the course.

Cognitive mapping interviews with two Psychology students elaborated their perceptions of the SL's potential for distance education, in ways of:

- Enabling distance learners to meet with other students studying the same course and have discussions about course related issues
- Enabling networking opportunities for distance learners
- Enabling student connections outside SL
- Useful for tutorials where tutors can explain certain aspects of the course to students
- Useful for student induction at the beginning of the course

In response to the SL survey, students also suggested ways to use SL and other types of technologies to increase interactions for distance learners. Two student quotes were given below:

I think SL might be an excellent alternative to emails and *dissertation sessions*. Maybe we could meet up as a dissertation group and discuss all together.

Google chat type of facility for students in groups to communicate offline or outside the SL session.

These findings indicate that the SL-tivity addressed the need for generating more student-student and student-tutor interactions to reduce learner isolation, one of the challenges faced by the students and team.

Training

All four students never used SL before this project; three of them never played computer games. The in-world training was considered useful by all four students. In response to the SL survey, four students valued the opportunities of learning in a group and having interaction and fun with the trainer and peers; three students enjoyed the friendly, relaxed and supportive atmosphere in the in-world training; three students felt safe having an expert accompanying them through the learning journey (i.e. someone can rescue me if I fall into water or get lost).

Only two students used the training guide before the in-world training. In response to the SL survey, all four students considered that having an expert guiding them what to do and how to do it was a lot easier than learning on their own by reading the training guide. This explained why students preferred learning by participating in the in-world training than using the training guide.

Challenges and limitations

Technical problems and difficulties

All four students reported in the SL survey that SL was relatively easy to learn. Three of them reported technical problems or difficulties encountered when using SL. Three student quotes from the SL survey were given below:

I had some internet connection problems which hindered me from staying on track with the others at some point.

Trying to get the headphones and mike to work, I felt under pressure the first time which didn't help. Plus my laptop is a basic one, 2-year old, so it stalled quite a bit during sessions. My son did tell me it wasn't fast enough to load.

My headphones were not working for the first session. My settings were not right. Using a laptop and mobile broadband so speed and bandwidth may have been a problem.

One of the students told us in the interview how technical difficulties she experienced during the SL session affected her emotionally.

I felt very embarrassed and stupid because my laptop is not powerful enough and my avatar sometimes jammed and didn't respond to my control. People might think that I'm not competent enough to take part in this activity.

A second student stated in her interview that discomfort with SL features, such as lacking of body cues, and taking time to learn basic technical skills, such as manipulating avatars, may be discouraging for some people.

An interesting finding from the survey was that one of the students used families for technical support.

I did get my 24-year old son to help me who is familiar with these things. I might have been more lost otherwise.

Student use SL at their own time

Other than attending the oil rig related sessions, the four students did not use SL very much at their own time. One student reported in the SL survey that he/she never used SL at his/her own time and three others reported that they used SL but not often (i.e. a few times in total) throughout the project period. For the three students who used SL at their own time, two used SL under 30 minutes each time; another used SL between 30-60 minutes each time. Table 3 summarised the activities that students were engaged with when they used SL at their own time.

Activities engaged with in SL	No. of students engaged with that activity
Practising basic skills	3
Visiting other places and islands in SL	3
Exploring the oil rig and becoming familiar with the platform to complete my task	2
Exploring other functions in SL	2
Meeting and socialising with other avatars	1
Shopping	0

Table 3: Summary of activities students were engaged with when using SL at their own time

Access issues

There are still considerable technical barriers to effective use of SL for learning and teaching purposes, examples include:

- **Access to SL within the university:** Currently SL is not supported across the institution. As a result, staff and students can only use the tool at home or in the University of Leicester's Media Zoo.
- **Access restricted by the organisation's firewall:** Access can be restricted by the organisation's firewall which means students studying at a distance can experience access problems if they want to use SL during work hours.
- **Technical competence and confidence:** Staff and students need a level of technical competence and confidence to use SL effectively.
- **Require for broadband connection and high-spec computers:** SL requires a broadband connection and relatively high-spec graphics card, which still makes it outside of the reach of many of our distance learners.
- **Require for technical support and training:** Using SL for learning and teaching purposes requires both staff and students to have considerable support, training and induction from learning technologists before staff and students are able to function effectively in the environment.

Time difference

Students valued the interaction and collaboration opportunities enabled by this SL activity. However the fact that our students are distance learners and located in different places geographically and the synchronous nature of SL presented a challenge for managing all students together for the activity at any given time. Our students are also in full-time employment. Some were only available on certain days or at certain times during the project period. This creates additional challenge in organising all the students together for the task.

Recommendations

Our Psychology SL pilot involved using an SL oil rig platform donated by a SL user. This oil rig environment was further developed by DUCKLING technologists to cater for the learning need. This SL oil rig platform is now an OER for other practitioners to use. This provides an example of reducing costs for institutions by sharing generic developments in SL.

Impact and sustainability

As a curriculum delivery innovation, SL has demanded additional effort and investment from academic staff and learning technologists, including building or importing the required SL artefacts and several training, orientation and trial sessions for students and staff. The Psychology staff felt that the SL work would be very hard to sustain as part of the curriculum over time. The cost-benefit relation for SL in curriculum delivery, therefore, has been far less favourable than with podcasting. One of the Psychology tutors concluded,

Of the three technologies, I found this [SL] the least impactful for our distance learning courses for three reasons: it is difficult to navigate around in Second Life and takes considerable practice and time, which our students often have in limited supply; its ease of use is also dependent on your computer, and access to SL itself is often restricted by organisations, both of which can therefore exclude some of students from contributing to the activities; and the real-time nature of the exercise we used presents difficulties for a student population in different time-zones with high work and family commitments.

For the reasons discussed above the Psychology team decided not to use SL immediately for delivery of the two programmes. Another tutor concluded,

I think our recent experience with SL has not encouraged us to expend much more effort in that direction in the immediate future. Rather, it will be more appropriate to maintain a watching brief to see how the technology develops. It is very likely that SL will provide functionality to serve its prime motivation that can also be exploited by education in an acceptable way. Or another provider will offer a similar environment that ticks the boxes. The potential for a very useful facility definitely exists, so the important thing is to keep watch and keep trying.

Conclusions

This case study demonstrated integrating SL into two Masters’ distance work-based programmes in Occupational Psychology, to widen the variety of teaching approaches. Indicative evidence showed that SL is an effective way of creating simulated environments that students would otherwise not experience. SL environment enabled the students to apply theory in a practical setting in a safe non-threatening way. The small group of students participating in the simulation pilot enjoyed learning in this way and felt that it enabled opportunities for distance learning students to interact with their tutors and peers through collaborative tasks in SL, but access issues, technical problems, anxiety and discomfort with SL, need for technical support and training, and manage students in different time zones together for the task are challenges for sustainable use of SL within the two programmes.

Table 3 summarised how this SL intervention addressed the challenges faced in curriculum design and delivery that were identified by the Psychology team at the beginning of DUCKLING.

Challenges	How SL addressed the challenges?
Lack of interaction	Enabling interactions with tutors and peers through collaborative tasks in SL
Dry material	Bringing materials to life
Lack of variety in teaching approaches	Enriching teaching approaches
Need for mobility	-
Need for flexibility	-
Need for transferring theories into practice	Enabling students to practise skills as occupational psychologists in a simulated, non-threatening working

Table 4: How SL addressed the challenges in curriculum design and deliver

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Appendix 1: Second Life survey

1a. Have you used Second Life (SL) before?

Yes

No

1b. If you answered 'Yes', can you briefly tell us your previous experience in SL?

2. Can you tell us your engagement with computer games?

I play computer games a lot

I play some computer games

I never play computer games

3a. To what extent did you find the oil rig activity in SL useful and relevant to your study?

It was very useful and relevant

It was useful and relevant to some extent

It wasn't useful and relevant

3b. In what aspects did you find the oil rig activity useful and relevant to your study?

It enables interaction with the tutors

It enables interaction with other students

It offers opportunities to work collaboratively with other students

It was a fun and enjoyable experience

It enables me to practice skills as an Occupational Psychologist in a safe and non-threatening environment

It allows me to 'see' and 'explore' a simulated working environment which wouldn't be possible for me to visit in real life

It offers me an opportunity to learn a new technology

Others Please briefly explain:

3c. Do you have any suggestions about how we might improve the oil rig activity if we run it again?

4a. How easy it is for you to learn to use SL?

Very easy

Relatively easy

Relatively difficult

Very difficult

4b. If you found SL difficult to learn, can you tell us what difficulties you had experienced?

5a. Have you experienced any technical problems or difficulties when using SL?

Yes

No

5b. If you answered 'Yes', can you tell us what technical problems or difficulties you had experienced?

6a. Did you find the training session in SL useful?

Yes, it was useful

No, it wasn't useful

I didn't attend the training session

6b. If you answered 'Yes', can you tell us what you enjoyed the most in the training session?

An opportunity to learn, practice and enhance basic skills

Having an expert guiding me what to do and how to do it is a lot easier than learning on my own and reading through the guide

I felt safe having an expert accompanying me through the learning journey (i.e. someone can rescue me if I fall into water or get lost)

I enjoyed learning in a group and having interaction and fun with the trainers and peers

I enjoyed learning with other learners at the same level

I enjoyed the friendly, relaxed and supportive atmosphere

Others Please briefly explain:

6c. If you found the training session in SL not useful, can you briefly explain why?

6d. Do you have any suggestions about how we might improve the training session if we run it again?

7a. Did you find the training guide useful?

Yes, it was useful

No, it wasn't useful

I didn't use the training guide

7b. If you answered 'Yes', can you tell us in what ways you found the training guide useful?

As a beginner, it's important to know where to start with

It is well structured. It tells me what to do step by step

It tells me what the basic skills are required

I found the YouTube videos in the guide very useful for me to learn the basic skills

Others Please briefly explain:

7c. If you found the training guide not useful, can you briefly explain why?

7d. Do you have any suggestions about how we might improve the training guide?

8a. How often do you log in SL at your own time (other than participating in the training and two oil rig sessions) since the start of this SL project?

Very often (i.e. most days)

Relatively often (i.e. a couple of times a week)

Not often (i.e. a few times in total)

Other than attending the training and oil rig sessions, I never used SL at my own time

8b. How long do you log in SL each time when you visit SL at your own time?

Under 30 minutes

Between 30 to 60 minutes

More than 60 minutes

Other than attending the training and oil rig sessions, I never used SL at my own time

It depends Please briefly explain:

8c. When you log in SL at your own time, what activities you were engaged with?

Exploring the oil rig, becoming familiar with the platform to complete my task

Practicing basic skills

Exploring other functions in SL

Visiting other places and islands in SL

Meeting and socialising with other avatars

Shopping

Others Please briefly explain:

Appendix 2: A causal map developed from an interview with a Psychology student about her experience in SL

