

Journal of • Virtual Worlds Research

jvwresearch.org ISSN: 1941-8477

The Metaverse Assembled

Volume 2, Number 5



Volume 2, Number 5

The Metaverse Assembled

April 2010

Editor-in-Chief

Jeremiah Spence

Guest Editors

Hanan Gazit, MetaverSense Ltd and H.I.T-Holon Institute of Technology, Israel

Leonel Morgado, UTAD, Portugal

D. Linda Garcia, Georgetown University, USA

Garrison LeMasters, Georgetown University, USA

Technical Staff

Max Burns
John Brengle
Sil Emerson

The Journal of Virtual Worlds Research is owned and published by the Virtual Worlds Institute, Inc. Austin, Texas, USA



The JVWR is an academic journal. As such, it is dedicated to the open exchange of information. For this reason, JVWR is freely available to individuals and institutions. Copies of this journal or articles in this journal may be distributed for research or educational purposes only free of charge and without permission. However, the JVWR does not grant permission for use of any content in advertisements or advertising supplements or in any manner that would imply an endorsement of any product or service. All uses beyond research or educational purposes require the written permission of the JVWR. Authors who publish in the Journal of Virtual Worlds Research will release their articles under the Creative Commons Attribution No Derivative Works 3.0 United States (cc-by-nd) license.

The Journal of Virtual Worlds Research is funded by its sponsors and contributions from readers. If this material is useful to you, please consider making a contribution. To make a contribution online, visit: <http://jvwresearch.org/donate.html>

Volume 2, Number 5
The Metaverse Assembled
May 2010

A Second Life First Year Experience

Peter Duffy

Educational Development Centre, The Hong Kong Polytechnic University, Hong Kong

Paul Penfold

School of Hotel & Tourism Management, The Hong Kong Polytechnic University, Hong Kong

Abstract

Learning experiences within Multi User Virtual Environments (MUVE's) focus on discovery and active experiences and provide many opportunities to support multicultural learners. Virtual worlds have the potential to become meaningful, highly sophisticated tools for educators and students, and it is timely to consider how educators can move from the hype to the how and why? Consideration needs to be given to the characteristics of meaningful pedagogical activities that move learners from playing to an enhanced learning experience? This paper presents a case study in which the MUVE Second Life was used to support a First Life (Real-World) orientation programme for students within the School of Hotel and Tourism Management at the Hong Kong Polytechnic University. Presented is an overview of the approach, rationale for the use of Second Life as well as lessons learned in relation to the application of virtual worlds for learners within the Hong Kong context. The study concludes that the Second Life orientation programme was not as successful as envisioned. However, the specific lessons learned, and 'moments' of intervention and further assistance identified have provided rich material and an emerging interest' in relation to the incorporation of Second Life into meaningful educational activities in the university.

Keywords: Game Based Learning, Virtual Worlds, MUVE, Second Life, Higher Education

A Second Life First Year Experience

Peter Duffy

Educational Development Centre, The Hong Kong Polytechnic University, Hong Kong

Paul Penfold

School of Hotel & Tourism Management, The Hong Kong Polytechnic University, Hong Kong

Introduction

Why should the notion of incorporating Virtual Worlds such as Second Life (<http://secondlife.com/>) be important within education? In what ways has the rapid development of digital technologies associated with Second Life and its use in education enabled individuals to interact differently within existing and emerging ecologies of learning? How can educators engage students in appropriate pedagogical activities to incorporate virtual worlds like Second Life in meaningful ways?

This paper presents a case study in which the MUVE (multi-user virtual environment) Second Life was used to support various First Life (Real-World) Orientation Programs for freshman students within the School of Hotel and Tourism Management at the Hong Kong Polytechnic University. Presented is an overview of the approach, rationale for the use of Second Life as well as lessons learned in relation to the current application of virtual worlds in the provision of meaningful educational strategies for learners within a Hong Kong context.

A Student Context

The university environment has typically been viewed as a merging of the academic and social. Terms such as diverse learner, multiculturalism, educational equity, and learning styles have been used pervasively in the literature to indicate the diverse range of considerations within this educational context.

Many students experience difficulties in moving from their school life into University. This case study presents the integration of the virtual world Second Life into an existing student orientation within the School of Hospitality, Tourism and Management. The experience of first year university students has become a major focus of concern in the US, the UK and Australia. This has been prompted by factors such as increasing student numbers, widening diversity in the backgrounds of students, high student drop out rates in first year, and the accelerating implementation of teaching technologies and flexible course delivery (McInnis, James, & McNaught, 1995).

Ideally the enculturation of First Year Students involves practices to address these issues as it is in the first year that students are most likely to form lasting outlooks, values and patterns of behavior with respect to higher education and lifelong learning. Identifying the diverse multicultural learner, facilitating the myriad of classroom learning styles, developing responsive curricula, and implementing innovative teaching methodologies are strategies that must work simultaneously to provide an equitable and engaging classroom environment and introduction to university life for all students (ASHE Report, 2002; Bonner & Hairston, 2001; Meacham, McClellan, Pearse, & Rashidi; Weinstein, Tomlinson-Clarke, & Curran, 2004).

Students today have grown up within a world of pervasive technology including mobile phones, digital cameras and the omnipresent internet. Described as, “Gen-X, Millennials, the Nintendo and Net Generation” (Tapscott, 1997; Oblinger, 2003; Olsen, 2005), these students

interact in immersive 3-D worlds, blog, listen to podcasts, instant message friends and collaborate in the creation of ‘digital stories’ for their ePortfolio. They absorb information quickly, in images and video as well as text, from multiple sources simultaneously. They operate at what Prensky (2004) describes as, “twitch speed”, expecting instant responses and feedback.

A range of new technologies relating to the use of Virtual Worlds is playing an increasing role in many learners’ everyday lives. Virtual worlds offer the potential to engage learners at higher levels, offer flexibility in identity and access, create a sense of presence within in-world educational tasks and have the potential to become a meaningful, highly sophisticated tool for educators. The two key considerations here are how can we capitalize on the willingness of learners to engage with virtual worlds? And, what is the range of pedagogical activities to move learners from playing to an enhanced learning experience?

The case study being presented within this paper highlights the particular use of Second Life within the multicultural context of Hong Kong and in particular the first year SHTM (School of Hotel and Tourism Management) student cohort at the Hong Kong Polytechnic University. This context typifies many areas and associated pedagogic challenges associated with a diverse multicultural and in many cases trilingual ESL student. Presented will be initially an overview of Virtual Worlds, a rationale for the use of Second Life as well as lessons learned in relation to the context of the case study and current application of virtual worlds in the provision of meaningful educational strategies for learners within a Hong Kong context.

Background to Virtual Worlds

“The unique qualities of a 3D virtual worlds can provide opportunities for rich sensory immersive experiences, authentic contexts and activities for experiential learning, simulation and role-play, modeling of complex scenarios, a platform for data visualization and opportunities for collaboration and co-creation that can not be easily experienced using other platforms”.¹

Virtual worlds are extensive and absorbing 3D places that people use to interact and communicate with others using an "avatar". Virtual worlds, such as Second Life (<http://secondlife.com/>) or Active Worlds (<http://www.activeworlds.com/>), are different from game worlds (e.g.: World of Warcraft) in that they "can be applied to any context". Game worlds usually "have a fixed, goal-oriented purpose". This means that with virtual worlds you can do nearly anything, limited to the general environment of the world and the users located there. Game worlds have a specific goal to which everything you do is bringing you closer. to that goal. Virtual world users develop their own goals and pursue them. Whether it's making friends, making money, education or just having fun, in a virtual world, you can do whatever you want.

The following are six commonly identified features of Virtual Worlds²:

1. Shared Space: the world allows many users to participate at once.
2. Graphical User Interface: the world depicts space visually.
3. Immediacy: interaction takes place in real time.
4. Interactivity: the world allows users to alter, develop, build, content.
5. Persistence: continues regardless of whether individual users are logged in.

¹ Introduction to Second Life: <http://sleducation.wikispaces.com/educationaluses>

² Adapted from Current Reality and Future Vision, Open Virtual Worlds; January, 2008.

6. Socialization/Community: the world allows and encourages the formation of in-world social groups.

Virtual worlds are being increasingly used by higher education (Hiltch and Duncan, 2005). Platforms such as Second Life make it relatively fast and cost-effective to design and set up a virtual environment for teaching and learning. Aldrich (2004) suggested there are three types of simulations – linear, cyclical and open-ended. Each has its strengths and weaknesses, and each have a main purpose or outcome. Linear simulations are like movies and books – they have a beginning and ending – and although there may be different routes through the content, the end result is the same. Most e-Learning today is linear, usually includes standard tests and assessment, and is primarily owned and managed by the creator. Cyclical content is the sort of simulation used in arcade games where the outcomes depend on the skill and speed of the user. This type of content may be useful in the educational context if you need to teach a skill or precise activity, but it is less valuable as a learning tool. Open-ended content is the most challenging – for the user as well as the creator – and is very good in developing strategies and transferable skills. Virtual worlds can be considered the next generation of e-learning and can offer this open-ended structure for learners.

Background to Second Life

Launched in 2003, Second Life is an online 3D virtual world created by Linden Labs³. Much like massively multiplayer games, Second Life provides an immersive environment for users to play and interact in. However, Second Life goes beyond a game, allowing residents to build and create their own environments; and interact with others from any internet connected location. Philip Rosedale from Linden Labs suggests the following as a vision for Second Life;

"Well.. what if you could create a 3D immersive environment that looked as good as a video game, that was tactile and visceral and exciting and you know sexy, fun to be in... but had the (of course) very web like and very compelling property that everything in it was built by you. And that in fact, the method of building would be the method of living. That you would just do things there, in the same way that you do them in the real world... you could touch things, you could sculpt things, you could build, you could just make stuff." (Rosedale, 2008)

Second Life is the size of a small city, with thousands of servers (called simulators) and a Resident population of over 15 million (and growing). Residents come to the world from over 100 countries with concentrations in North America and the UK. Demographically, 60% are men, 40% are women and they span in age from 18 – 85. It is based on a game engine, but expanded to allow more natural social interactions and user-created content outside the restrictions of a game. It has a self-contained economy of Linden dollars, themed simulations created by users, and over 70,000 logged in at any given time (Second Life Metrics, March 2009). Users are represented by completely customizable avatars and are from diverse real-world backgrounds such as gamers, housewives, artists, musicians, programmers, lawyers, firemen, political activists, college students, business owners, active duty military overseas, architects, and medical doctors, to name just a few⁴. There is also a Second Life Teen Grid for teenagers between the ages of 13 and 17, and where adults are not allowed in.

³ <http://secondlife.com/>

⁴ Source of statistics, current as of March 2009: FAQ – Second Life, <http://secondlife.com/whatis/faq.php>

The School of Hotel and Tourism Management decided to explore the educational possibilities of Second Life after developing a virtual hospitality simulation, 'Virtel'. The Virtel project was an interactive 3-D game that allowed students to participate in simulations relating to real-world authentic scenarios that they may experience in their work placement. Second Life was chosen to further explore the pedagogic possibilities of Virtual Worlds for several reasons:

1. It is extremely challenging for any educational institution to develop a well produced simulation as they cannot compete on budget with industry, nor can they compete with talented game designers and Second Life provides a ready-made platform.
2. Second Life enables students, educators, and businesses to create innovative environments for distance learning, computer-supported cooperative work, simulations and teaching.
3. Second Life provides a 3-D simulation in a safe environment to enhance experiential learning, allowing individuals to practice skills, try new ideas, and learn from their mistakes. The ability to prepare for similar real-world experiences by using Second Life as a tool for simulation was identified as having unlimited potential.
4. Students and educators can work together in Second Life from anywhere in the world as part of a networked and very social virtual classroom environment.
5. Second Life offers flexibility in access, identity, is easily customized and offers a distinct feeling of presence not seen in other e-Learning (social) activities.
6. Using Second Life as a supplement to traditional classroom environments also provides new opportunities for enriching an existing curriculum.

Background to the Case Study

At the Hong Kong Polytechnic University (PolyU), the School of Hotel and Tourism Management (SHTM) together with the School of Design (SD) created an innovative virtual campus in Second Life called PolyuSotel (<http://virtel.shtm.polyu.edu.hk/sotel/>) in order to;

- To provide a cost-effective platform for SHTM to continue teaching & learning in a virtual world;
- To provide an innovative and stimulating learning environment for students;
- To provide an existing virtual campus for other departments to test and use Virtual worlds;
- To encourage innovation and research in educational technology;
- To support PolyU's outcome-based education initiative by offering 'real-world' scenarios for teaching and learning

The project team originally planned to create their own virtual world using one of the open source platforms available. However, the attraction of using an existing world with a large number of residents 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 conducted during September to October 2007. It was envisioned that this first foray into the educational possibilities of Virtual Worlds would provide a valuable learning experience and areas of further exploration. This 'virtual' orientation program aimed to cultivate new learning experiences for the students and the provision of various educational activities. Over 400 full-time Year 1 hotel and tourism students

were invited to join the orientation program and academic staff; Year 2 and 3 students took the roles of “teacher” and “student mentor”.

PolyUSotel

This island was developed with many recognizable buildings from the bricks and mortar PolyU campus to enhance an existing student orientation programme. It was designed to help students become familiarized with their new study environment and understand how to become an effective and successful student in the Hong Kong Polytechnic University.

In PolyUSotel, students registered and created a personalized 3-D avatar in order to participate in various structured tasks related to the SHTM orientation programme. They were expected to explore the campus and team-up with fellow students in a series of competitive and structured activities. Opportunities were also provided for them to interact with, and learn from, senior students and teachers through in-world consultations. Also, as a motivational strategy they could redeem virtual gifts at PolyUSotel using the reward points accumulated on successful completion of tasks or competitions. Lastly a set of unstructured ‘places of interest’ were developed in order to assist the students in exploring this virtual environment. The following clarifies in more detail the three identified aspects of the PolyUSotel experience.

1. Activities

PolyUSotel provided a series of activities within a supported environment to help students get to know fellow students, teachers, learn about university life and some essential learning skills. The students could interact with other participants in the PolyUSotel at their own discretion and also had the opportunity to complete a scheduled series of interesting activities requiring active participation and completion of learning tasks. There were chances for students individually and in teams to be rewarded with real and virtual gifts upon completion of these activities or missions. Below is a sample of two of the missions:

EG: Mission 2: Grooming in formal events

Brief: Collect a formal outfit at the “Grooming” kiosk in PolyUSotel. Wear the outfit and alter your character’s appearance when you attend online discussion session in the virtual classroom/theatre.

EG: Mission 4: Learning styles

Brief: Complete a Learning Styles self-test at <http://www.engr.ncsu.edu/learningstyles/ilsweb.html>. Submit your personal result according to the score sheet generated, and obtain a meeting schedule you need for Mission 5. Duration: 4 Sep – 17 Sep Reward points 20 points

2. In-World real-time consultations

Teachers were scheduled to provide in-world real-time consultation sessions on different themes related to students study and personal development. This was on a voluntary basis for students and the maximum capacity for each session was around 30 persons, on a first-come-first-served basis.

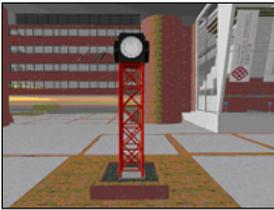
The following were some of the topic areas offered:

- a. Personal grooming and classroom etiquette
- b. Understanding your learning style & strengths

- c. How to be an effective student: study skills (reading, note taking, handling exams etc)
- d. How to become an active learner in PolyU
- e. Managing pressure & stress
- f. Academic Honesty – what is plagiarism and how to deal with it?
- g. Work-integrated education – what it is, how it works, how you benefit + Q&A
- h. Student exchange program + Q&A
- i. Meeting with 2007/08 Year 1 tutor (Q&A)
- j. Meeting with 2006/07 Year 1 tutor (Q&A)
- k. Meeting with MSc program leader (Q&A)

3. Places of Interest

Also within PolyUSotel the following were established as ‘open-ended’ and ‘unstructured’ places of interest:

 <p>Clock tower and Plaza</p>	<p>The Clock Tower Landmark was the central meeting place in PolyUSotel and where you first appeared when you teleported to the island. It mimicked the real-world clock tower on the Polyu campus.</p>
 <p>Information Signpost</p>	<p>The Signpost was designed to provide hints and guidance for students related to various tasks and consultations</p>
 <p>Team Room</p>	<p>The Team Room was designed to provide various break-out rooms where smaller groups could meet and discuss aspects related to the tasks for different mission objectives</p>
 <p>Wishing Tree</p>	<p>The Wishing Tree was where students could leave feedback and comments in relation to their experiences in the PolyUSotel environment</p>

 <p>Theatre</p>	<p>The Theater space was designed to provide an environment similar to a Real-World lecture with the opportunity for groups to meet, participate in lecture-like activities and presentations</p>
 <p>Resource Centre</p>	<p>The Resource Centre provided an environment similar to the Real-World library in which resources (video / text. etc) were linked to bookshelves in the Centre.</p>
 <p>Gift Shop</p>	<p>The Gift Shop was where students could spend their reward points earned through participation in various activities on items for their avatar OR real-world gift vouchers.</p>

Figure 1: Places of Interest in PolyUSotel

Second Life Pedagogy

The following were identified as key educational benefits of Second Life as opposed to other eLearning possibilities that were considered in order to provide a richer orientation experience for the SHTM students.

Social Presence

One of the most profound impact of the sweeping popularity of the Internet advocates social learning which is based on the fundamental premise that learning and understanding is 'socially constructed' through a wide range of activities afforded by a rich social learning space where students can interact with other fellow students, tutors, and the instructional elements in a wide range of social activities.

Richard J. Light (2001) highlighted that one of the strongest-determinants of student learning success was students' ability to engage in small study groups and thus socially build their understandings and construct knowledge. In the literature there are a number of documented studies exploring the potential of social learning (Klamma et al 2006; Saltze et al, 2004; Reffay and Chanier, 2002; Kreijns et al, 2002; Hiltz and Turoff, 2002 and Brusilovsky et al, 2005), including those performed on Second Life in the Harvard Law School, the University of Southern Queensland (Australia), Ohio University, New York University, to name a few (Ducheneaut et al, 2005).

Second Life provides a much greater sense of presence than the World Wide Web. Usually students manifest their presence in the Web through activities such as discussion forums, blogs, posting YouTube videos, or social networking sites such as Facebook and MySpace. In Second Life there is a greater sense of realism, as if users are attending the event with others.

Technologies within Second Life also contribute to this sense of social presence by allowing users to more clearly hear someone speaking close by than with an avatar that is further away.

Self Identity

The use of avatars to represent the individual can significantly change social / multicultural perceptions and judgment, and gender and status expectations. Bradshaw, (2006) describes Michelle Dodd, of Challenger TAFE (WA), who managed a Framework inclusive e-learning project in 2006 and used Yahoo avatars with learners with a disability. She discovered that the students were very liberated by the use of their avatars, as they could choose what identity they would like to be, although it is interesting to note that towards the end of the project individual avatars more closely resembled the real person in looks.

Imagine being a learner where for example English is the predominant medium of instruction. However your native language is not English. Students could be assigned different roles within specific activities designed to allow them to take on various identities in role-play in order to highlight some of the difficulties and strategies needed to be adopted within various learning scenarios. The experience could well make that student (and teacher) a more empathic learners and bring to light some underpinnings that need to be considered in these types of learning scenarios. Lancefield (2006), suggests that the level of anonymity afforded in virtual worlds through playing a role and use of an avatar can enhance the level of social confidence to enact new behaviors and increase self-awareness and efficacy.

Teachers as Central

The 2006 New Practices in Flexible Learning action research project, “Virtual Worlds – Real Learning!”, emphasized that the role of the teacher is absolutely central and highlighted that at every stage, the teacher needs to be fully present, engaged and alert. This report suggested that if teachers and learners are to achieve the educational wealth inherent in Second Life, there are three key factors that are vital:

- 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

Enhances students’ learning experience

Simulation, games and role-play are notable for their extensive potential in engaging students in their own learning with a stimulating, ‘real-life’ environment applicable to tourism and hospitality curricula, with a focus on work-based problem solving and professional, transferable skills (Armstrong, 2003). Simulations can be described as learning by doing, as though the user is actually in a situation, and really doing something (Schank, 1997) and simulations are being increasingly used not only by industry and the military but in education. Successful educational simulations need to be a combination of three elements according to Aldrich (2004). The first is ‘simulation’ which models reality and enables discovery, experimentation, practice and construction of content. Second, ‘game elements’ which provide

familiar and entertaining interactions and which motivate students to learn. Third, the ‘pedagogical or didactic’ elements which help to provide a focus for activities and ensure students’ time is spent productively.

Engages students in deeper learning

Students engaged in educational games and simulations are interpreting, analyzing, discovering, evaluating, acting, and problem-solving. Simulations are suggested as a replacement of real-life situations which are too dangerous, too expensive, or impractical to allow students to experience in the real-world. Simulations can provide an environment where students can explore, experiment, question and reflect on real life situations. Role-play is historically been used in a range of disciplines including drama, education, psychology (Britt, 1995), social sciences (Duveen and Solomon, 1994), health sciences, business (Brown, 1994; Egri, 1999), tourism and hospitality, ethics (Brown, 1994; Raisner, 1997; Armstrong 2003), economics, marketing, political science and information technology (Kirkwood and Ross, 1997). New approaches are also emerging via specially designed computer software (Wagner, 1997). Simulation and role-play, if designed appropriately, can provide the following benefits:

- Enhance interest in the topic and retention of knowledge and skills;
- Capture students’ imagination, stimulate involvement and allow significant freedom of expression;
- Build the confidence of students in a non-threatening environment.

Uses learning methods that motivate students and achieve results

Students today are in touch with technology and innovation in their everyday lives. These young people are community-focused (especially in Asia), they 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) (Hagel and Armstrong, 1997). 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. Educational institutions are playing catch up, and not doing it very successfully. Yet, despite this situation, there are signs of change, with learning taking place in some academic departments which demonstrate student-centered and innovative teaching through e-Learning and “Serious Games” (Annetta, Murray, Laird, Bohr and Park, 2006).

It might be construed that the use of ‘game’ ideas such as ‘missions’ and ‘reward point’ might not be educationally sound or in conflict with other pedagogical ideas described earlier. However, the use of these game concepts to motivate and help students plot a path through the program seemed to help rather than hinder the learning experience. Some students in their evaluation indicated that they expected more game-based activities and were disappointed that Second Life was not so ‘dynamic’ as other games they had played. Therefore our use of some game concepts helped to provide a pathway and a plot which did help some students progress through the program.

Hind-Sight and Lessons Learned

The program was voluntary and received over 60 student registrations, however only 10 students took part in the activities and workshops. This substantial lack of numbers in the project indicated for the project team that there were some serious issues that needed to be addressed in

future teaching and learning activities incorporating Virtual Worlds. There were a number of identifiable moments within the process of the program delivery that provide the reader with an insight into areas identified for improvement.

Moment 1: Awareness and Understanding of the Program

What was identified very early on in the program was a greater need to have defined and demonstrated through numerous channels the benefits of participation in the program. Also explored was the option of making some aspect of the program more closely tied to a compulsory event such as one inclusive of the students Work Integrated Education training.

Moment 2: Technical Issues and Support

Second Life does require some quite specific technical requirements and although every effort was made to ensure a specific lab was established with these specifications still students needed additional support (for example maybe a designated contact point via email, phone or MSN messenger

Moment 3: Second Life Orientation

There were some difficulties in students being able to complete the Second Life Orientation Island and from there to easily locate the PolyUSotel Island. It was identified that a guide to the user interface in Second Life and making the PolyUSotel Island open to the public would have been beneficial.

Moment 4: Develop a PolyUSotel presence

At times because of the lack of students in the PolyUSotel Island there was a feeling of isolation by the students (and staff) who did participate. Recommended for future trials would be to train a cohort of students in the use of PolyUSotel and have them present in the island as guides to meet newcomers and to help them settle in.

Moment 5: Clarity of Task Instruction

Although some of the tasks were identified as beneficial to students from an educational perspective and also from the perspective of achieving the objectives of the program, there at times seemed to be a disjunction between these and the social or play aspects of the simulation in Second Life. Future plans should aim to both simplify the tasks and associated instructions and to provide more opportunities to ‘play / explore’.

Moment 6: Timing and Awareness of Consultation

There was a clash in times when students were interested in using Second Life and when the consultation times / teaching staff were available. Students mostly explored Second Life in the evenings and early morning (typical of Hong Kong students) whereas teachers often were available for consultation during working hours. It was also suggested to align the tasks with more concrete real-world tasks.

Conclusions and follow-up

Clearly the use of Second Life to support the student orientation program of the SHTM students was not the success (in terms of usage) that the project team had hoped for. However, it is pleasing to note that this initial foray into the use of Virtual Worlds has provided an emerging

grassroots interest at the Hong Kong Polytechnic University in the teaching and learning possibilities of Second Life. As an outcome of this project several other program are now actively teaching using Second Life and a recently submitted eLearning funding proposal entitled “Core SL – HK PolyU in Second Life” highlights the success of this case in relation to initiating some conversations and further interest in this area.

This new project, “Core SL – HK PolyU in Second Life”, started in late-2008 and builds on and expands upon existing funded projects in Second Life and the experiences of teaching and learning efforts by the School of Hotel and Tourism Management and the School of Design. It has already provided a new virtual campus to enhance the learning experience of students at the HK Polytechnic University through the development and deployment of four functional spaces within the 3D online world of Second Life.

The project was jointly proposed by staff from the Department of Applied Social Sciences, the Department of Computing, the School of Hotel and Tourism Management, the School of Design, and the Pao Yue-kong library. The project has initially targeted a number of program and courses which directly affect over 1000 students in the four different departments or schools. The new Hong Kong PolyU Second Life Campus has provided a rich 3D virtual environment to support student learning activities with four functional spaces: Teaching & Learning, Assessment, Design and Resources.

Closing thoughts

If Moore's law holds true, Second Life will not be at the bleeding edge of technology for long. As server power and bandwidth increase, more possibilities will develop around Second Life and Virtual Worlds in general. An anticipated increase in ubiquity and technology will allow Second Life and related three-dimensional simulations to develop a more realistic look and enhanced interface, with more powerful tools for communication and interaction.

One can easily imagine a more immersive environment. Kurzweil (2005) describes several scenarios for building full sensory environments with offshoots of today's technology. Technologies like Second Life provide people with an opportunity to role-play very different lives. Avatars cross gender, race, and cultural lines, blurring the differences that can be obvious in real life interactions. The social and (multi)cultural implications of a more powerful and immersive environment are immense. The first artificially intelligent agents (AIA's) capable of interacting with avatar residents are appearing in Second Life by linking modern artificial intelligence engines into avatars. Some are obviously designed to appear artificial, while others attempt to pose as real people. As the engines get better, the distinction between residents and AIA's becomes will become more blurred.

Like the early days of the Internet, there is an optimism driving experimentation and exploration across the learning ecology presented by Second Life. The unique qualities of Second Life can provide immersive authentic contexts involving simulation and role-play and opportunities for social learning that can not be easily achieved using other platforms.

Which tools are used by learners and teachers, and whether such tools will be used at all, will always depend on the specific pedagogical needs of a teaching situation. Second Life presents educators with shifting frames of reference to consider in relation to teaching and learning. Clearly acknowledged is that the use of Second Life as part of the orientation program in SHTM was not as successful as originally envisioned. However, the specific lessons learned, and ‘moments’ of intervention and further assistance identified have provided rich material and

an emerging interest' in relation to the incorporation of Second Life into meaningful educational activities.

Acknowledgements

The PolyU Virtel and PolyUSotel projects referred to in this paper were developed at the Hong Kong Polytechnic University through a project funded by the Education Development Centre of Hong Kong Polytechnic University and jointly initiated by Paul Penfold from the School of Hotel and Tourism Management and Mr Henry Ma from the School of Design. The project team consisted of Creamy Kong, Gigi Ay, Alex Ng, Jeffrey Mak, Yim Cheung Kong, Jackie Kwong, Annie Ko, Jovi Liu and Bill Liu within project management and technical roles. Peter Duffy was the Learning Designer associated with the project.

Bibliography

- Aldrich, C. (2004). Six Criteria of an Educational Simulation, Learning Circuits, [online] http://www.learningcircuits.org/NR/rdonlyres/F2ED000A-7A59-4108-A6CB-1BE4F4CC1CA5/4719/clark_e2.pdf
- Annetta, L.A., Murray, M., Gull-Laird, S., Bohr, S., Park, J.C. (2006). Serious Games: Incorporating Video Games in the Classroom. *Educause Quarterly*, 29(3), pp. 16-22.
- 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), pp. 5-16.
- ASHE Report. (2002). Building conditions that promote change. Washington, DC: ASHE – ERIC Higher Education.
- Bonner, F. A., & Hairston, J. (2001). Teaching the multicultural learner: A musical theory approach to pedagogical practices [Electronic version]. *Journal for the Scholarship of Teaching and Learning*, 2(1), 43-50.
- Bradshaw, D. (2006). New Practices in Flexible Learning. Virtual Worlds – Real Learning! Pedagogical reflections. Australian Government Department of Education and Training. [online]http://virtualworlds.flexiblelearning.net.au/reports/VWRL_pedagog_reflect.pdf
- Britt., M. A. (1995). Research on Trial: A Pedagogy for Research Methods Instruction. In *Teaching of Psychology: Ideas and Innovations: Proceedings of the Annual Conference on Undergraduate Teaching of Psychology*. New York, pp. 124-133.
- Brown, K. M. (1994). Using Role Play to Integrate Ethics into the Business Curriculum: A Financial Management Example. *Journal of Business Ethics* 13(2), pp. 105-110.
- Brusilovsky, P., Farzan, R. and Ahn, J. (2005). Comprehensive personalized information access in an educational digital library. *Proc. ACM/IEEE International Joint Conference on Digital Libraries (JCDL'2005)*, pp. 9-18.
- Current reality and future vision, open virtual worlds, (2008). Sun Services White Paper. [online], <http://www.sun.com/service/applicationserversubscriptions/OpenVirtualWorld.pdf>
- Ducheneaut, N. and Moore, R. J. (2005). More than just 'XP': Learning social skills in multiplayer online games. *Interactive Technology and Smart Education*, 2(2). pp. 89-100.
- Duveen, J. and Solomon, J. (1994). The Great Evolution Trial: Use of Role-Play in the Classroom. *Journal of Research in Science Teaching* 31(5), pp 575-582.

- Egri, C. P. (1999). The Environmental Round Table Role-Play Exercise: The Dynamics of Multi-Stakeholder Decision-Making Processes. *Journal of Management Education* 23(1), pp 95-112.
- Hagel, H and Armstrong, A. (1997). *Net Gain: Expanding Markets through Virtual Communities*. Boston, Mass. Business School Press
- Hiltch. L., and Duncan. J. (2005). Games in Higher Ed: When Halo 2, Civilization IV, and Xbox 360 Come to Campus, *Educause* 15 August 2005, [online], <http://www.educause.edu/ir/library/pdf/DEC0503.pdf>
- Hiltz, S. and Turoff, M. (2002). What makes learning effective? *Communications of the ACM*, 45(4), pp. 56-59. April 2002.
- Kirkwood, J. and Ross, D. (1997). Multimedia Design and Development: An Industry Simulation Project Delivered on the Internet. In J. Osborne, D. Roberts and J. Walker (eds.) *Open, Flexible and Distance Learning: Education and Training in the 21st Century*. Launceston: University of Tasmania, pp. 234-239.
- Klamma, R. Chatti, M.A. Duval, E. Fiedler, S. Hummel, H. Hvannberg, E.T. Kaibel, A. Kieslinger, B. Kravcik, M. Law, E. Naeve, A. Scott, P. Specht, M. Tattersall, C. Vuorikari, R. (2006). Social Software for Professional Learning: Examples and Research Issues. *Proc. 6th IEEE International Conference on Advanced Learning Technologies*. pp. 912- 915.
- Kreijns, K., Kirschner, P.A. and Jochems, W. (2002). The sociability of computer supported~collaborative learning environments. *Journal of Education Technology and Society*, 5(1). Pp. 8-22.
- Kurzweil, R. (2005). *The Singularity Is Near*, New York: Viking Press
- Lancefield, K. (2006). *New Practices in Flexible Learning. Virtual Worlds – Real Learning! A psychological perspective*. Australian Government Department of Education and Training. [online], http://virtualworlds.flexiblelearning.net.au/reports/VWRL_psychology.pdf
- Light, R. J. (2001). *Making the Most of College: Students Speak Their Minds*. Cambridge: Harvard University Press, 2001.
- Meacham, J., McClellan, M., Pearse, T., & Rashidi, G. (2003). Student diversity in classes and education outcomes: Student perceptions. *College Student Journal*, 37(4), pp. 627-643.
- Oblinger, D. (2003). Boomers, Gen-Xers, and Millennials: Understanding the 'New Students,' *EDUCAUSE Review*, 38(4) (July/August 2003), pp. 37–47, [online]. <http://www.educause.edu/apps/er/erm03/erm034.asp>

- Olsen, S. (2005). The 'millennials' usher in a new era. [online] http://news.com.com/2009-1025_3-5944666.html
- Prensky, M. (2002). Why NOT Simulation? [online], <http://www.marcprensky.com/writing/Prensky%20-%20why%20not%20simulation.pdf>.
- Prensky, M. (2004). Digital Game Based Learning. McGraw-Hill, New York.
- Raisner, J. A. (1997). Using the 'Ethical Environment' Paradigm to Teach Business Ethics: The Case of the Maquiladoras. *Journal of Business Ethics* 16(12/13), pp. 1331-1346.
- Reffay C., and Chanier, T. (2002.) Social network analysis used for modeling collaboration in distance learning. Proc. Intelligent Tutoring System Conference (ITS702). France, June 2002.
- Rosedale, P. (2008). Watch a Video: Glimpse Inside a Metaverse: The Virtual World of Second Life. [online], <http://flnw.wikispaces.com/secondlife?f=print>
- Saltze, J., Hiltz, S. and Turoff, M. (2004). Student social graphs: visualizing a student's online social network. Proc. ACM conference on Computer Supported Collaborative Work (CSCWJ04), pp.596-599.
- Schank, R. (1997). Virtual Learning. A Revolutionary Approach to Building a Highly Skilled Workforce. McGraw-Hill, New York.
- Second Life (2009). Economic Statistics (Raw Data Files) Wednesday, March 25, 2009. Retrieved March 25, 2009 from <http://secondlife.com/statistics/economy-data.php>
- Second Life (2009) FAQ – Second Life. (2008). [online], <http://secondlife.com/whatis/faq.php>
- Second Life Introduction to Second Life. (2008). [online], <http://sleducation.wikispaces.com/educationaluses>
- Tapscott, D. (1997). Growing Up Digital: The Rise of the Net Generation. McGraw-Hill, New York.
- Teaching with Games. (2008). [online], http://www.futurelab.org.uk/resources/documents/project_reports/teaching_with_games/TWG_report.pdf
- Virtual Worlds – Real Learning! (2006). New Practices in Flexible Learning action research project. Australian Government Department of Education and Training. [online], <http://virtualworlds.flexiblelearning.net.au/>
- Zemsky, R and Massey, W.E. (2004). Why the E-Learning Boom went Bust, *Chronicle of Higher Education*, 50(9), [online].

http://education.unlv.edu/Educational_Leadership/higheredadmin/Admissions-Article.pdf#search=%22Why%20the%20E-Learning%20Boom%20went%20Bust%22

Second Life in Education, some examples:

- The growing use of Second Life within education is illustrated below by a small sample of many examples and is sourced from:
http://schohome.open.ac.uk/wikiworks/index.php/Second_Life_education_websites;
- The list of universities who have locations in SL
http://simteach.com/wiki/index.php?title=Institutions_and_Organizations_in_SL
- Second Life Education Wiki
http://simteach.com/wiki/index.php?title=Second_Life_Education_Wiki
- Proceedings of the Second Life Education Workshop (August 20th. August 2006)
<http://www.simteach.com/SLCC06/slcc2006-proceedings.pdf>
- Metalab: "Creating and exploring tools for online learning events within Second Life"
<http://metalab.blogspot.com/2006/06/communal-whiteboard.html>
- VITAL Lab at Ohio University - overview of a good range of SL projects
http://vital.cs.ohiou.edu/index.php/Second_Life_Development
- 101 Uses for Second Life in the College Classroom
<http://trumpy.cs.elon.edu/metaverse/gst364Win2005/handout.html>
- The New Media Consortium (NMC) Campus (SLurl) is the largest educational presence in Second Life and supports events, classes, demonstrations, art exhibitions and learning experiences (<http://sleducation.wikispaces.com/educationaluses>)

For more information about this project please refer to:

- <http://virtel.shtm.polyu.edu.hk/sotel/>
- <http://project.shtm.polyu.edu.hk/new-index.html>
- <http://slurl.com/secondlife/Polyusotel/128/1>