

LEARNING THROUGH THE WORLD OF SECOND LIFE – A HOSPITALITY AND TOURISM EXPERIENCE

Abstract

Virtual worlds are a phenomenon raising interest among educators around the globe, with more than 400 universities experimenting with, or offering classes in the virtual world of Second Life. While many educators are excited about the potential of virtual worlds, others are wary or skeptical. Some consider them as up-market games, while others are afraid they will degrade student learning. Virtual worlds are certainly not a panacea for higher education, and present many challenges for students, teachers, and administrators. This paper describes how Second Life has been used for teaching and learning in a hospitality and tourism School in Hong Kong. It discusses some of the opportunities, challenges and problems of using this virtual environment, and analyzes data collected from students and teachers who used Second Life for learning and teaching in four diverse courses. The paper concludes by suggesting strategies and techniques for using virtual worlds effectively in hospitality and tourism education.

KEY WORDS: tourism education, virtual worlds, Second Life, simulations

Paul Penfold

School of Hotel & Tourism Management

The Hong Kong Polytechnic University

Tel (852) 2766-4092 Email: hmpp@polyu.edu.hk



Acknowledgments

The PolyUSotel Second Life project discussed in this paper was funded by the School of Hotel & Tourism Management and the e-Learning Development & Support Section of The Hong Kong Polytechnic University. Special thanks to Alex Ng, Bill Liu, Jackie Kwong, and Jacky Siu for their excellent technical & design work, and to Gigi Au for the data analysis. Thanks also to SHTM teachers Eric Chan, Greg Eilmann, Chloe Lau and Qu Xiao for their openness & support.

BACKGROUND TO VIRTUAL WORLDS

Virtual worlds originated in 1978 with the creation of MUD – the first online text-based Multi-User Dungeon game (Virtual Worlds, 2008). Broadband internet and fast 3D rendering have enabled virtual worlds to move into the mainstream with the proliferation of popular worlds such as Gaia, Active Worlds, Everquest, Second Life and World of Warcraft for adults, as well as Habbo Hotel, Club Penguin, Neopets and other worlds for children and teens.

In a recent survey, Mitham (2008), found that 238 million people have registered accounts in fully immersive worlds. However, active users – those who are regularly (3-4 times at least a month) using virtual worlds is unclear. Gartner Inc. estimates that eighty percent of active internet users will be using virtual worlds by 2011 (Gartner, 2007) and Gartner Chief of Research Steve Prentice (from Au, 2007) estimates that 50-60 million Internet users will participate in a virtual world by 2011. However, Au (2007) believes this figure is too conservative, as the three largest existing worlds already number 35 million active users (Cyworld – 20 million, World of Warcraft – 8 million and Habbo Hotel – 7 million) and Hanson (2007) estimates 26 million virtual world users by 2011 in China alone.

Virtual worlds are described as persistent virtual environments, open 24/7, and enabling people represented by avatars (a personal representation in 3D form) to create, play and interact in real time. Virtual worlds are online simulated environments where individuals assume avatar identity, and interact, communicate and engage in various activities within their world. Virtual worlds are not games or simulations, although games can be played and simulations conducted, but they are environments in which users or residents can create their own virtual life and activity. Another term used for virtual worlds is Synthetic Worlds (Castranova, 2005) and sometimes are known as the Metaverse – from the science fiction novel, Snow Crash – the meta-universe of avatars interacting in a 3D world.

Virtual worlds are growing dramatically, and Castranova (2001) claimed that tens of thousands of adults spend more time in their virtual world than in paid employment. These 3D worlds are rapidly developing and becoming more sophisticated, with over 200 multi-user online role-playing games listed on Wikipedia (April, 2008) alone, and where millions of real dollars are spent in virtual worlds every year on artifacts, virtual clothing and real world goods. Virtual worlds are rapidly emerging as an alternative way of communicating, collaborating, and organizing, and many leading companies, including IBM, Sun, Mazda, Adidas and Coca-Cola, among others, have a presence in a virtual world.

This study focuses on the use of one such world – Second Life – a virtual landscape that allows residents (people) to create their own world and activities, interact, play, do business, and communicate. Second Life was launched in 2003 by Linden Research (Linden Labs), and the number of users has grown dramatically over the past twelve months to around 13 million registered accounts; though many of these are not active. In March 2008, residents spent 28 million hours online with about 40,000 residents logged on any moment in time (Linden Labs, April 2008). Despite its popularity, Second Life has strong competitors, including IMVU, Gaia, There, Active Worlds and Kaneva (Wikipedia, 2008)

MEETING THE CHALLENGE OF THE NET GENERATION

Today's educators are facing new challenges not experienced by teachers in the past. They are dealing with students who are part of a 'Net Generation' (Oblinger, 2003), brought up in a 3-D world of virtual communication, visual complexity and online identities. They want and expect more engaging, empowering and interactive learning experiences in their student life than universities are normally able to give them. They are daily in touch with technology and innovation in their lives through digital media, PDA phones and their online networks. Prensky (2002) estimates that by the time someone reaches the age of 21 they will have spent 5,000 hours reading and 10,000 hours playing video games!

Hagel and Armstrong (1997) believe that students belong to virtual communities to discuss shared interests (communities of interest), to develop social relations (community of relationships), and to explore new identities (communities of fantasy). According to Zemsky and Massey (2004), students want to use technology in order to be entertained through music, games and movies, to be connected to one another and to present themselves and their work. A 'Teaching with Games' study in the UK revealed that 59 percent of teachers want to use educational games for teaching purposes and 53 percent say they would do so because they are an interactive way of motivating and engaging students (Sandford, Ulicsak, Facer & Rudd, 2006). The challenge is how to do it, and how to make it work in the university context.

Simulations, games and role-play in a virtual world can engage students in their own learning (Armstrong, 2003) and encourage learning by doing, (Schank, 1997). Students engaged in Virtual Worlds can be interpreting, analyzing, discovering, evaluating, acting, and problem-solving – often learning without knowing they are learning! Armstrong (2003) and Brown (1994) demonstrated how role-playing in teaching tourism and hospitality developed interest in the topic and retention of knowledge and skills, captured students' imagination, stimulated involvement and building the confidence of students in a non-threatening environment.

THE GROWTH OF VIRTUAL WORLDS IN HIGHER EDUCATION

Over 400 universities, plus many schools, are actively using or experimenting with virtual worlds, with more than 4,000 teachers on the Second Life Education mailing list, according to the founder of Linden Labs (Spiegel, 2008). A study by Jennings and Collins (2007) of 170 universities indicated there are two primary models in Second Life – the 'working campus' and the 'reflective campus'. The working campus is where learning, teaching, research and communication take place in the virtual environment in ways it could not in the real world. The working campus is unlike the real campus, but provides functional spaces for events and activities using open air auditoriums and buildings without walls etc. (Jennings and Collins, 2007). The reflective campus is one that reproduces its physical campus, buildings and identity in the virtual world in a realistic way to reflect the actual 'bricks and mortar' university campus. Virtual campuses or educational islands give educators an opportunity to explore the potential of offering learning opportunities for students using virtual reality, simulations and 3D environments in a creative learning space. Avatars can explore a visually rich environment and interact with others in ways that stimulate innovation and encourage collaboration. Virtual worlds offer a new dimension to 'distance learning'

with a more personal and enjoyable experience to meet the needs of 21st Century learners – the digital natives inhabiting our campuses today.

Universities are using Second Life in a variety of ways. Some are conducting formal teaching by giving lectures, tutorials, training, presentations or demonstrations. Informal education offers more exploration and creativity and can include student exhibitions, role play, games and virtual quests (Bleacher & Stockman, 2008). According to Livingstone and Kemp (2007) the most common uses of Second Life seem to be in computer studies, science subjects and humanities, architectural studies, urban planning, graphic design, anatomy, natural sciences, law, languages, programming, literature, art and tourism. Dickey (2005) reviewed two distance learning projects using virtual worlds and concluded that virtual worlds offered ‘collaboration, community and experiential learning’ and allowed learners to become ‘situated and embodied’ within the learning environment (p. 449).

According to one study of the use of virtual worlds for scientific study, Bainbridge (2007) concluded that virtual worlds may ‘foster scientific habits of mind better than traditional schools can.’ He found that virtual worlds enable students to develop critical thinking skills and to understand their environment and that “graduates” of virtual worlds may include ‘many future engineers, natural scientists, and social scientists ready to remake the real world in the image of the virtual worlds’ (Bainbridge, 2007 p 475).

USING SECOND LIFE FOR TEACHING HOTEL & TOURISM MANAGEMENT STUDENTS

In 2007, the School of Hotel and Tourism Management (SHTM) at The Hong Kong Polytechnic University (PolyU), created a virtual campus in Second Life called Polyusotel (<http://virtel.shtm.polyu.edu.hk/sotel/>) with the following aims;

- To provide a cost-effective platform to explore teaching and learning in a virtual world;
- To provide a flexible environment for the freshman student orientation program;
- To provide a virtual campus for other departments to test the use of virtual worlds;
- To encourage innovation and research in educational technology;
- To support the University’s outcome-based education initiative by offering ‘real-world’ scenarios for teaching and learning in hospitality and tourism subjects.

The project team originally planned to create their own virtual world using one of the open source platforms available such as OpenSim. However, the attraction of using an established world with an existing infrastructure with many users outweighed the early plan. It was therefore decided to test one of the platforms available, Second Life, and to explore the educational possibilities of trialing the platform to support the School’s student orientation program held in September and October 2007. It was envisioned that this first foray into the educational possibilities of Virtual Worlds would provide a valuable learning experience and lead to areas of further exploration. This ‘virtual’ orientation program aimed to cultivate new learning experiences for the students in preparation for their first year of university life. Students created their own avatars and took part in various ‘missions’ and teamed up with fellow students in a

series of structured and open activities. Opportunities were also provided for them to interact with, and learn from, senior students and teachers through in-world consultations. The orientation program provided many lessons on what to do and what not to do, with sufficient encouragement to continue the development of facilities and learning activities in Second Life.



Figure 1: HK Polytechnic University campus in Second Life

Following the student orientation, the project team opened a second island in Second Life and over a 6-month period built four hotels, a conference centre and a corporate yacht for use with hospitality and tourism subjects. Four academics from SHTM chose to use this medium for some of their classes in the Spring semester 2008. These teachers could be classified under Rogers (1995) 'Diffusion of Innovation Model' as 'early adopters' – those who are more open to adaptation than others, and who are willing to try new ideas in order to engage students in their courses. After analysis of their courses, the objectives, learning methods and learning activities for their Second Life classes were determined and are set out in Table 1 below.

Table 1: Objectives, learning methods and learning activities of Second Life Classes

Subject	Resort & Spa Hotel Management	Customer Relationship Management	Meeting Management	Hospitality Facilities Management & Design
Class size	140	35	140	75
Objectives	Evaluate and review the basic elements of a resort and spa complex.	Deal with customer problems and complaints	Review promotional strategies and the effectiveness of virtual conference facilities	Apply principles of facilities design to a simulated guest room

Learning method	Virtual field trip	Role play exercises	Lecture and demonstration	Guest room design
Activity	Visit to Rixos Virtual Hotel with introduction by Marketing Manager and tour of hotel and Turkish spa	Students take role of guest or hotel staff and deal with specified customer problem	Lecture from overseas professor, plus real-time demonstration of virtual conference facilities	Teams plan and design virtual hotel guest rooms

The virtual classes were held towards the end of the semester, some during lectures and others in tutorials. Before the classes, students attended one or two workshops in a computer laboratory to familiarize themselves with using Second Life. Here they learned how to create their avatar, change their avatar appearance, how to navigate, search and communicate with chat, IM and voice. Students planning guest room design also learned how to manage their inventory of artifacts, and how to modify the design, colors and textures of the furnishings and equipment for their hotel rooms.

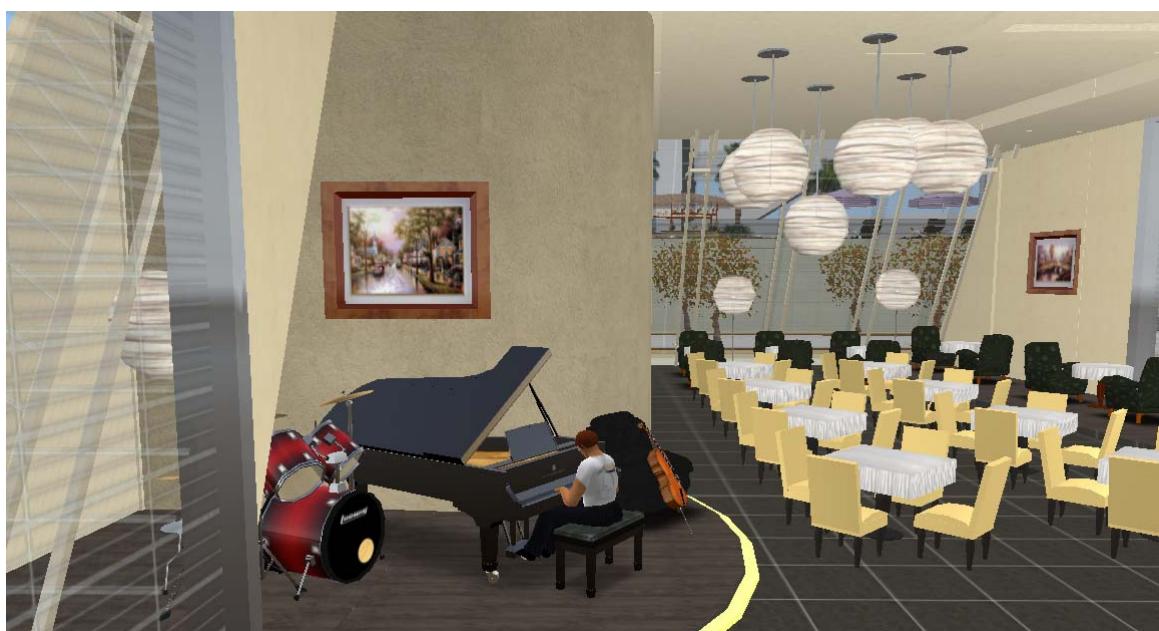


Figure 2: Interior of one of the Virtual Hotels

Challenges of using Second Life

Teachers were asked about the main challenges they faced in using Second Life. Table 2 shows that time limitations and technical issues – lack of facilities and technical or other support were the two major challenges faced by the teachers in using Second Life. This is confirmed in other studies from Antonacci and Modaress (2005) and Sanchez (2007). Although the teacher's experience in setting up the software is less important, there is an essential need to provide teachers with more time for learning and using Second Life as well as technical support and resources.

Table 2: Main challenges faced in using Second Life

Challenges	Responses
A. Difficulties in setting up Second Life	2
B. Not enough time for the session or tutorial	4
C. Facing some technical issues in the classroom	4
D. Lack of experience in using Second Life	3
E. Other challenges	4

Benefits of Using Second Life

Teachers saw the most important benefits of Second Life as those related to its ability to provide students with more interactivity and enjoyment of their learning experience as well as adding variety to the teaching (Table 3).

Table 3: Things that went well in using Second Life

Options	Responses
Students enjoyed using it	4
It was an interactive experience for students	4
It was a good learning experience for students	4
It provided a new dimension for my subject	3
It gave some variety to the subject	4



Figure 3: Hotel Management students on a virtual hotel field trip

Continued use of Second Life for Teaching

Teachers were asked if they would use Second Life again for their teaching. All four teachers said they would, and this suggests that despite the challenges, they saw the value and found it a new and interesting tool for teaching and learning.

Things to do differently

In light of their experience of using Second Life, teachers were asked what they would do differently if they used Second Life again. Table 4 indicates that teachers need more time to get familiar with using Second Life. They also suggest that students should be given more time to learn about the system and that students and teachers should have tutorials in Second Life before starting classes.

Table 4: What things could be done differently?

	Alternative
1.	I would allow more time for students' hands-on experience.
2.	I would schedule classes/tutorials in a computer lab and guide students into SL personally during initial sessions.
3.	I would give students more time to learn the system.
4.	I would select some year 1 subjects to kick off first; so, when the students move to year 2 and 3, they hopefully will be well prepared for any Second Life activities.
5.	I would ensure all the computers were set up and ready to go before the students arrive in class.
6.	I would use Second Life only in a more operations based class such as Lodging Management.
7.	I would spend more time using Second Life so that I am able to assist the students more.

How to improve the use of Second Life?

Teachers were then asked to suggest what could be done to improve the use of Second Life in the classroom. It is clear that most teachers would like to have more training and promotion about Second Life for the entire faculty and students to make them aware of how the medium could be used for teaching and learning. It was also suggested that Second Life should be installed in most of the University's computer laboratories so teachers and students would be able to log in from any PC in the University. (See Table 5)

Table 5: Possible improvements of the use of Second Life

	Possible improvement
1.	Promote SL to the students.
2.	Include it as a default install on all the University computers.
3.	Include University IT Services in planning the use of SL.
4.	Video a few online sessions and present the video to senior management, other staff and students.
5.	The technical support staff need to be more professional when communicating with students and conducting the training sessions.
6.	Continue to let faculty know how it can be used as a teaching tool. Make them aware of the hotels that have already been built, and suggest ideas for interactive sessions.

Support in Using Second Life

Teachers were asked then to suggest what support should be given to help their use of Second Life (Table 6). Teachers indicated they would like training in how to create, build and delete objects. However, they would still like the support of technicians to help them when they start the class in order to not waste time with the technical issues. Teachers new to SL need technical support available because they may not be able to manage teaching without it.

Table 6: Support needed for using Second Life

	Type of Support
1.	Training.
2.	Close support from technicians.
3.	Allow teachers to create/delete objects.
4.	Make sure the "learning environment" in Second life is ready at the beginning of class so that time will not be wasted for the set-up.
5.	Keep providing the same support; it is really appreciated.



Figure 4: Students working in groups to design hotel guestrooms in Second Life hotel

Encouraging wider use of Second Life

Teachers were asked what could be done to encourage other teachers to explore the use of Second Life in their teaching (Table 7). The following comments indicate that there should be continuous training and sharing sessions as well as video tutorials about using Second Life. Also, teachers suggest that there could be some instructions via e-mail on how to install SL software on their computers.

Table 7: How to encourage wider use of Second Life

	Suggested ways to encourage use of SL
1.	Training, sharing sessions, suggestions on ideas for teaching
2.	Posters

3.	Online introductory video (link sent to all staff via email)
4.	Email with links to start using SL
5.	SL installation guide via email.
6.	Show teachers how Second Life fits their subjects
7.	Make-up a hotel guestroom
8.	Continue to promote how Second Life can be used, what can be done, etc.

Other Suggestions for Using Second Life

Teachers were asked for their suggestions in planning and using Second Life in the next academic year (Table 8). Most of the suggestions indicate that teachers want to be informed about the development of the University Islands so they can coordinate with the activities when planning their courses. In addition, one of the creative suggestions was to make the Second Life orientation mandatory for all new University students and create accounts for them instead of spending time setting up their accounts and learning the software later on.

Table 8: Suggestions to help in planning and using SL in next academic year

	Suggestion
1.	Inform staff about the progress of the University Islands so that teachers can coordinate with the activity when planning their courses
2.	Some effort should be made to 'convert' university IT Department to SL. This would improve the accessibility of SL radically for students.
3.	Make the Second Life orientation mandatory so that all new incoming students have an account and have no need to spend one or two hours setting up, and all have the same-level knowledge about SL so no need for basic training.
4.	Consider making the system more user-friendly
5.	Use Second Life for the Lodging Management class in Fall 2008

STUDENT'S PERSPECTIVES ON USING SECOND LIFE

A survey of 152 students from the four pilot classes was conducted after their Second Life course activity which provided some perspectives on students' views of using the virtual world. When asked about whether Second Life added interest to their studies, the response showed that 57 percent of students overall found it interesting or very interesting, 24 percent were neutral and 19 percent of students found it boring or not very interesting (Figure 5). However, depending on the nature of the activity, the responses changed, and this may indicate that certain activities are either more attractive to students or work better for them than others. For example, 58 percent of students doing guest room design found the activity very interesting, and 37 percent found it interesting. Eleven percent of students found the virtual lecture and demonstration very interesting, and 84 percent found it interesting.

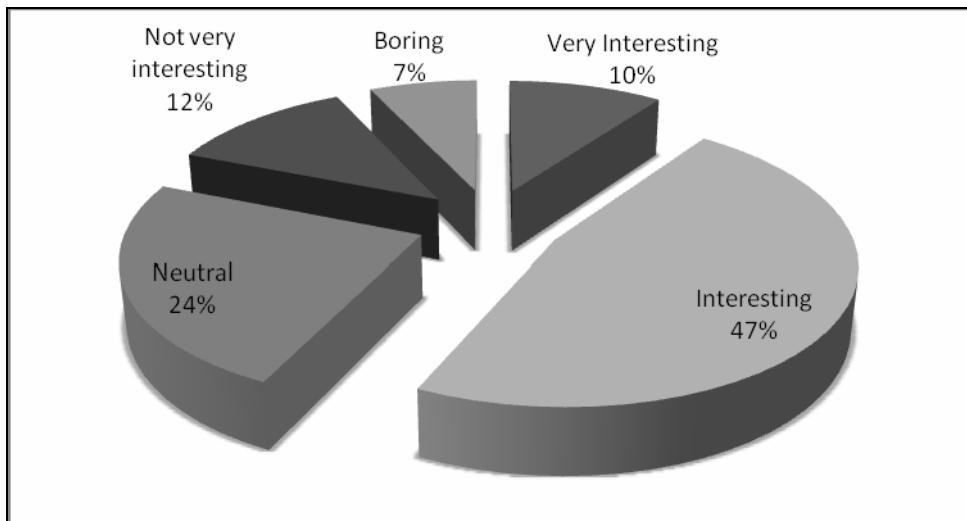


Figure 5: Students' level of interest in using Second Life in their classes

However, for the virtual field trip only 40 percent found it interesting or very interesting, with 34 percent neutral, and the remaining 26 percent uninterested or bored. For the role play activity 55 percent of students found it interesting, 21 percent were neutral, and 21 percent found it not very interesting. Our conclusions are that the guest room design created more engagement and a sense of satisfaction with a demonstrable outcome. The virtual lecture and demonstrations were more passive activities for students, but in a familiar environment. However, the role play and field trip were more unpredictable, open-ended, less structured and both experienced technical problems during the activities. Further study could be made to compare Asian students with Western students to see if there are any differences in perception towards the type of activities experienced based on active and passive learning styles.



Figure 6: Students taking part in the hotel role play scenarios

The questionnaire also asked students for their perceptions, on a 5-point Likert scale (with 5 = very helpful and 1 = not very helpful) of how well Second Life assisted their learning (Figure 7). For this question the rating was between 2.7 and 3.5 across nine dimensions. Across all four classes, students told us the strong points of Second Life were, ‘it was fun’ 3.5; ‘it was interactive’ 3.4; and ‘it aroused learning interest’ 3.3. The weak points were, ‘it was effective in gaining knowledge’ 2.7; ‘it improved collaboration’ 2.9; ‘it updated information’ 2.9; and ‘it improved cooperation’ 2.9 (Figure 7). However it should be noted that the guest room design activities again gained a high rating with, ‘it was fun’ 4.5; ‘it aroused learning interest’ 4.3 and ‘it was interactive’ 4.3.

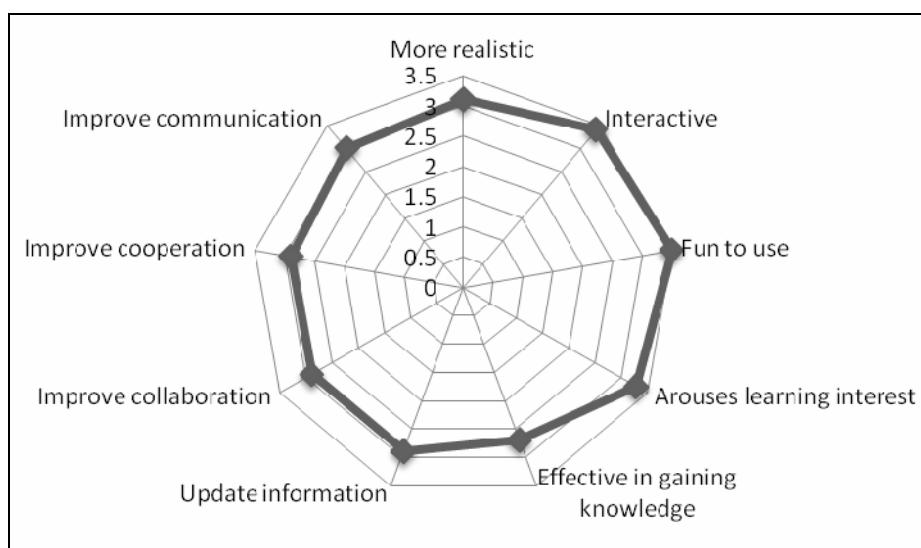


Figure 7: Students' perceptions of the benefits of using Second Life to assist learning

Our conclusions here are that generally students find Second Life fun to use, it arouses their learning interest and provides an interactive experience. It would seem that if some of the technical issues can be overcome and students and teachers are well prepared for class then it is a very positive medium to enhance learning or provide more interactive and enjoyable learning experiences for students (and teachers). Our findings are very similar to another university's use of Second Life for four Spanish language classes, where 22-40 percent were neutral about it, around 50 percent had technical problems but 50 percent said they enjoyed the tasks, it was interactive and they recognized how much they learned (Larsen 2008).

Students were asked what difficulties they experienced in using Second Life across eight dimensions on a 5-point Likert Scale (with 1 = very difficult and 5 = very easy). Students' indicated that they found the initial set up, registration and installation more difficult than using an avatar and working in Second Life (Figure 8). This confirms the teachers' perspective that more support is required at the beginning to ensure students and teachers are competent and confident in using the medium before starting learning activities.

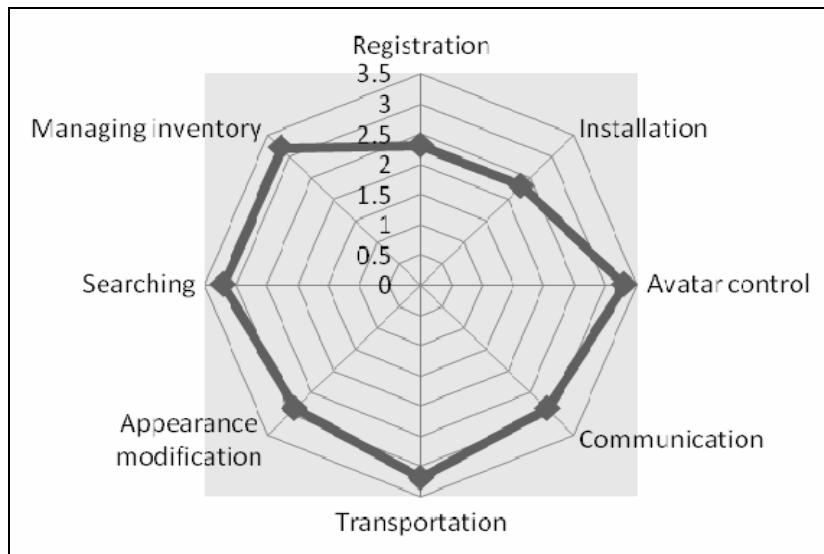


Figure 8: Students' level of difficulty in using Second Life

CONCLUSIONS FROM THE STUDY

Hospitality and tourism education can be enhanced by using virtual worlds.

Visits can be made to virtual hotels such as Starwood's Aloft, InterContinental Hotel's - Crowne Plaza Virtual Meeting Place, and the Rixos Hotel and Resort islands. Travel companies have also set up shop in Second Life – TUI and STA have islands, where visitors can take tours of the virtual world and also book real life holidays. Conference and event companies are opening virtual conference and exhibition centers in Second Life, and there are a number of fascinating locations for field trips including Frankfurt, Copenhagen, Barcelona, Galveston, Casablanca, Mexico and elsewhere. Educators have designed eco-friendly islands, and created simulations of the effects of global warming and rising oceans. The opportunity to use Second Life for role play, facilities design, simulation, group work and social interaction are boundless.



Figure 9: Starwood Aloft Hotel in Second Life

Careful consideration needs to be made before moving ahead

Before implementation takes place there needs to be full discussion of the issues and resource implications. Questions like whether to purchase an island or rent a shared space with other educators need to be considered. Support from the university IT department is important, along with training in the technological and pedagogical use of virtual worlds. Information and promotion, with good case examples, need to be shared with senior managers and faculty members to engage them in using the platform. Collaboration with others may be one way forward – where groups of hospitality educators come together to share ideas and pool resources. However, even when these initiatives are taken, it is still only likely to be the innovators and early adopters who will probably use virtual worlds regularly. Though virtual worlds could go mainstream in the next 3-4 years, some educators are pessimistic about the uptake. Batson (2008) comments, “For the majority, it will never be a comfortable learning space unless they in that majority have control while they are teaching and if they see enough people using SL so that a tipping point has been reached. No good to fret now because that tipping point may be 20 years away, or never!”

The role of the teacher is central to the success

Bradshaw (2006) emphasized the central role of the teacher in effective virtual learning. She suggested that if teachers and learners are to achieve the full potential of Second Life, there are three key factors, reinforced from our own survey:

- the provision of time for teachers to prepare themselves for inhabiting Second Life as a broad and deep learning environment
- according critical importance to continuous, integrated reflection – which means incorporating guided dialogues with students before and after immersion
- providing adequate professional development and ongoing support for teachers, as they venture into what, for most, will be unknown territory – as both guides and ‘guardians’ of their students.

The virtual world environment can be disorienting for learners *and* teachers. Rather than feeling proficient in the teaching environment, teachers are often thrust into the learner role as they acquire new skills themselves. Teachers in Second Life should try to develop their roles as facilitators because not every teacher in a face-to-face environment can facilitate virtual courses without good training and having the required technical skills (Schrum & Hong, 2002; Wozniak & Silveria, 2004; Wang, 2005). Their new roles are listed and discussed below:

- Be a learner first: Take time to learn the interface and culture. Teachers should learn how to move, to fly, to teleport just the same way students are learning how to move in Second Life.
- The teacher role is to create a level of interactivity to motivate students to focus on the main theme of learning in Second Life.
- Teachers should know how to balance in-world and out-world instructional experiences, making connections between what is learned in Second Life and the classroom and the curriculum.
- Teachers should realize that familiar ways teaching may not be as effective in a 3D multi-user space.

- Teachers should try to connect with more experienced educators and take advantage of the communities of practice in Second Life.

The Challenges and Difficulties in Using Virtual Worlds

While many educators are excited about the potential of virtual worlds, others are wary or skeptical. Some consider them as up-market games, while others are afraid they will degrade student learning. Virtual worlds are certainly not a panacea for higher education, and present many challenges for students, teachers, and administrators. Antonacci, Thomas, Gerald, Lamoureux, Hollingsworth & Noakes (2007) identified seven major challenges faced by most teachers and students, these being: technology, support, faculty development, legal issues, mature content, learning curve and cost. First, most university campuses do not have technical infrastructure to support large-scale implementation of virtual worlds as this requires fast computer processors and video cards and a stable network. Second, most virtual worlds run off external servers and this creates IT support difficulties for students and teachers – IT support is essential for the smooth running of virtual worlds. Third, the majority of faculty members are digital immigrants, (Prensky 2001) who are highly challenged by new technology and need to be handled carefully and supported extensively.

Fourth, according to Kluge & Riley (2008) intellectual property issues, security, data protection and personal safety of students are also big concerns to universities. Fifth, along with security issues are concerns about the adult content available in virtual worlds, such as vendors offering virtual sex and gambling. These threats can be minimized, and are probably less innocuous than those found on the World Wide Web. Under-18s are usually banned from adult worlds, and teachers have to get special permission to enter and teach in the under-18 Second Life Teen Grid, for example. Sixth, the learning curve for virtual worlds is steep, and it is estimated that it may take up to 40 hours to fully familiarize new users with all the essential components for navigating and functioning well in some virtual worlds (Antonacci et al, 2007). Not everyone will be willing to devote this amount of time to learning a new piece of software. Finally, cost may be a deterrent for some universities (Kluge & Riley, 2008) – who may want to ensure their investment is carefully planned before committing to a long-term development in a virtual world.

Final thoughts

Whatever the challenges, virtual worlds won't disappear, and the potential benefits seem to far outweigh the drawbacks. It also seems likely that virtual worlds like Second Life could become part of every university's teaching toolkit – enabling them to provide a shared, interactive learning space where students and teachers can meet together in real time for creative learning activities. Business organizations will also find ways to collaborate, communicate, and provide training for their employees and in so doing begin to interface with education. Price (2008) states that, "Virtual worlds also have the potential to enhance and enrich education. Such technologies can bring learning to life in a way that is not readily matched by other digital media." The conclusion is that the use of virtual worlds will continue to grow exponentially as young people increasingly use them to learn, play and work, and that in time virtual worlds will become as common place as instant messaging or email.

REFERENCES

- Antonacci, D. M., & Modares, N. (2005). Second life: The educational possibilities of a massively multiplayer virtual world. Retrieved May 25, 2008 from <http://www2.kumc.edu/tlt/SLEDUCAUSES2005/SLPresentationOutline.htm>
- Antonacci, D.M, Thomas, D, Gerald, S, Lamoureux, E, Hollingsworth, R, & Noakes, N, (2007). Teaching and Learning Experiences in a User-Created Virtual World (2008) Educause. Retrieved April 4, 2008 from <http://www.educause.edu/ir/library/pdf/EDU07269C.pdf>
- Armstrong, E. K. (2003). Applications of Role-Playing in Tourism Management Teaching: An Evaluation of a Learning Method. *Journal of Hospitality, Leisure, Sport & Tourism Education* 2(1), pp5-16.
- Au, W. Virtual World Population: 50 million by 2011 (May 20, 2007). Retrieved April 9, 2008 from <http://gigaom.com/2007/05/20/virtual-world-population-50-million-by-2011/>
- Batson, T. (2008). Designed for Education, Topic from SL Education Mailing list, February 27, 2008, at 20:10. Retrieved from educators-bounces@lists.secondlife.com
- Bainbridge, W.S. (2007). The Scientific Research Potential of Virtual Worlds. *Science* 27 July 2007: Vol. 317. no. 5837, pp. 472 – 476. Retrieved April 4, 2008 from <http://www.sciencemag.org/cgi/content/full/317/5837/47>
- Bleacher, L, & Stockman, S. (2008). Second Life: A Venue for Informal Education and Participatory Exploration. *Lunar and Planetary Science XXXIX* (2008)
- Bradshaw, D. (2006). New Practices in Flexible Learning. *Virtual Worlds – Real Learning! Pedagogical reflections*. Australian Government Department of Education and Training. Retrieved March 18, 2008 from http://virtualworlds.flexiblelearning.net.au/reports/VWRL_pedagog_reflect.pdf
- Brown, K. M. (1994). Using Role Play to Integrate Ethics into the Business Curriculum: A Financial Management Example. *Journal of Business Ethics* 13(2), pp105-110.
- Castranova, E, (2001). "Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier" CESifo Working Paper Series No. 618. Retrieved March 16, 2008 from <http://ssrn.com/abstract=294828>
- Castranova, E, (2005). *Synthetic Worlds: The Business and Culture of Online Games*, University of Chicago Press
- Dickey, M. D. (2005). Three-dimensional virtual worlds and distance learning: two case studies of Active Worlds as a medium for distance education. *British Journal of Educational Technology* 36(3): 439-451.
- Gartner Inc. (2007). Gartner Says 80 Percent of Active Internet Users Will Have A "Second Life" in the Virtual World by the End of 2011. Retrieved February 12, 2008 from <http://www.gartner.com/it/page.jsp?id=503861>
- Hagel, H and Armstrong, A. (1997). *Net Gain: Expanding Markets through Virtual Communities*. Boston, Mass. Business School Press

- Hanson, L. (2007). Niko Partners Report Finds China's Video Game Market Revenue Surged 68 percent in 2006. Retrieved April 9, 2008 from
http://www.nikopartners.com/Niko_Press_Release_050307.pdf
- Kluge, S. & Riley, L. (2008). Teaching in Virtual Worlds: Opportunities and Challenges. Retrieved on May 31, 2008 from
<http://proceedings.informingscience.org/InSITE2008/IISITv5p127-135Kluge459.pdf>
- Jennings, N. & Collins, C. (2007). Virtual or Virtually U: Educational institutions in second life. International Journal of Social Sciences, 2(3), 180-187. Retrieved March 6, 2008 from <http://www.waset.org/ijss/v2/v2-3-28.pdf>
- Larsen, L. (2008). Supporting Faculty Adoption of Emerging Technologies: Wanderlust or Creating a Campus Roadmap? Educause. Retrieved June 8, 2008 from
<http://connect.educause.edu/blog/llarsen/supportingfacultyadoption/46868?time=1214119796>
- Linden Labs (2008). Economic Statistics (April 4, 2008) Retrieved April 4, 2008 From
http://secondlife.com/whatis/economy_stats.php
- List of MMORPG (April 4, 2008). From Wikipedia, the free encyclopedia. Retrieved April 4, 2008 from
http://en.wikipedia.org/wiki/List_of_massively_multiplayer_online_role-playing_games
- Livingstone, D and Kemp, J. (2007) Massively Multi-Learner: Recent Advances in 3D Social Environments. Retrieved March 28, 2008 from
<http://cis.paisley.ac.uk/research/journal/v10n2/LinvingstoneKemp.doc>
- Mitham, N. (2008). Virtual Worlds by The Numbers: Today and The Future: Virtual Worlds Expo 2008 (NYC) Retrieved April 9, 2008 from
<http://www.kzero.co.uk/blog/?p=2021#more-2021>
- Oblinger, D. (2003). Boomers, Gen-Xers, and Millennials: Understanding the 'New Students,' EDUCAUSE Review, vol. 38, no. 4 (July/August 2003), pp. 37–47. Retrieved March 21, 2008 from <http://www.educause.edu/apps/er/erm03/erm034.asp>
- Prensky, M, (2001). Digital Natives, Digital Immigrants. On the Horizon (NCB University Press, Vol. 9 No. 5, October 2001, Retrieved March 23, 2008 from
<http://www.marcprensky.com/writing/Prensky%20Digital%20Natives,%20Digital%20Immigrants%20Part1.pdf>
- Prensky, M. (2002). Why NOT Simulation? Retrieved March 21, 2008 from
<http://www.marcprensky.com/writing/Prensky%20Why%20NOT%20Simulation.pdf>.
- Price, K. (2008). Virtual skills for the real world. Computing. Retrieved April 9, 2008 from <http://wwwcomputing.co.uk/computing/analysis/2208333/virtual-skills-real-world-3775332>
- Rogers, E. M. (1995). Diffusion of innovations, Fourth edition. New York: The Free Press
- Sanchez, J. (2007). Breaking the Second Life Learning Curve, Educause Connect, Retrieved on March 20, 2008 from
<http://connect.educause.edu/blog/joesanchez/breakingthesecondlifehigh/45469?time=1214035735>

- Sandford, R, Ulicsak, M, Facer, K, & Rudd, T. (2006). Teaching with Games. Futurelab Report, Retrieved March 28, 2008 from
http://www.futurelab.org.uk/projects/teaching_with_games/research/final_report/
- Schank, R. (1997). Virtual Learning. A Revolutionary Approach to Building a Highly Skilled Workforce. McGraw-Hill, New York
- Schrum, L., & Hong, S. (2002). Dimensions and strategies for online success: Voices from experienced educators. *Journal of Asynchronous Learning Networks*, 6(1), 57–67. Retrieved September 25, 2007 from: http://www.sloan-c.org/publications/jaln/v6n1_schrum.asp
- Spiegel Online (2008). Interview with Second Life Founder Rosedale, Retrieved March 25, 2008 from <http://www.spiegel.de/international/world/0,1518,531700,00.html>
- Think Quest (2008). Virtual Worlds: The future of the Internet? The future of Education Retrieved March 26, 2008 from <http://library.thinkquest.org/23138/hstart.htm>
- Zemsky, R & Massey, W.E. (2004). Why the E-Learning Boom went Bust, Chronicle of Higher Education, Vol. 50, 9 July 2004, p B6 www.education.unlv.edu. Retrieved March 23, 2008 from <http://chronicle.com/weekly/v50/i44/44b00601.htm>

Citation:

Penfold. P., (In-Press) Learning Through the World of Second Life - A Hospitality and Tourism Experience, Journal Of Teaching In Travel & Tourism, Haworth Hospitality Publishing, Manuscript Submitted For Publication.