

# **Second Life Education Workshop 2007**

**Part of the Second Life Community  
Convention**

**Chicago Hilton, 24<sup>th</sup>-26<sup>th</sup> August 2007**

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And thanks to the numerous co-ordinators, in-world moderators, Chicago volunteers and assorted helpers!

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## Preface

In the year since the first SLCC Education Workshop, we've witnessed the growth of an international community, the evolution of an extensive Second Life ecosystem that includes blogs, wikis, mashups, and the development of model projects and practices that are shaping new policies for the integration of Web 2.0 and the 3D Web in education.

In August, 2006, the Second Life Educators (SLED) listserv had 500 members; only a year later, membership is close to 3900. Early adopters, now seasoned elders, pass along best practices, keynote conferences, and offer graduate courses about teaching and learning in Second Life. The Simteach.com SLED Wiki, hosted by conference co-chair Jeremy Kemp, lists 161 colleges and universities active in Second Life.

The Second Life K12 community—SLEDT—has 475 members. Educators working with 13-17-year-olds have launched projects from the U.S., the UK, Australia, Tasmania, Singapore, Turkey, and Japan. Global Kids and the teen library project, Eye4You Alliance, provide creative contexts for teens to practice leadership. Communities for teen scripters, builders, and mentors have emerged—several teens serve as developers for new adult-owned K12 projects.

We've seen a maturation of the ecosystem of blogs, wikis and mashups that links and extends the 3D world of Second Life with the flat web. The Second Life Best Practices in Education: Teaching, Learning, and Research conference had 1300 attendees on multiple sims during twenty four hours of workshops and presentations. This was the first in-world conference organized entirely by Second Life educators. It was streamed by the SL Cable Network in real-time to the web with live commentators. Presentations are archived on the conference wiki.

Funding organizations recognize the education innovation underway in Second Life. Sloodle, the Second Life + Moodle mashup (introduced by its originators at last year's SLCC), won an Eduserv grant to take development to the next level. The SaLamander Project, introduced here in these proceedings, received a grant to develop a working prototype that will link Second Life learning objects with existing learning object repositories like MERLOT.

What's ahead? SLED members are influencing education policy, identifying how learning in SL develops knowledge age skills (SchomePark, Open University), bridging the gap between their Second Life projects and state standards (Ramapo Islands, Suffern Middle School, New York), and designing assessment models and tools. We offer our enthusiastic appreciation to the SLED community's emerging leaders for perseverance in the face of often skeptical administrations and for the courage to reinvent yourselves as educators and learners. We're honored to work with you in Second Life.

Claudia L'Amoreaux/Claudia Linden & John Lester/Pathfinder Linden

Linden Lab

August 2007

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# Introduction

Welcome the proceedings of the 2007 Second Life Education Workshop. If by any chance you've seen last year's proceedings, then the first thing you'll notice about this volume is the size – almost three times the size of last year's. This mirrors the staggering growth in the educational use of Second Life that has occurred in the last 12 months, as noted by Claudia and Pathfinder in the preface.

With this growth there has also been a growth in the complexity of organising a workshop such as this – and our thanks go especially to the The Future United, organisers of the Second Life Community Convention, without whose help this simply could not happen. Jennifer Vatza, Tim Allen, Randal Moss, Elle Waters, Leo Newball amongst others deserve much grateful appreciation for their often thankless toil (though you may know them better by their Second Life names...).

We would also like to thank the volunteers on the program committee for their support in reviewing the proposals submitted... a four-fold increase since last years event.

We hope that these proceedings provide a useful snapshot of the state of education in Second Life as it is today. Within these pages you can find exemplar case studies illustrating how institutional issues in establishing Second Life can be overcome and a number of examples showing how the platform is being adapted to support learning in a wide range of fields and with diverse groups of learners. The sciences and arts are both well represented, demonstrating the breadth of content and interest to be found in the Second Life educational community.

The Second Life education community itself is perhaps what makes events like this so special – that such a vibrant and friendly community can exist across continents and academic divisions says something special – and makes it a community that we are proud to be part of.

Daniel Livingstone, University of Paisley

Jeremy Kemp, San José State University



# **Keynote: The Public Good, Passion, and Learning**

**Constance Yowell**

**MacArthur Foundation**

Insights gathered from the MacArthur Foundation's journey into fieldbuilding in virtual worlds,  
digital media, and learning

Connie M. Yowell is the Director of Education in the Foundation's Program on Human and Community Development. In this role, she focuses on grants relating to public education, and on the implications for education of young people's use of digital media.

Prior to joining the Foundation, Yowell was an Associate Professor in the School of Education at the University of Illinois at Chicago, where her work included the study of reasons why Latino youth drop out of high school. Previously she worked as a Policy Analyst in the Office of Policy and Planning of the U.S. Department of Education. Before that Yowell was a Research Assistant at the University of California at San Francisco and at Stanford University.

Yowell earned her bachelor's degree from Yale and her Ph.D. from Stanford University.



# **Keynote: Why Creativity Matters**

**Larry Johnson**

**CEO, New Media Consortium**

Why is the range and diversity of self-expression in spaces like Second Life so broad? What is it about these environments that are producing the phenomenal growth seen over the last few years? What is it that makes people willing, even eager, to spend hours online interacting in virtual space? A complete novice to massively multiplayer environments two years ago, today Larry heads up an effort by the New Media Consortium that is deeply engaged in exploring questions like these. His journey parallels and illuminates that of many others. As the NMC launches a new series of dialogs on these and related topics, join Larry for a discussion of why he believes that rich multi-media spaces like Second Life are fundamentally changing the way we think about learning, social interaction, and self-expression.

## **ABOUT THE SPEAKER**

Dr. Larry Johnson serves as Chief Executive Officer of the New Media Consortium, an international consortium of more than 200 universities, colleges, museums, research centers, and technology companies. NMC Virtual Worlds helps learning-focused organizations with leased virtual space, community support and design services. Larry is both known to the Second Life education community and an avid evangelist for the educational use of SL.

# Papers

# Global Kids, Inc.'s Best Practices in Using Virtual Worlds For Education

Barry Joseph

Director Online Leadership Program, Global Kids, Inc., NYC, NY

## ABSTRACT

### Best practices using Second Life for real world education:

1. Playground versus Workplace
2. Performative
3. Collaboration and Cross-functional Teams
4. Social Networking
5. Recognize and Support Skill Stratification
6. Teacher becomes Facilitator, Student becomes Peer Mentor
7. Scale Projects to Fit Resources
8. Situate Second Life within a Larger Internet Ecology
9. Leverage In-world Resources
10. When Technology Fails, Know When To Move On
11. Time is Relative
12. Distance Learning Tool

## BEST PRACTICES IN USING SECOND LIFE FOR REAL WORLD EDUCATION

### 1. PLAYGROUND VERSUS WORKPLACE

To many, a classroom that felt like a playground would be viewed as a failure. In Second Life, however, especially in the teen grid, it is the norm. SL is already a game-like environment, where residents can not help but play with concepts of self representation, with alternative physics, and more. But the workplace of the educator, who may be on a schedule with serious content to address, need not be in conflict with the playspace of the learner, who wants to have fun and bring a creative dynamic to their interactions. Educational programs work best in Second Life that can strike a balance, live in the space where the line between the two

is impossibly blurred, and roll with the unexpected consequences.



In one week in the Fall of 2006, Global Kids brought two sets of after school youth into Second Life, each for the first time. One was a group using Second Life to make serious games. They entered on a Monday. The second was a group using Second Life to make machinima. They entered on a Tuesday. That Tuesday evening, back at home, after dinner, one of us logged into Second Life to do some work. Standing there, waiting for the avatar to finish rezzing, were two students from one program and a third from another. The youth were from all over New York City, yet unlikely to ever meet in person. Yet there they were in Second Life, meeting one another, and now patiently waiting for the GK staff member to appear as well. Before long a dozen teens had logged in, not just from these two programs but from our summer camp as well. They all hung out and chatted. The campers offered to take the new residents on a tour of the grid while other youth from the two after school programs went to the closest sandbox to practice building together. Most students do not want to return to school after escaping for the day; these teens, however, could not wait to get back.

### 2. PERFORMATIVE

Every day, through a million different decisions, we construct how we want to appear to others, through the way we dress, walk, shape our bodies, and more. In Second Life, the performative aspect of these decisions becomes explicit, as the decisions are intentional and often extreme. The sense of safety through anonymity can encourage one to experiment in ways not possible offline. One can change his or her gender, race, and even species. As James Paul Gee once said when visiting Global Kids Island, “For the first time in your life, you can choose when to use gender, ethnicity, or class as a strategy. You can use it with people when you want to or you can put it aside.” The dynamic nature of our daily performance of “self” is also emphasized, as it is as easy in Second Life to change one’s gender as it is to change one’s pants. Educational programs can not only leverage the impermanence of identity within virtual worlds but help to make these issues explicit for learners or use these features to explore various real world issues like race or class.



We eventually got used to the fact that our teen intern, Mercury Metropolitan, who presented as a black female, was actually a white male. When asked he had this to say about it: “At first it was really a personal experiment. I wanted to see what sort of reaction I received and if I was treated any differently. When I first started, I was a white male avatar, and found it difficult to fit into some already existing cliques. So, I wanted to try a different approach - creating a virtual identity that was different from my real identity, but remaining transparent about my real life identity if ever questions were brought up in conversation. Being honest about your real identity is important if you want to form ‘real’ friendships, ones that can even extend outside of

the virtual world. I was actually treated even better than I was as a white male avatar. There were also a lot more clothing choices as a female. I’ve grown attached to this female avatar.”

### **3. COLLABORATION AND CROSS-FUNCTIONAL TEAMS**

One of the strengths of a virtual world is the ability to collaborate. A sandbox is always a popular place in Second Life, where residents often hang out and simply play by building things together. A solitary educational task in Second Life can be turned from dull to exciting when done by a team. For example, to teach teens how to build basic objects and bring images into Second Life, we pair teams with words, such as “peace” or “justice,” send them to the web to find images that depict either their presence or absence, then train them to create billboards in-world to show off their finds. Cross-functional teams, one form of collaboration encouraged by virtual worlds, was described by James Paul Gee as collaborations in which:

“...players form teams in which each player contributes a different set of skills. Each player must master a specialty... but the players must understand each other’s specializations well enough to coordinate with one another. Thus, the knowledge needed to play the games is distributed among a set of real people and their smart tools, much as in a modern science lab or high-tech workplace.”

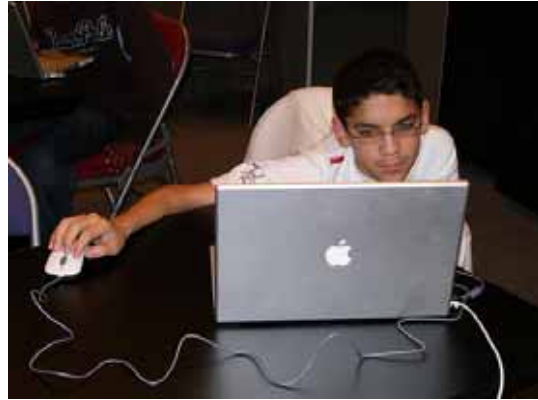
When we make machinima in our after school program, everyone plays a different role. Some teens focus on the film making skills, such as directing, or acting, or filming. Other focus on the Second Life aspects, creating sets, or costumes, or avatars. No one teen can do it all, but together they have all the skills they need, and more, to pull it off.



#### 4. SOCIAL NETWORKING

Second Life is not only a graphically rich 3D building environment. It is also an emerging social network, similar to others like Facebook and MySpace, in which individuals connect with other individuals, forming networks of connections which interconnect with other networks of connections. There are many tools in Second Life for participating in the emerging social network: join or create a group, send an IM to a group to get help from those logged in, send and receive group notices, add people to your friends list and more. These tools can be used to publicize events, to locate advice or help, or, as Henry Jenkins details in *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, educate teens about how to effectively use these networks:

“Learning in a networked society involves understanding how networks work and how to deploy them for one’s own ends. It involves understanding the social and cultural contexts within which different information emerges, when to trust and when not to trust others, to filter and prioritize relevant data, and how to use networks to get one’s own work out into the world and in front of a relevant and, with hope, appreciative public.”



We always make sure our teens join relevant groups once they enter Second Life. Rather than answer their questions, such as “I need to film on a racetrack – where can I find one?” or “How can I make a car,” we ask them to send a group IM. Someone is bound to be online who can help and they need to learn how to access and assess the resource within their social networks. This turns what may look like an isolated teen alone at a computer into one awash in rich and varied social connections.

#### 5. RECOGNIZE AND SUPPORT SKILL STRATIFICATION

Learners will develop skills in different orders and at different rates. Some will be fascinated with their avatar, learning sophisticated ways to modify their shape or create clothing. Some will be drawn to build increasingly more sophisticated objects. Others will make friend after friend and learn how to manage the social network. Rather than be a liability, this can be a strength. Support the leadership skills of those early adapters who develop certain skills, encouraging them to help others and make that role visible.



In our after school machinima program, six sessions in Second Life had barely passed before one GK trainer overheard one GK youth leader tell another, when having difficulty in Second Life, to “Ask Joe.” Not the GK trainer, an expert in Second Life, but Joe, a teenager, who had emerged as the first peer resource. For weeks after, rather than answer certain questions, the GK trainers would defer to Joe for an answer and, at times, ask him to first learn a skill and then teach the others. This initiated a year of the youth looking to one another for guidance as different teens specialized and excelled at different skills.

#### **6. TEACHER BECOMES FACILITATOR, STUDENT BECOMES PEER MENTOR**

You do not need to know something in Second Life in order to teach it – you just need to know how to connect your students with people who do. As a social network, information and people are ever-present and fluid; educators who can navigate these networks and train their students to do the same need not rely on being the expert importing knowledge but become facilitators connecting students and information.

As teachers become facilitators, and teens specialize and their skills stratify, learners are able to teach one another, not necessarily in a formal manner but informally, when required. Rather than isolate learners from one another, or discourage side conversations, the interactions between students can be where some of the best learning takes place, for all involved.



During our after school gaming program, two GK Trainers worked with fifteen teens. Each teen picked one thing they wanted to learn. Not only would it have been impossible for the two trainers to simultaneously teach fifteen different

Second Life skills, but most of the skills were beyond the modest abilities of these trainers: building a car, designing clothing, etc. But by the end of the day each teen said they learned the skill they wanted to know. How? After gathering a list of the desired skills, the GK trainers sent a group IM to the Global Kids’ group with the list and a request for help. Within ten minutes all of the after school teens were paired with one or two teens in-world and were learning their desired skills. When an in-world helper was not up to speed, a new request was sent to the group and a new volunteer was recruited. This would have been a nightmare to coordinate in advance; it relied on the ability to reach out in the moment to those currently online, relying on the fact that help is usually available. So rather than teach the SL skills, the GK trainers set-up the relationships, wandered the room making sure the students were getting the support they required, and processed it together afterwards as a group.

#### **7. SCALE PROJECTS TO FIT RESOURCES**

Not all programs meet for the same period of time. Not all programs have teens with strong digital literacy skills, nor teens who can spend time in Second Life outside the program. As Second Life creates opportunities to literally build your dreams, it is easy to overreach. Just because it CAN be built in Second Life does not mean you and your program can be the ones to build it.



In our first year bringing our after school gaming program into Second Life, we made one project-scaling mistake after another. First we presumed we could teach the participants sophisticated skills like coding, even though they only met with us once a week, on

substandard computers, and had little access to Second Life outside our program. We then turned for help to an after school program we were teaching remotely in Washington, D.C., at a technology high school. The computers were excellent and the teens had strong digital literacy. However, they too had little access outside the program and, though meeting twice a week, the program ran half as long as it needed to be. Luckily, we found a third group of teens, self-organized in Second Life with endless time in-world and high-end SL skills, with which to collaborate and complete the project. Had we designed a more modest final project for our after school gaming program we would not have run over schedule nor been desperate to add one group of teen resources after another.

### 8. SITUATE SECOND LIFE WITHIN A LARGER INTERNET ECOLOGY

No virtual world is an island (even if you can rent one in Second Life). Leverage the greater Web 2.0 world – in which participants create and share content – to take full advantage of the ability to bring content in to, and take it out of, SL. The whole is great than its parts. This also allows the use of Second Life as a tool for producing youth media and distributing it to a broader audience.

Global Kids PSAs on Digital Media, created in Second



In its first few weeks, over a thousand people on YouTube.com watched the machinima made in our after school program. Teen reporters write articles about our programs on our blog,

HolyMeatballs.org, and post photos uploaded to our account on Flickr.com. They debate issues on public forums like MacArthur’s Spotlight on Digital Media and Learning. They use images.google.com and Wikipedia.com to research photos and information for workshops. Second Life may play a central role in these programs, but incorporating these other tools enhances what a virtual world can offer.

### 9. LEVERAGE IN-WORLD RESOURCES

Don’t rebuild the wheel. Leverage existing in-world resources, both people and tools, to strengthen your programs. Use the SL listservs to find people and tools that people recommend. Shop in Second Life and on the web-based stores to find the tools you need. Use your social networks to find the people who can help. And if you can not find the tool you need, build it yourself!



For displaying photos and text, we often use AngryBeth’s whiteboard. It is a board that you can pre-load with images (composed of pictures or text) which can be clicked-through to display. When we needed to curate games made by teens on our new serious gaming island, we found a teen volunteer to manage the project. Volunteers are easy to come by in SL; there are always people looking for something to do, especially things that will make them feel like they are making a difference. The teen managing our island then co-taught two sessions of our after school gaming programs, using Skype and Second Life to give the teens in Brooklyn, New York a tour of game genres in TSL, all from the comfort of his British living room.

### 10. WHEN TECHNOLOGY FAILS, KNOW WHEN TO MOVE ON

Technology has this funny thing about not working when you least expect it. Don't throw in the towel at first blush, but also know when to move on. Be flexible with the program and have a back-up handy just in case. When possible, test everything in advance. Is Second Life down? Is a new version required? Did that item that worked for adults also work with teens?



We were so excited to give the teens in our after school machinima program a sophisticated tool for filming. These virtual cameras allow the user to establish a path and then sit on a chair that will trace it as he or she films. However, no one had brought this camera over from the main grid to the teen grid before. Certain features only worked for adults, and not teens. As we had not tested it on teens in advance, we learned the hard way, wasting precious program time trying to figure out why it did not function properly. As we tried to debug it over the next few weeks, we continually entered the program convinced it would now work only to learn, to our disappointment, that something new was in the way. Resolving that the program was a bad place to debug the camera, we eventually decided to move on, perhaps a few sessions too late. (A few months later, after it was all fixed, we re-introduced it to the program with great success).

### 11. TIME IS RELATIVE

The sense of time in a classroom is different within a place like SL. Things can both take longer yet feel shorter. The urgency to complete a task becomes secondary to the experience of the task itself. Give more time than you may imagine ever needing and be ready to rip student off the screen like flies on fly paper.



*In our after school programs which do not use computers, we have three guidelines. One Mic means one person speaks at a time. Safe Space means we do not have to agree with one another but can disagree respectfully. And Participation means to get involved. But as soon as we introduced computers into our programs we were forced to add a fourth guideline: People Before Computers (or PBC for short). PBC means that when it is time to focus one's attention away from the computer, people come first. A gentle reminder of PBC is usually needed when transitioning from Second Life back to the real world, both from the GK trainers and teens as well.*

### 12. DISTANCE LEARNING TOOL

Do not underestimate the distance learning potential of Second Life, especially when used in conjunction with voice and web-based tools. Your avatar projected on the screen, in a classroom or in a conference, can be more effective at times than projecting a live video feed. Rather than feeling insubstantial, it can offer a strong presence.



Global Kids used Second Life, Skype and the classroom management system, TakingITglobal's TIGed, to run an after school high school program in another state, training the teens to use Second Life. A similar program combined a conference call system to a speaker with Second Life to work with a group of teens to curate exhibits about the Holocaust in Second Life. We regularly run panels at conferences bringing teens from around the world to speak on a variety of topics, using Second Life and Skype. We have used it as well when we did not feel up to traveling; in fact, at the 2007 NTEN conference, the director of the OLP program received the highest audience ratings of almost 250 presenters, and he was never even there in person!

The first Best Practices document created by Global Kids, Inc. <olp.GlobalKids.org> was originally produced in the summer of 2006 after six months working in the teen grid of the virtual world of Second Life (TSL). It was created by Barry Joseph, Rafi Santo, Lori Feldman and Zach Nataf. It only addressed education for residents of Second Life, teens 13-17 years old who "hung-out" there. A year later, after eighteen months of work in Second Life, the original document was significantly revised and new material was added. The new material addressed lessons learned from our after school programs as well as various options for bringing content into a virtual world. This new document, replacing the old, was created by Barry Joseph with Rafi Santo and Tabitha Tsai in the summer of 2007. To learn more about the work that informs this report, please visit our blog at HolyMeatballs.org.



**About Global Kids, Inc.**  
**(<http://www.globalkids.org>)**

Launched in 1989 and independent since 1993, Global Kids' mission is to educate and inspire urban youth to become successful students and global and community leaders by engaging them in socially dynamic, content-rich learning experiences. Through its leadership development and academic enrichment programs, Global Kids educates youth about critical international and domestic issues and promotes their engagement in civic life and the democratic process. Through professional development initiatives, Global Kids provides educators with strategies for integrating experiential learning methods and international issues into urban classrooms. Over 85% of the high school seniors who participate in GK's leadership program graduate and attend college.

**About the Global Kids Online Leadership Program (OLP)**

Global Kids, Inc. is a nationally recognized leader in using digital media to promote global awareness and youth civic engagement. Global Kids' Online Leadership Program (OLP) integrates a youth development approach and international and public policy issues into youth media programs that build digital literacy, foster substantive online dialogues, develop resources for educators, and promote civic participation. Currently, the OLP is accomplishing its goals through initiatives within four broader areas: the development of socially conscious online games; youth-led online dialogues; Virtual Worlds; and the Digital Media Initiative.

# Experiential Education in Second Life

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## ABSTRACT

The last year has seen an explosive growth in the use of Second Life by educators and institutions. Many of these innovative projects leverage the immersive qualities of Second Life to offer experiential learning opportunities.

In this paper, we continue to develop the model of experiential learning in Second Life explored last year (Mason and Moutahir, 2006) and present three experiential learning projects conducted in Second Life.

We believe that by utilizing the affordances of the Second Life platform to create experiences that are infeasible or impossible in the real world, educators can create superior learning experiences to those which do not offer virtual components. We conclude that experiential education should be among the ‘best practices’ for Second Life educators.

## INTRODUCTION

Experiential education is a learner-centered educational philosophy, sharing many similarities with constructivist and active learning paradigms. Learners are faced with challenges and problems, generally drawn from the real world, and direct their own educational experiences.

Experiential learning has emerged as a significant paradigm in higher education, stressing elements of collaboration, relevance, critical thinking, and reflection. This collaborative model has a strong appeal to today’s participatory learners (Lombardi, 2007).

Previous studies have demonstrated that team-based experiential learning projects benefit from the use of educational technology (Pauleen, Marshall, Egort 2004), and that online tools can increase engagement in experiential learning projects (Dede, 1996).

This paper presents a model for experiential learning in Second Life, recommends methods to craft optimal learning experiences, and discusses three projects in various stages of completion.

## EXPERIENTIAL LEARNING IN SECOND LIFE

### Learning Opportunities

Experiential learning programs offer students the opportunity to practice relevant skills that “match as nearly as possible the real-world tasks of professionals in the field” (Lombardi, 2007).

However, these learning opportunities are limited by available resources. For example, an aspiring fashion designer cannot necessarily open and operate a boutique store in a mall. This is the paradox of experiential education.

Second Life is a powerful environment for experiential learning projects. It is persistent, supports multiple users, has an economy, offers a low barrier-to-entry for content creation, is programmable, and contains an incredible variety of pre-existing content.

By using Second Life as a platform for experiential learning, we create a radical expansion of the problems that students are able to address (Figure 1). This increase is in two areas: problems that are infeasible due to a lack of resources, and problems that are impossible because of the limits of the physical world.

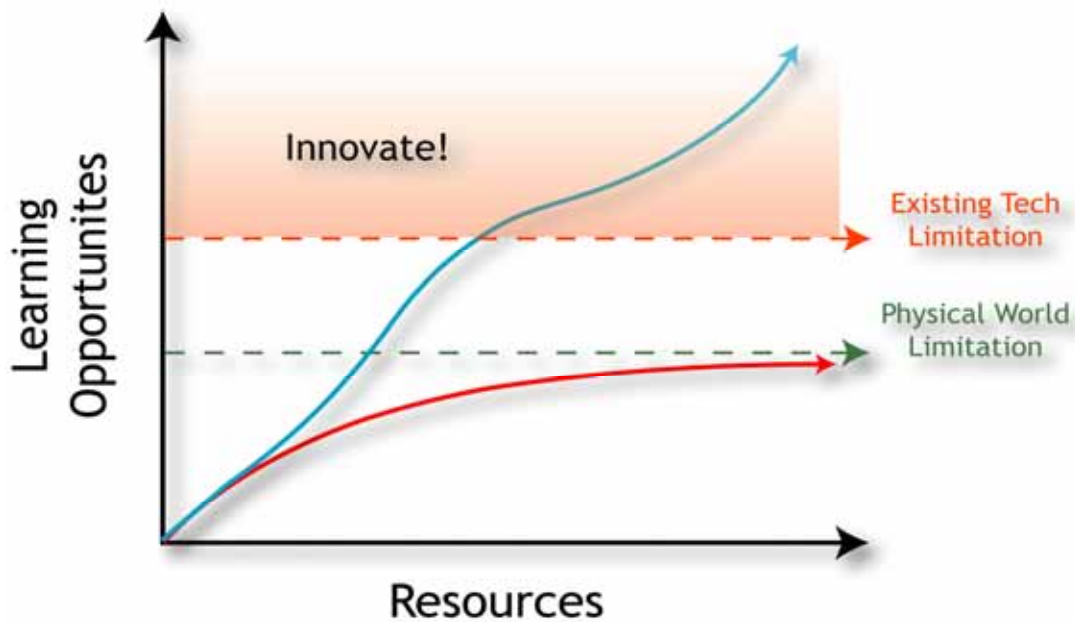
For example, in Second Life, the hypothetical fashion design student could open a store for a nearly trivial cost, learning about marketing, resource management, and design in the process.

We hypothesize that the expanded learning opportunity problem space will lead to greater learning outcomes than were previously possible.

### Model

Recent research (Reeves, 2002) has distilled ten distinct qualities that are possessed by successful authentic learning programs. Authentic activities:

1. Have real-world relevance



**Figure 1. Learning Opportunities in Second Life**

2. Are ill-defined, requiring students to define the required tasks
3. Comprise complex tasks to be investigated over a sustained period of time
4. Provide the opportunity for students to examine the task from different perspectives
5. Provide the opportunity to collaborate
6. Provide the opportunity to reflect
7. Can be integrated across subject areas
8. Are seamlessly integrated with assessment
9. Create polished, valuable products
10. Allow competing solutions and a diversity of outcomes

In essence, an effective authentic learning project provides students with challenging, collaborative, multidisciplinary problems, along with support to meet these challenges. These guidelines are a powerful set of criteria against which to judge authentic learning projects. They can be expanded to take advantage of the affordances of Second Life.

In Second Life, experiential activities should additionally:

#### **1. Have Second Life relevance**

An activity can be said to have Second Life relevance if it leverages the unique qualities of the immersive environment. If it is easier to use another application, do so.

#### **2. Involve students in experience design**

The design of an immersive experience that effectively communicates a message requires students to research and reflect. If they can construct an item or repurpose existing content into a new experience that teaches others, they will learn.

#### **3. Require collaboration**

Second Life is a social space, allowing both synchronous and asynchronous collaboration.

#### **4. Leverage the Second Life community**

Second Life communities can develop organically or intentionally, and add both unpredictability and a truly dynamic quality to a project.

#### **5. Provide the opportunity to reflect in both new and traditional media**

Reflections can demonstrate very different aspects of learning depending on the media. Give students opportunities to use tools within and outside of the Second Life environment to present information.

These reflections are both a necessary exercise in introspection, and a tool for assessment.

## CASE STUDIES

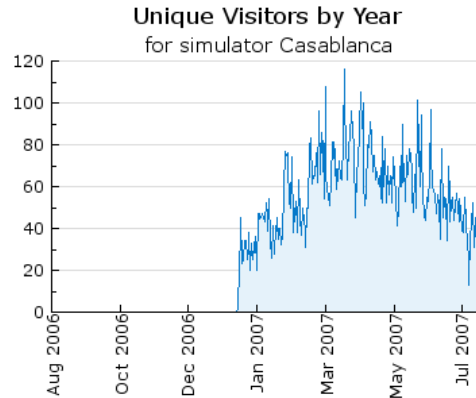
### Global Outreach Morocco



**Figure 2. Virtual Morocco (JWU, 2006)**

The Global Outreach Morocco team at Johnson & Wales University has partnered with the Ministry of Tourism of Morocco to create a Virtual Morocco. Virtual Morocco contains monuments and experiences from Casablanca, Rabat, and Marrakesh, and includes space for projecting real-world events into the virtual environment to enable international collaboration. The goals of the project are to provide an immersive experience that educates visitors about Moroccan culture while enticing them to think about Morocco as a travel destination.

The team created an initial prototype of the Hassan II Mosque in Second Life. The group traveled to Morocco and presented the project plan and prototype. The reaction was positive, so the team completed the implementation when they returned to the United States. Virtual Morocco opened to the public on December 23rd, 2006. Since that time, a thriving community of Virtual Moroccans has taken shape in the Casablanca Sim. On average, there are 54 unique visitors per day. The community presence reacts to the work of the group, rising with new development and dropping when the content remains static (for example, over the summer).



**Figure 3. Unique visitors to Casablanca island since December 23<sup>rd</sup>, 2006 (from SLMetrics.com)**

This project presented students with the significant challenge of using a novel technology to educate visitors and promote tourism in Morocco. Students had to create a plan, develop a technical prototype on an unfamiliar platform, and communicate with partners on another continent and across language barriers.

The project has been running for nearly twenty months, and will be recruiting new participants this fall and winter to continue the collaboration.

### Virtual BLAST

BLAST (Balloon-borne Large-Aperture Submillimeter Telescope) is a scientific ballooning project dedicated to understanding the origins of the universe. Last December, BLAST flew from a Long Duration Balloon over Antarctica. By providing the first sensitive large-area submillimeter surveys at these wavelengths, BLAST will address some of the most important cosmological and galactic questions regarding the formation and evolution of stars, galaxies and clusters.

Virtual BLAST brought a detailed recreation of the gondola and telescope to Second Life! Virtual BLAST flew over the SL main grid, visiting several educational and scientific builds. The BLAST crew handed out scientific ballooning goodies and spread the word about balloon-borne scientific achievements. The BLAST team also co-hosted a public presentation by one of the BLAST scientists.



**Figure 4. Virtual BLAST (JWU, 2007) on display at the International Spaceflight Museum**

Virtual BLAST created an experience design challenge. Students had to work with practicing scientists to devise a scheme to translate the complexity of scientific ballooning into a Second Life event. They designed, built, and operated the balloon during a two-day series of events. The crew enlisted the help of educators and scientists in Second Life to publicize and share in the event.

### **Rhode Island Entrepreneurship Education**

Traditional business planning courses teach students to write business plans, but lack experiential components. Students write a plan and receive a grade, but do not have an opportunity to experiment with a business concept. This year, Johnson & Wales University entrepreneurship students will have the opportunity to write business plans and prototype business concepts in Second Life, where they will continually evaluate and revise projects throughout the course.

At the beginning of the term, students will complete assigned readings from a textbook and homework to acquaint them with the themes of the material. Small teams will receive grants of land (in their choice of neighbourhood) and Linden dollars, and an “entrepreneurship starter kit” that contains product prototypes, clothes, buildings, and landmarks and web links for further study.

After the experimental component, students will be assessed with both authentic and traditional assessment tools. The reflection assessment will provide a measure of student understanding, while the standardized exam will give a measure to compare student achievement to achievement in a traditional business-planning course.



**Figure 5. Federal Hill neighborhood in Virtual Rhode Island (JWU, 2007)**

### **PRELIMINARY RESULTS**

All projects have been assessed with a combination of qualitative and quantitative measurement tools. We look closely at both student engagement and subject matter expertise.

In surveys and interviews, *all students* subjectively reported being more engaged in the Global Outreach Morocco and Virtual BLAST projects than in other coursework. They also report spending an average of two additional hours per week working on and talking about these projects through the course term.

Data gathered during the projects show that students stay online longer and move around less when other students are online at the same time. Most work happened when at least two team members were present.

### **CONCLUSIONS AND FUTURE WORK**

Second Life and other virtual worlds offer novel opportunities for experiential learning projects. This paper articulates an evolving model for experiential learning in Second Life. We will continue to develop questions, such as:

Can we utilize the unique features of the Second Life environment to provide more powerful

assessment tools than are available in the real world?

Can experiential learning in Second Life be compatible with traditional outcomes assessment processes?

Do skills learned in Second Life necessarily transfer to the real world?

How can we use the affordances of Second Life to construct authentic learning experiences to maximize learning?

While these and other questions remain, we believe that experiential learning represents the best of education in Second Life.

### ACKNOWLEDGEMENTS

A large debt of gratitude is owed to my colleague and co-Global Outreach advisor Mehdi Moutahir. This work is the result of the efforts of many dedicated and talented students, especially Kyle Pouliot, Bjorn Minde, Chris Hempel, and Eric Ferreira. Thanks are also due to Dr. Troy McConaghy of the ISM Corporation.

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# Critical Engagement of Teachers in Second Life: Progress in the SaLamander Project

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## ABSTRACT

Multi-User Virtual Environments (MUVES) such as Second Life (SL) are experiencing a rapid growth in the number of applications with educational potential. Unfortunately, their adoption has been hampered by the lack of an efficient way for educators to locate, share, or evaluate the many educational builds available in this 3D learning environment. At the *1<sup>st</sup> International Second Life Best Practices in Education Conference* (May 2007), the Center for Advanced Technology in Education (CATE) in the College of Education at the University of Oregon announced its intention to develop a searchable database that would provide the Second Life education community with easy access to 3D learning objects and environments categorized by subject matter and type of learner engagement. Created in collaboration with MERLOT (Multimedia Educational Resource for Learning and Online Teaching) and the Oregon Virtual School District, and funded by a “proof of concept” grant from the NorthWest Academic Computing Council, we are engaged in a collection of activities aimed at realizing this ideal. Our paper is a progress report on this initiative, codename the *SaLamander Project*, as well as an outline of the opportunities, directions, and challenges facing educators interested in understanding and enhancing the viability of SL as a means of engaging teachers and learners.

## SL EDUCATION COMMUNITY

Second Life and other MUVES have attracted a growing and increasingly sophisticated “community of practice” (Wenger, 1998) focused on the topic of teaching and learning in 3D immersive worlds (e.g., Dede et al, 2005; Dickey, 2005). These educators have explored the use of MUVES to develop models, simulations, historical recreations, scientific collaborations, and role-playing scenarios tied to

academic content. In addition, teachers in higher education have found MUVES such as Second Life to be a convenient place to conduct online classes, conferences, presentations, and meetings with students. SL has also proved useful for educators as an environment for working with students on scripting, API interface, concept design, and other technical creative problem-solving activities.

These activities are in addition to the myriad social and interpersonal investigations around identity and the negotiation of meaning. Because almost everyone encounters some cognitive dissonance in the framing and adoption of new, complex environments such as Second Life, there remain certain challenges to the efficient and sophisticated use of SL as a medium for both formal and informal education. One of the foremost challenges revolves around the manner and degree to which people index, access, and use SL learning objects, materials, and environments.

## Learning in the First Person

A unique feature of learning in Second Life, as in other Multi-User Virtual Environments, is the perception of immersion in an alternate world. Successful MUVES like Second Life enable learners to interact within the simulated world as if actually there, suspending their attention to the real world and transferring that attention to the virtual world. This sense of immersion affects learners in remarkable ways, allowing them to engage with content in the first person (Bricken, 1991). Being able to learn subject matter in the first person, as opposed to the third person, has always been a desirable goal in the learning enterprise. Instead of learning that is mediated by symbolic language and the content selection of textbook authors, first person learning is often experiential, nonsymbolic, interactive, and multisensory. Although traditional education embraces first person

learning in such activities as apprenticeships, science lab experiments, plays, and field trips, these experiences are often costly, impractical, unsafe, and limited to a few content areas or a select group of students. In comparison, most of the content in traditional education has been conveyed through symbols and words, a supposedly cheaper and easier way to “deliver” information than first-hand, first person experiences.

The increasing accessibility and utility of 3D virtual worlds such as Second Life means that more of us can engage directly with the subject matter, learning in the first person. Of special interest is that we can have these direct experiences with things heretofore unavailable to us. For example, instead of studying plant cells by reading a biology textbook, students in SL can climb directly inside a large cell to examine and manipulate its chloroplasts and organelles. In a similar way, history can be relived, literature re-enacted, abstract concepts made concrete, and empathy developed through active visceral participation. This capacity to arrange educational experiences in 3D immersive worlds provides teachers with new opportunities for teaching and learning, including ones where the students themselves participate in deliberations over the virtual environment and its creation.

This new capacity to facilitate learning where students are put into the context of the thing being learned, as though they were “there”, provides a timely and much needed advance to our educational options. Students who are “digital natives” (Prensky, 2001) have limited patience with an educational system that has not changed substantially since the 19<sup>th</sup> century. They think and learn in environments that are fast-paced, multimedia, multimodal, interactive, and, of course, digital. These volatile, interconnected, and complex social milieus (Cohill, 2000) call for learning options that are critical, collaborative, creative, and futures oriented.

In immersive environments, students have the capacity for personalized, deep learning that may, collectively, better enable us to understand interactions between trends, concepts, and ideas that we could previously experience only indirectly. Systems may be seen, time speeded up, micro-worlds suddenly expanded large enough for physical exploration, macro-worlds

small enough to manipulate and take apart by hand, and social, technological, environmental, economic, and political trends made visible in real time. In an age when biotech, nanotech, and global networking are changing fundamental assumptions about our world, it is timely that augmented reality is a possibility. It is critical that the creative and collaborative power of Second Life not be used solely for commercial enterprise, artistic expression, intimate conversation, and hanging out at parties or other social events.

Immersive worlds such as Second Life allow teachers and learners to collectively and personally construct and develop new understandings within relevant, “occupiable” three-dimensional contexts. With vision, determination, and courage, immersive technologies may actually help us close Ogburn’s Cultural Lag – that problematic chasm between the rates of technological innovation and social adaptation to it.

### ***Balancing Community and Complexity***

To effectively garner the usefulness of a medium such as Second Life, one of the first issues that the SL educational “community of practice” must address is identifying the pattern by which educationally relevant information is generated, located, and used by teachers and learners. We need to know what is important to educators, how to describe it, and how to organize it. Thus, a useful tool for educators wanting to navigate the teaching and learning resources in SL is a representational “map” of the terrain available and under construction. Such a guide must be transparent enough to be useful to the average person, but also able to handle the complexity and richness of the environment that it represents. To remain of use, this guide also needs to keep up with the landscape as it grows, transforms, and transcends itself.

As many users have pointed out, Second Life is already large, complex, difficult to search and filter through, and undergoing continuous growth and change. It is not an easy task to conceptualize and construct a “map” that serves the purpose of indexing and locating useful 3D learning objects and environments in ways that make sense to educators. To create such a guide for Second Life, we must first understand the ways in which people are currently engaged in

teaching and learning and what additional media they are using to support those activities.

## SL EDUCATION RESOURCES

Second Life contains an increasingly rich array of educational resources from which educators may learn, practice, and develop their identities. Some strategies we have found to be productive in identifying these educational resources include: (a) sifting through “inworld” Learning Material Repositories such as that found at ICT Library on InfoIsland, (b) seeing how 3D training sites such as Orientation Island design and develop their facilities, (c) seeking out SL teachers such as Sarah (Intellagirl) Robbins, Jeremy (Kabumpo) Kemp, or Ross (Milosun) Perkins for technical advice, (d) experimenting with tools such as whiteboards, projectors, vPortfolios, and quiz makers, and (e) collaborating with organizations such as the International Society for Technology in Education (ISTE) or the New Media Consortium (NMC) that give educators the experiences they need to develop who they are in the Second Life EDucation (SLED) community. Sloodle, BlogHUD, Sloog, and soon, The *SaLamander Project* act as bridges between Second Life and the WWW: “mashups” that take advantage of the 3D Virtual World and the text-structured 2D web. Additionally, external Internet support resources such as the Second Life Educator (SLED) Listserv, the SimTeach Wiki, and even such sites as OnRez (SL Boutique) are resources that SL educators can frequent to learn more about teaching and learning in 3D immersive environments (Lave & Wenger, 1991).

From the above it is obvious that any comprehensive “map” or guide for SL educators needs to identify and locate disparate types of information including important places, tools, events, objects, organizations, communities, communication vehicles, and learning opportunities. Largely unorganized and growing in an “organic” fashion, this loosely bound collection of tools, events, places, and people can be daunting to the “newbie” educator wishing to take advantage of these new media without losing balance with the many other personally important commitments and values in his or her life. Many new users, faced with a high cognitive load, simply quit out of frustration. This is an obstacle not only to individual educators, but also to the nascent SL

Educators’ Community of Practice, a group that would greatly benefit from an increased diversity of instructional skills, content area expertise, and teaching perspectives.



## Enter the Salamander

In May 2007, The NorthWest Area Computing Consortium awarded the University of Oregon’s Center for Advanced Technology in Education (CATE) \$10,000 to create a searchable typology of Second Life learning materials. To enhance participation, the *SaLamander Project* is using both Second Life and Web 2.0 technologies to create opportunities for educators to assist in identifying, describing, and organizing Second Life learning objects, materials, and environments, while simultaneously developing a more sophisticated and useful language to describe teaching and learning opportunities in Second Life. The Multimedia Educational Resource for Learning and Online Teaching (MERLOT) <http://merlot.org> and the Oregon Virtual School District <http://orvds.org/> have joined the UO’s Center for Advanced Technology in Education (CATE) to implement the *SaLamander Project*.

## SALAMANDER COMMUNITY

The primary goal of the *SaLamander Project* is to survey, collect, and describe 3D objects, materials, resources, and environments in Second Life created specifically for use in teaching and learning or with the potential to be useful in such activities. For purposes of having a shorthand way of referencing these disparate types of resources, we have taken to calling them all “SL Learning Materials”. Searching for and organizing SL Learning Materials is without doubt a challenging task. We have decided to approach this task from multiple entry points, using both Web 2.0 technologies as well as “in world” SL technologies.

First, we constructed the *SaLamander Project* Wiki site <http://www.eduisland.net/salamanderwiki>. This wiki represents a peer-review process for describing, organizing, and voting on the relevance of Learning Materials in Second Life. A template for describing 3D Learning Materials that any user may use to add content to the SaLamander Wiki is consistent with the descriptor for other learning materials in the MERLOT database. Second Life URLs (Slurls)

are embedded within the SaLamander Wiki alongside each description of SLED-reviewed learning materials to enable users access to them from the WWW. A citation system is anticipated to evolve for nominations, such that builders, owners, and scripters may be credited – though this has been found to be problematic for a number of users and developers.

Finally, proximate, embedded machinima video of educational builds will act as an alternative means for users to review learning materials, as well as act in an archival capacity. This will compensate for the inevitable likelihood that locations for learning materials move, change, or are otherwise repurposed.

We also decided that an easy-to-use set of in-world tools for describing such learning materials would be of most practical value. While some will have no issue opening a website alongside Second Life to enter in descriptions of 3D learning materials, others may find this method clunky, annoying, or even impossible. This process will allow the community members, themselves, to determine the dimensions of educational uses for SL in a peer-review process that they find most germane from within the context of SL, itself. The degree of our success will depend upon at least two factors: (1) our development of easy-to-use tools in a community structure that allows users at various levels to get meaningful value from it and (2) the vested participation from members of the SL educators' community.

People will thus, be able to choose to enter their descriptions via the web or from within SL, itself, with the results ending up in the same wiki database. Other means to enter SL learning materials descriptions, such as through Sloodle or using notecards, will be developed later, at the suggestion of SaLamander community members.

Educators will benefit from our decision to include Second Life 3D learning objects in the MERLOT database of 2D learning objects. Teachers and instructional designers looking for materials on a specific topic or to accomplish a specific objective can easily identify, examine, and compare peer reviewed learning experiences for both 2D and 3D objects and resources in a single database. This may provide SL users with a new perspective from which to view their learning materials, and it may assist in making

SL materials accessible to a whole new set of academicians.

### **Progress**

We have partnered with two distinct Second Life talents for the consultation and creation of the SaLamander Heads Up Display (HUD 1.0): Eloise Pasteur (<http://eloisepasteur.net>) and the fine people at SLoog (<http://sloog.org>). Together with the MERLOT web management team, we are creating the SaLamander HUD to enable users to take a survey about learning objects from within world, include keywords (i.e. “tags”) and other key information, and have that manually transferred to the wiki where the Second Life Education (SLED) Community can further describe, compare, classify, organize, dialogue about, and vote on each nomination. The best Learning Materials that pass through this “peer review” system will then be harvested from the wiki and placed into the MERLOT database for everyone to find. This is consistent with all of the learning objects found on the MERLOT site: they are peer-reviewed by an invested Community of Practice.

Second Life URLs (Slurls) are embedded within the SaLamander Wiki and the MERLOT database sites alongside each description of SLED-reviewed Learning Materials to enable users access to them from the WWW. A citation system is anticipated to evolve for nominations, such that builders, owners, and scripters may be credited – though this has been found to be problematic for a number of users and developers.

Finally, proximate, embedded machinima video of educational builds will act as an alternative means for users to review learning materials, as well as act in archival capacity. This will compensate for the inevitable likelihood that locations for learning materials move, change, or are otherwise repurposed.

So the difference between searching through the SaLamander Wiki and the MERLOT databases for Second Life learning materials will be that of quantity and quality. The SaLamander Wiki will hopefully start to fill up with many entries – some probably of lesser quality than others, and also launch dedicated SLED Community members to begin commenting on the relative quality and/or applications of the nominated learning materials. A healthy wiki community – like that of Wikipedia –requires many different

voices, opinions, and healthy intellectual dissent. We hope to implement a voting tool for each entry such that the SaLamander Wiki Community may subjectively rate each learning material in addition to adding their comments and editing the categories and description for it.

## **Results**

In working to achieve its goals, the *SaLamander Project* has performed an initial scan of some learning materials available in Second Life and has, through analysis and reflection, determined a large number of potentially relevant dimensions that SL educators may find important when seeking to use these materials. An immediate revelation to participants involved in this activity is the potentially infinite number of relevant dimensions that may be used as the basis for analyzing and categorizing 3D learning materials. One organizing principle, however, that we feel educators will find useful in classifying SL Learning Materials is “Learner Engagement”.

### ***Typology Based on Learner Engagement***

The kind of learning that students engage in will depend, in part, upon the kind of interaction with the learning materials provided or developed. Five broad categories of learner engagement have emerged so far, and we propose this list as an initial typology for classifying learning materials in Second Life, knowing that the list is not exhaustive and that other organizing principles may turn out to be more fruitful. The types of learner engagement on the SL Learner Engagement Typology at this early stage are: (1) demonstration; (2) experiential; (3) diagnostic; (4) role play; and (5) constructive. Each is described below, with reference to examples in Second Life.

#### ***Learner Engagement Type I: Demonstration***

In a demonstration, participants engage with learning objects through observation and demonstration. There is limited interaction with or manipulation of the built environment. This is the type of student engagement most closely aligned with real-life traditional educational experiences. Within the virtual environment *demonstration* engagements can take place by way of videos, presentations, displays, or models - each with their own unique qualities and content supplementing the 3D learning environment. For example, virtual campuses may host speakers and presenters on certain

topics relevant to both real-life and Second Life. Another example of a demonstration learning object can be found on the island of Spaceport Alpha (Amarula, 2005) where the International Spaceflight Museum and the Second Life Planetarium have collaborated to provide users with an island dedicated to learning about space, space flight and astronomy. Here participants can learn information by visiting a planetarium while listening to an audio presentation on the different planets, stars and astrological formations. Users can also visit exhibits that teach about spacecraft, rockets and space-travel, and they can observe rocket launches or listen to presentations. Museums, showcases, displays, expositions, presentations, and portfolios are often, in terms of learner engagement, classified as Demonstrations.

#### ***Learner Engagement Type II: Experiential***

This type of student engagement differs from a demonstration in the degree to which the student is immersed in the Learning Materials. The designer prepares the user to be enveloped or immersed using multiple modes of input (sound, color, texture, etc.). The University of California Davis’ Virtual Hallucinations site, for example, has participants enter a building programmed to provide the user with an authentic experience of auditory and visual hallucinations commonly associated with schizophrenia. In this building, participants walk through a virtual office hallway where they both see and hear realistic hallucinations based on testimonies from actual patients who suffer from schizophrenia. The National Oceanic and Atmospheric Administration’s build (Weber, 2006) generally engages students by way of experiential learning too.

#### ***Learner Engagement Type III: Diagnostic***

A third type of student engagement identified in Second Life learning objects is *diagnostic*. In this category, participants interact with a simulated environment designed to promote inquiry, analysis, and identification. An example of such an environment is Jeremy Kemp’s Heart Murmur Sim (2006) where users interact with programmed patients in virtual exam rooms by clicking and learning about symptoms present in order to correctly diagnose the patient’s heart ailment. In such a simulation, participants both interact and engage with the material to learning specific information through discovery. Use of surveys or quizzes in-world that relate to

discrete knowledge gained within a particular build would be another sort of Second Life diagnostic learning material.

#### *Learner Engagement Type IV: Role-Play*

A fourth type of student engagement is that of *role-play*. When engaged in role-playing, participants take on personas enabling them to learn and engage through interaction with a story or narrative aligned with a specific character. Engagement and learning through role-play is in some sense the primary function of virtual environments such as Second Life, however particular learning objectives can also be aligned with specific role-play builds. For example, islands such as New Babbage (a Victorian town populated by residents who identify themselves as “steam punk”) are places built to imitate specific eras and locations, and therefore include structures and people role-playing appropriate personas. Through this type of engagement, participants learn through investigation into the background, conditions, and circumstances surrounding their particular characters, as they strive to accurately portray and behave in a way that is authentic to their assumed roles. In addition, this type of engagement includes interaction with a resident community and the establishment of relationships thus furthering the learning process through cooperation and identity formation. For example, one SL resident has taken on the role of Sir Arthur Conan Doyle, the famous author of the Sherlock Holmes series. In his role-play he has assumed the identity of this character in dress, appearance, and speech. He has also undertaken efforts to reconstruct Doyle’s historical mansion in SL, raise funds for the preservation of Doyle’s real life home in England, as well as contributes to the SL community by writing for the local newspaper in the name and style of his virtual persona. All of this has required considerable research done on the life of Doyle and dedication to the authenticity of his character. While engagement and learning through role-play is in some sense a primary function of virtual environments such as Second Life, a finer, more specific degree of role play can be more intentionally designed and elicited within builds. Ritter-Guth, in the capstone of her well crafted Literature Alive! series of SL courses has students take on a role, dress up in “drag” and perform a re-enactment of Chaucer’s The Canterbury Tales (2007a).

#### *Learner Engagement Type V: Constructive*

Finally, the *constructive* type of student engagement offers users access to information through hands-on experimentation and discovery. This type is especially relevant to the Second Life platform in that all users enter the virtual world capable of creation or “building” as it is referred to in-world. Although building can take place almost anywhere within Second Life, specific learning objectives can be tied to building assignments. For example, some teachers have used the building capabilities of SL to enhance the learning experience for their students by connecting traditional assignments such as literature requirements to engagement in construction and experimentation. A number of teachers in Second Life are available to assist students (some with step-by-step instructions) on how to build a chair, a house, a scene from a play or book, or an interactive maze. These learning experiences provide students with unique learning and engagement opportunities, while utilizing what some see as the greatest, most central function of virtual environments such as Second Life: the “create” toolset.

#### **Other useful dimensions of Teaching and Learning in Second Life**

##### *Degree of Pedagogical Scaffolding*

Unlike a videogame, Second Life and other MUVES do not have a back story. There is no de facto guide to propel one forward in this open environment. Thus, educators must, as all designers of content in SL need to with their own respective purposes, build out each environment. Depending upon the purpose and the audience for the sim, the designer creates appropriate ways for people to engage to the best of their abilities. The signage, the content, and the process by which people may navigate and learn must be considered and put into the immersive context. Some learning materials may have been designed with a specific (even rigid) purpose or learning objective, but have vague, or difficult to navigate environmental cues. Other sims may have very specific uses and their design puts a fine constraint on what can be done with that build. It may be useful for educators to see the subjective amount – or rating – of how much of this environmental scaffolding or directions are designed into appropriate Learning Materials reviewed for MERLOT. An excellent example of a well-scaffolded 3D Learning Environment of the

“diagnostic” type is Beth Ritter-Guth and Eloise Pasteur’s new Archetypal Caverns (2007b).

#### *Technology Proficiency Requirements*

To navigate Second Life requires at least a minimum level of technology proficiency, while building and scripting complex learning ecologies requires a much higher degree of technology proficiency. For each SL learning material description in the SaLamander Project, a distinction between the technology proficiencies needed for teachers versus that necessary for students will be made. This may be a useful factor for SL educators when determining the suitability of learning materials for their students.

#### *Assessment methods*

Numerous quiz and survey tools are being integrated into learning materials and experiences in Second Life – while many others have performance-based requirements. The way in which assessment is built into the learning environment may be of special interest to SL educators – thus, assessment methods are one dimension that is expected to be listed in the descriptors of learning materials for the SaLamander Project.

#### *Necessity of prior content knowledge*

Certain degrees to which learners must have prior knowledge of real-world and/or Second Life contexts may be necessary for success or navigation through SL learning sims. As appropriate, this dimension may be included in the SaLamander descriptors for educators to discern through the wiki or the MERLOT interface.

#### *External Supplements*

For many Second Life learning materials there are World Wide Web, email, or other external supports or supplements that developers use to scaffold or enhance the learning materials. Whether as a means for providing structured text, administering assessments, organizing artifacts, or acting as a true “mashup” of 3D and 2D technologies, the descriptors of Second Life learning materials for the SaLamander Project expects to index these, as appropriate.

#### **Open invitation to join the SaLamander Community...**

Log on the World Wide Web and check out the project wiki at to see if we have included your

favourite SL learning materials in the appropriate content areas and Second Life Learner Engagement Typology. Don’t see it there? Add it! See just a “stub”? Complete it! Disagree with what you see or feel it’s incomplete? Edit the pages in question or click on the “discussion” tab and start a conversation appropriate to the entry. Watch for the in-world Learning Materials Descriptor HUD coming out the Fall 2007 that will make it easier for you to add entries to the wiki! More in-world tools and activities will be coming soon as we further develop a community for educators to organize and examine Learning Materials – watch for it! Finally, we are looking for university, non-profit, and business organizations to become full partners in the development of the Second Life 3D Learning Materials Taxonomy and share in the discovery and development of a new pattern language and emergent community of practice. The possibilities for activities, events, and collaborations of all kinds are limitless. We hope you will consider contributing to the development of 3D teaching and learning by participating in this project in the near future. We appreciate all of your efforts to improve 3D learners’ identities to form around participation, for meaning to develop through membership in a group with a purpose, and patterns of language to evolve through increasingly sophisticated exchange of knowledgeable skill (Lave & Wenger, 1991).

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# A Futurist's View of Second Life Education: A Developing Taxonomy of Digital Spaces

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## ABSTRACT

As virtual environments such as Massive Multi-Player Online Role Playing Games (MMORPGs) and Multi-User Virtual Environments (MUVes) gain in popularity and increase in breadth of application, from entertainment to business development to education, it becomes ever more important to develop a system with which to analyze how these spaces function, how community and communication are performed, and how we can best take advantage of what the spaces have to offer for education. Rather than analyzing these virtual spaces as cultural texts as others have done (Squire, Gee, Jenkins, Rheingold etc.), I propose that we look at the “mechanics” and “tools” in the environments that facilitate communication and community and their affordances in education.

## COMMUNICATION IN VIRTUAL SPACES

Multi-user virtual environments, whether game or non-game, all have one thing in common: communication. In environments such as MMORPGs, CVEs, MUVes the same holds true. You cannot have multiple users in an environment and not have some kind of resulting communication between them. The communication may be non-verbal through gestures, appearance, or battle. Verbal communication may take the form of private instant messages, public text speech, or written cues left on signs and walls. No matter what form of communication takes, it can be guaranteed that users will take advantage of the paths made available by the software to create social norms and rules to govern the communication. This space between the communicative paths, between the rules of the system and the rules made by users, is made possible by the system's mechanics and the rules slowly developed through user culture is a space seldom explored.

Communication in virtual spaces takes both verbal and non-verbal forms. For example, in

most popular MMORPGs, there exist many channels of communication:

Nonverbal: avatar posturing, avatar appearance, movement, nonverbal sound effects

Verbal: text chat, private instant messages, group instant messages, player-to-player system emails, group announcements, voice chat via third party software such as TeamSpeak or Ventrillo

Depending on the game/space in question, these channels vary but nearly all multi-user virtual spaces have mechanics to support at least one method of verbal communication and one method of nonverbal. Rather than studying each new environment as it becomes available, it makes much more sense to create a system that allows us to categorize these environments by these communicative mechanics so we can group them and learn from those comparative analyses.

In the past ten years, as online multi-player games have become more advanced, academics have begun to take notice. Applying preexisting methodologies (such as ethnography (Turkle, 1997), rhetorical analysis (Squire, 2002) and participant observation, borrowed from sociology, psychology, and communications to study the spaces and the interactions in them has provided a solid starting point for serious game studies. However, as others have noted (Dutton and Consalvo, 2006), (Squire, 2002), (Manninen, 2003), these methods are limited to studying the communication itself and not the mechanics of the environments that give rise to the communication patterns that emerge. It's as if researchers have analyzed transcripts of phone calls, declared that phone conversation is unique because it lacks visual-gestural cues, and then left without considering the limitations of the telephone's technology. If we are to truly understand the new ways that people communicate in these virtual environments, we must learn to see the whole picture. Taking any one element in isolation will give us only a

fragmented and inaccurate view of the communication taking place.

Added to this difficulty of methodology is the ever-shifting landscape of the technology. Virtual spaces, game and game-like, don't follow a prescriptive pattern of development. As is required to succeed in the market, each new environment boasts new developments, new channels of communication (gestures, avatar customization, object creation, etc.) that complicate our view of what is occurring in the spaces. The current methods we have to categorize the communication and study it aren't capable of shifting with the landscape. They are limited applications that won't accommodate the rapid development in the virtual space. So how are we to study the forms of communication that occur in these spaces? By thinking less of the past and more about the future. By looking less at what has been done and more at what is being done. To accomplish this we need to think rhetorically. We need to think of the motives present in the gap between the laws (environment mechanics made possible by the software of the environment) and the rules (norms and uses established by the developing communicative culture in a space).

### **PREVIOUS RESEARCH**

Other researchers have begun to analyze the forms of communication present in virtual environments. In "Interaction Forms and Communicative Actions in Multiplayer Games" (2003), Tony Manninen uses Habermas' Communicative Action Theory (CAT) as a framework to understand communication in virtual environments. Kurt Squire uses Engestrom's Activity Theory in his article "Cultural Framing of Computer Video Games" (2002) to explain how player communications are influenced by the environment: "For an Activity theorist, the minimal meaningful context is the dialectical relations between human agents (subjects) and that which they act upon (objects) as they are mediated by tools, language, and socio-cultural context". In yet another attempt to develop a method for understanding communications in virtual game environments, Nathan Dutton and Mia Consalvo suggest four areas of focus in their article "Game Analysis: Developing a methodological toolkit for the qualitative study of games": Object Inventory, Interface Study, Interaction Map, and Gameplay Log. Dutton and Consalvo

offer their approaches as solutions to the problems present in previous game studies which they claim have "taken two approaches – either studies of the audience for games or critiques of the games themselves" (1). The approach offered by these authors treats the game as a text to be analyzed using one of the four methods suggested. These three examples of method are certainly not exhaustive of the efforts critics have made to understand the communication in virtual environments, but they are representative. In my survey of the literature I have yet to come across an example that takes the mechanics of the space into consideration at the level necessary to understand how the affordances of a specific system influence how it is used. My research endeavors to fill this gap by developing a "taxonomy" that will be used to describe and analyze the mechanics of communication in virtual spaces be they games, collaborative virtual environments, blogs, wikis, or the new spaces which are surely on the horizon.

### **THE MECHANICS ARE THE MESSAGE**

Through an analysis of many of the current virtual environments<sup>1</sup>, I have developed a list of ten characteristics that have the most dominant effect on the kinds of communication that are possible in a virtual space. These characteristics serve to define one environment from another. The effects of these characteristics make each environment what it is. For example, Wikipedia would not be what it is if not for the ability of all users to edit all entries. Second Life would not work if it were a single-user platform because its collaborative model relies on being used by more than one resident. In this process I made lists of the major characteristics of each environment I analyzed. In comparing those lists I found these ten to be the most prevalent and to have the most impact on how each space is defined and used.

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<sup>1</sup> Runescape, Second Life, World of Warcraft, Twitter, Dodgeball, Gchat, AIM, YahooIM, Wikipedia, XFire, There, Wii, MySpace, Facebook, LinkedIn, Skype, Gizmo, Wordpress, Joomla, Blackboard, IRC chat, MOO, MUD, Groove, Google Docs and Spreadsheets, Xbox 360, PS3 Home, OnXiam, City of Heroes, Ultima Online, Lord of the Rings Online, Eve, 300Boxes, Flickr, IScrybe, and many others

In this article I will apply these characteristics to Second Life to describe the communication mechanics in the space, how these mechanics influence education in the space, and finally how changes in these mechanics will influence the future of the space.

### **1. Number of Users:**

Single user: Only one user can access the environment at a time or in one iteration of the environment. In Tetris, two players can't move blocks on the same game board. A single user blog doesn't allow for two contributors to write the same entry at the same time.

Multi-user: A multi-user system may allow two users or two million. The range is wide. A group wiki might enable several writers to see the same document simultaneously. Second Life can host 100,000 users at the same time.

### **2. Dominant Content Form:**

Text Dominant Environment: These environments use text as the primary form of content. These spaces may use text to describe the environment, such as a MOO or MUD would, or use text as the primary form of communication, such as in a chat room or in a threaded forum. These environments might contain some images, such as user icons, but these environments have little meaning without text.

Image Dominant Environment: This characteristic describes graphic environments where image is the dominant form of content. Ranging from a typical console game to an immersive environment like There or Second Life, these environments use graphics to convey important meaning in the space and cannot exist without the graphics. Text may be present in these environments but it is always secondary to image.

### **3. Type of Network:**

LAN: The environment is locally hosted on an internal network or a stand-alone console. Non-networked console systems, text documents on a user's computer, or games run on a local computer (such as solitaire) will be described by this characteristic.

WAN: The environment is hosted at a distant location and allows users to log in to join the environment. Wikipedia and Google Docs are text-based examples. Online games and immersive environments such as World of

Warcraft and Habbo Hotel are image-based examples.

### **4. Persistence of Environment:**

Persistent: These environments exist when the user is not logged in. Changes in the environment remain from one use to the next such as in a wiki, Second Life.

Non-persistent: These environments are instance-based, meaning that they only exist when called upon by the user. Examples: Halo, word processing program.

### **5. Stigmergy:**

Stigmergic: Users can make changes to the environment that will remain from one use to another. Multi-user stigmergic environments allow users to leave messages and other communications for other users to find when they log in later. Examples: wikis, blogs, Second Life.

Non-stigmergic: Users are unable to make changes to the environment or the changes made are reverted by the environment. For example, when playing Mario Brothers, we might defeat enemies who then blip off the screen. However, if we restart the game, those same enemies will have repopulated the environment.

### **6. Object Ownership:**

Private ownership: Users can "own" objects (or data) and limit others' access to these objects. In games, this might imply that users have a private inventory of items that only he/she can access. In text-based environments such as blogs, private ownership implies that the entries in the blog may only be edited or deleted by the blog's owner who wrote them.

Public ownership/No Ownership: Users cannot "own" objects (or data); everything is shared. For example, at Wikipedia users cannot prevent an entry from being edited by others. All entries on Wikipedia are "communal property."<sup>2</sup> Other environments offer no ownership at all. For example, when playing solitaire we have no way of grabbing a card and holding it to use later.

### **7. User Identity:**

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<sup>2</sup> Though there are overseeing editors who may occasionally freeze editing abilities on an article. This kind of action is rare.

Static: User identity is created by the environment and cannot be changed. We have no choice of who we are as users or we have no identity at all. For example, when playing Pong we are simply “Player 1” or “Player 2.”

Custom: Users can customize their identity easily using the environment’s system. Environments like MOOs and There allow users to augment their identity, choose their name, and create an identity through clothing, objects, and persistent profiles. Social networking sites like MySpace and Wallop allow users to create accounts with meaningful names, build personal profiles with photographs, and select music to play when their page is accessed by others.

Conditional: User identity develops through the environment via goals, status, etc. When an environment only allows for conditional identity development, it often involves customizing the user with items that are earned or can only be used by users who achieved a certain status. For example, in Star Wars Galaxies, users may only wear the armor intended for their character class; changing certain attributes of your character’s appearance may cost so much money that less accomplished players may not be able to afford the services. In these environments, character identity is often closely related to status within the goals of the environment.

## **8. Environment access**

Public: Environment is open access to anyone wishing to enter. Even if joining the environment requires payment or the purchase of software, as in many online games, the environment is still open to anyone who wishes to join (by creating an account, purchasing software, or otherwise accessing the environment). Still other environments merely require providing an email address and filling out a profile (on sites such as MySpace and Wallop). No permission is necessary.

Limited: Environment is limited to only those granted access through a special procedure. Systems such as Blackboard and WebCT may only be accessed by users who have been given permission to access them. Private blogs, password protected websites, closed game servers, and members-only forums are also examples of limited access environments.

## **9. User's relationship with other users:**

Collaborative: Users collaborate with each other in a non-competitive manner. Though editors on Wikipedia may often disagree with edits made by others, there is no way for a common user, i.e. someone not employed as an administrator, to block others from contributing. Group blogs and collaborative documents are also considered to have collaborative user relationships. Environments such as Second Life, where competing in battle and other aggressive forms of interaction, must be agreed to by both parties and isn’t a required part of the environment, are also considered collaborative.

Antagonistic: Users compete against one another. In these environments, competition between users is a required element. Games in which players must compete against one another or lose through inactivity are included in this category. Environments such as sports games and fighting games do not allow players to opt out of competition.

Conditional: Users are collaborative or antagonistic depending on the situation. Games in which players may choose to fight enemies provided by the system or to fight each other (Player vs. Player PVP). For example, in Star Wars Galaxies and World of Warcraft, players may attack one another in specified areas of the game world.

## **10. User's relationship with the environment:**

Collaborative: Users collaborate with the environment. This characteristic applies to environments in which the space itself offers no danger to the user. Wikis, blogs, and other environments which are not “games” fit into this category as well as immersive spaces such as Second Life and There.

Antagonistic: Users compete against the environment. In these spaces the environment’s system provides enemies for the user to compete against. Most games have antagonistic environments unless they provide competition between users. Many games which offer a multi-player setting have antagonistic environments when played single-player. In these cases, when used as single-player, the environment acts as the opponent. Games such as the classic Mario Brothers do not allow the user to become friends with obstacles/monsters within the game levels. No matter how Mario acts, the monsters will still attack.

Conditional: Users are collaborative or antagonistic with the environment depending on the situation. Environments such as World of Warcraft and Star Wars Galaxies often provide non-player characters who might assist players if that player's "faction" points are high enough to have earned a Non-player character population's trust or support.

### **MAKING USE OF THE 10 QUALITIES**

Identifying these traits is important for three reasons: 1) Understanding the qualities of environment that make it what it is allows us to become more informed and critical users of the environments, 2) As instructors, we're looking for an environment that will best suit our needs instead of trying to suit our pedagogy to an environment, and 3) by comparing environments based on these traits we are able to see commonalities between the environments that might not have been clear before.

Let's start with this third point. Why is it important to be able to compare virtual environments to see their differences and similarities? The best way to answer this question is to actually put a few of the more popular environments on a chart and see how they compare. (See Figure 1).

Interesting comparisons result from this simple charting process. For example, we see that the major differences between Second Life and Wikipedia are slight. One is image-based; one is text-based. One allows users to "own" objects while the other operates as a collective. Blackboard, a common course management system, differs from Second Life in only three areas (dominant content form, object ownership, and access). These two environments may seem like night and day but, in fact, they are more similar than they are different. Instructors who find that Blackboard suits their pedagogy well may find that Second Life, a dramatically more advanced environment, may accomplish those pedagogical goals and more. In addition, charting environments like this can also help ease fears associated with new environments. For example, faculty who are comfortable with MOOs and MUDs need only become acclimated to the visual nature of Second Life. Beyond the graphics, Second Life and MOOs are extremely similar. Understanding these slight differences between environments reveals that not only are the new spaces not so scary, but that some pedagogical goals can be easily accomplished in

a newer environment in which students may be more engaged (as I've observed in my classes taking place in Second Life).

### **CONCLUSION**

Instructors well know that integrating any technology into the classroom must be done with a critical eye. Hawisher, Selfe, Crane, Schriener and many others have long warned us about the dangers of forcing our well-developed teaching skills into a technology that doesn't suit them. However, understanding our goals for a learning experience and exactly what game/virtual environments can offer will allow us to make more informed choices. For example, in my Freshman English course I knew that I wanted a certain level of collaboration and an emphasis on visual rhetoric. And also that to accomplish the research goals of the course we'd need to be in a public space where students would not be isolated from a community at large. A look at figure 1 makes Second Life an obvious choice. It is publicly accessed (offering a community to my students rather than just classmates); it is an image-based environment thus allowing us to analyze visual rhetoric and create our own examples, and its stigmergic qualities mean that we can construct a community that will remain where we build it for others to experience and participate in.

The environments listed in Figure 1 are by no means exhaustive. There seem to be new games and environments available every day. However, as instructors consider new environments, charting them according to these 10 qualities may inform our decisions regarding a technology's effectiveness in our classroom. Teaching is fundamentally about communicating information and experiences to students. Therefore, a deeper understanding of the communicative qualities of an environment are critical to pedagogy in these digital spaces. If this side-by-side comparison merely makes the new seem more familiar, I believe it has helped us make great strides.

Figure 1. Ten Characteristics of Virtual Environments

		Second Life	World of Warcraft	Wikipedia <sup>3</sup>	Blackboard <sup>4</sup>	Blog <sup>5</sup>	Diner Dash <sup>6</sup>	Halo <sup>7</sup>	MOO/MUD <sup>8</sup>	Zork <sup>9</sup>	Mario Bros. <sup>10</sup>
# of Users	Single					•	•	•		•	•
	Multi	•	•	•	•	•		•	•		
Dominant Form	Text			•	•	•			•	•	
	Image	•	•				•	•			•
Network	LAN							•	•	•	•
	WAN	•	•	•	•	•	•	•	•		
Persistence	Persistent	•	•	•	•	•			•		
	Non-persistent						•	•	•	•	•
Stigmergy	Stigmergic	•	•	•	•	•			•		
	Non-stigmergic		•				•	•	•	•	•
Object Ownership	Private	•	•		•	•			•	•	
	Public		•	•		•	•	•			•
Identity Formation	Static			•	•		•	•	•	•	•
	Custom	•				•			•		
	Conditional		•								
Access	Private				•	•		•	•		
	Public	•	•	•			•	•	•	•	•
Relationship with other users	Collaborative	•	•	•	•	•		•	•		•
	Antagonistic		•					•	•		
	Conditional	•	•					•	•		
Relationship with Environment	Collaborative	•	•	•	•	•			•		
	Antagonistic		•				•	•	•	•	•
	Conditional		•						•		

<sup>3</sup> Wikipedia: [www.wikipedia.com](http://www.wikipedia.com). As of January 2006, Wikipedia has over 300,000 registered contributors.

<sup>4</sup> Blackboard: [www.blackboard.com](http://www.blackboard.com). This learning management system (LMS) hosts course management, threaded discussions, synchronous chat, digital dropboxes, and more.

<sup>5</sup> Blogs: Current popular blog sites include MySpace ([www.myspace.com](http://www.myspace.com)), Blogger ([www.blogger.com](http://www.blogger.com)), and LiveJournal ([www.livejournal.com](http://www.livejournal.com)). Blogs can also be hosted on content management systems (CMS) such as Joomla ([www.joomla.com](http://www.joomla.com)), Moodle ([www.moodle.com](http://www.moodle.com)) and Drupal ([www.drupal.com](http://www.drupal.com)).

<sup>6</sup> Diner Dash: A Shockwave game developed by GameLab ([www.gamelab.com](http://www.gamelab.com)) and published by Playfirst ([www.playfirst.com](http://www.playfirst.com)). Diner Dash is a single-player game in which the player learns to waitress by seating, serving, and cleaning up after customers in a struggling diner. Multi-tasking and efficiency are rewarded.

<sup>7</sup> Halo: A single and multi-player first-person shooter (FPS) developed by Bungie Studios ([bungie.net](http://bungie.net)) and published by Microsoft. Multi-player (one on one or team vs. team) games are hosted on remote servers.

<sup>8</sup> MOO/MUD: Multi-User Dungeon or MUD Object Oriented. Both are text-based environments in which users explore or communicate using prompt lines. To see a comprehensive, genre-based list of MUDs still in action go to [www.mudconnect.com](http://www.mudconnect.com).

<sup>9</sup> Zork: An interactive, single-player, text-based fiction game developed at MIT in 1977. Zork can still be played today at <http://thenet.net/error/index.php>.

<sup>10</sup> Mario Brothers: A single- (and later multi-) player arcade game developed by Nintendo in 1983. Mario Brothers is a side-scroller (player moves from left to right across the screen) with a tightly controlled narrative.

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# Learning about Adaptive Expertise in a Multi-User Virtual Environment

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## ABSTRACT

Multi-User Virtual Environments such as Second Life should make it possible for students to experience events first-hand rather than simply learn about them secondarily. We designed an interactive task in Second Life that involves moving an avatar through a maze made of a series of rooms. Students were prompted to operate in an efficiency mode by being told to learn how to get through the maze as quickly as possible. Subsequently, the students are helped to realize that they did not deeply understand how the rooms work. The maze was specifically designed to provide participants the opportunity to relate their experiences to a set of classic studies in the learning literature. The purpose of this study was to verify that we could help people experience differences between “efficiency” and “innovation” modes of operating using a MUVE. In future studies we will investigate the hypothesis that telling people about different dimensions of adaptive expertise can be helpful, but letting them virtually experience these dimensions for themselves should be even more effective.

## ADAPTIVE EXPERTISE AND LIFE SLC’S PUZZLES PROJECT

Traditionally, students learn about new concepts by having them described by a text or lecturer. Sometimes these descriptions are accompanied by examples. For instance, if students are learning about adaptive expertise, they will typically be given examples of experiments and

experiences relevant to that construct (Hatano & Inagaki, 1986). Adaptive expertise, briefly, is the idea that expertise is dissociable into innovative and efficient dimensions, and that not all experts or learning experiences equally incorporate both. New Multi-User Virtual Environments (MUVEs) such as Second Life (SL) make it possible for students to experience events first-hand rather than simply learn about them secondarily. To investigate those possibilities, the NSF Learning in Informal and Formal Environments (LIFE) Science of Learning Center (SLC) started the Puzzles studies. These studies have two goals. One goal is to understand better the characteristics of adaptive expertise in a MUVE, particularly in comparison to real environments. This paper’s specific study addresses a more important goal of the Puzzles project, to help people learn about adaptive expertise by enabling them to experience differences between “efficiency” and “innovation” modes of operating in a MUVE. Telling people about different dimensions of adaptive expertise can be informative, but letting them gain experience with this construct, and especially by making explicit their own tendencies to rely on routines or efficiencies, should lead to deeper, more connected understanding.

An adaptive expert is highly competent in routine skills needed in his or her field and is innovative enough to address novel problems in that field. This is opposed to routine experts who are only highly competent in the routine skills. In order to place a learner onto a

trajectory towards adaptive expertise, one must balance efficiency and innovation in the instruction (Schwartz, Bransford, & Sears, 2006). We postulate that for instruction to integrate these dimensions, it must involve active interaction with artifacts, agents, and people. This is based in part on Vygotsky's and Hatano's theories that some forms of knowledge arise only through interaction (Hatano & Inagaki, 1986; Vygotsky, 1987).

This study investigates in a laboratory setting if the Second Life MUVE can be used to help students learn about concepts related to adaptive expertise. In future studies we will attempt to teach students through blended learning; combining our MUVE experiences with lectures in a college classroom setting.

## METHODS

### Design of the Puzzles Environment in SL

We designed an interactive task in Second Life that involves manipulating virtual tools to open doors and move an avatar through a maze consisting of a series of rooms. The outside of the maze is shown in Figure 1. In each room of

the maze is an entrance door and on the opposite wall an exit door. Paintings, signs, and buttons are placed on the walls and other artifacts such as chairs, sticks, and rope are lying around the rooms (see Figure 2). The buttons have various shapes and sizes that vary across the rooms. In each room, the visitor must figure out how to open the door in order to move on to the next room.

The maze was specifically designed to provide participants the opportunity to relate their experience in it to a set of classic studies and theories in the learning literature such as Thorndike's cats in a puzzle box (Thorndike, 1913), Luchins and Luchins' Negative Transfer, Judd and Wertheimer's studies of learning with understanding (Luchins & Luchins, 1970), Duncker's functional fixedness (Duncker, 1945), and Hatano's adaptive expertise (Hatano & Inagaki, 1986; Schwartz, Bransford, & Sears, 2006).

### Subjects and Protocol

We interviewed four University of Texas at Austin graduate students, one male and three females, in a laboratory setting using the



Figure 1. Outside View of the Front Entrance to the Puzzle Maze in the SL MUVE. Sign reads "Welcome to LIFE Center's Maze ONE. Get through the Maze as FAST as you can."

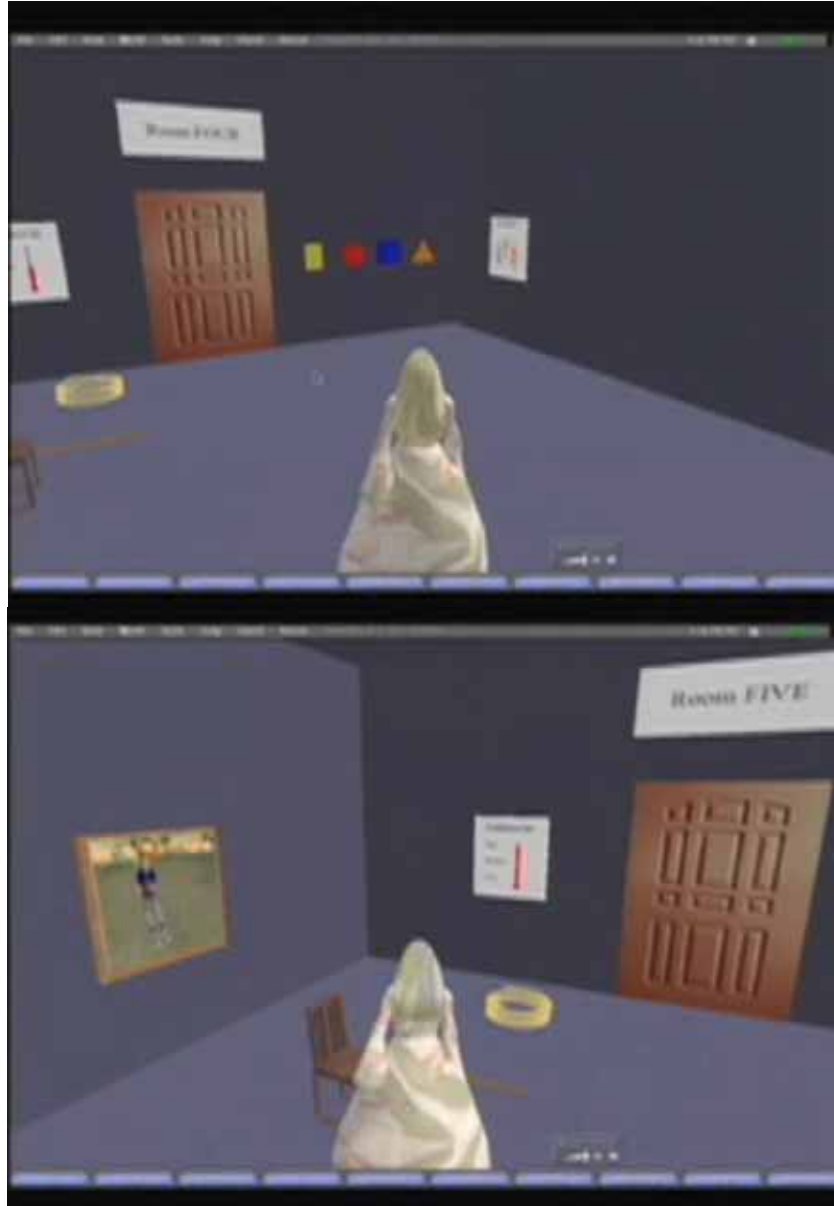


Figure 2. Inside Some of the Puzzles Maze Rooms

following procedure.

The students were shown a video of two different avatars sequentially exploring the maze alone. The second avatar was more successful than the first in terms of getting through the maze in a shorter amount of time. Then the interviewer told the student that he or she must also navigate an avatar through the maze or give the interviewer directions for how to do so.

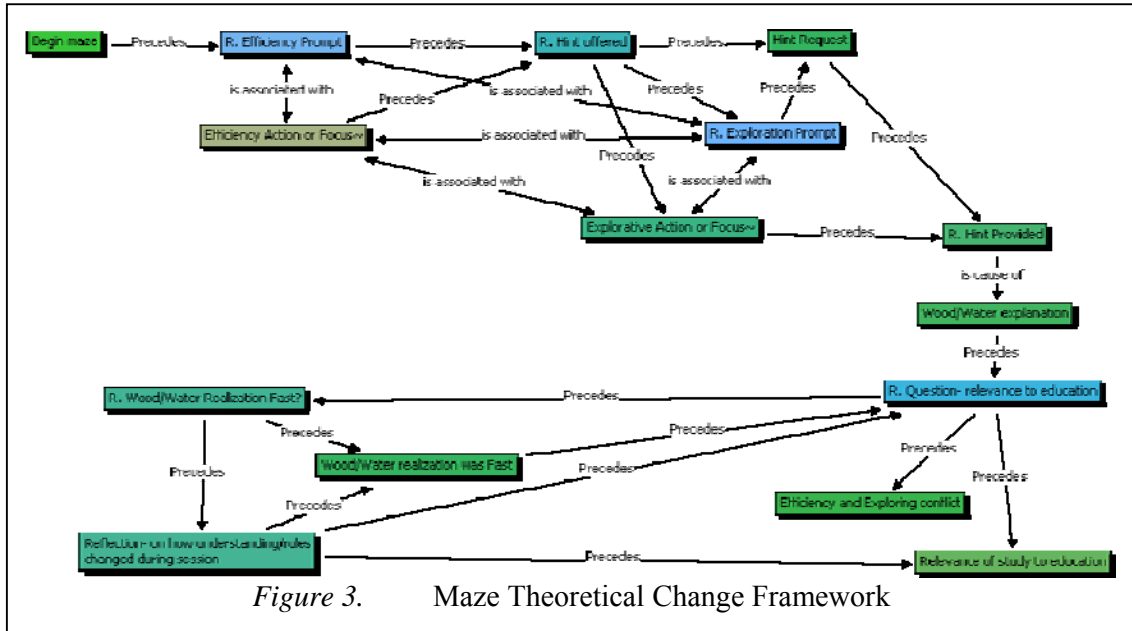
Students were prompted to initially operate in an efficiency mode in various ways. In addition to watching the video, in which the focus was clearly to get through as quickly as possible, the beginning of the series of rooms has a sign

above the door that encourages visitors to “Get through the Maze as *FAST* as you can” (see Figure 1). The interviewer for this study also instructed students to learn the quickest way through all of the rooms just before they entered the first room. In addition, the virtual rooms themselves occasionally whispered to visitors over the Second Life chat channel encouraging them to quickly progress through the maze.

There were obstacles to quickly progressing through the rooms. These included the potential for the avatar to be stunned for 15 seconds in certain rooms. Students had already seen an avatar get stunned in the video and most took

precautions to avoid this situation. It was possible to learn, based on clues in the rooms, why stunning occurs and how to avoid it. Once a student had gotten their avatar out of the maze the first time, they were asked to explain how they thought the rooms worked and to draw some representation of their understandings on paper or with Inspiration software.

shown in the diagram), illustrating the difficulty of overcoming initial efficiency framing. Also depicted is how students saw those experiences related to teaching and educational theories. Events or utterances enacted only by the researcher/interviewer have codes that start with "R." Events or utterances made only by students have codes that start with "S."



Then students were asked to go through the maze again, but this time to explore it with the goal of understanding how it works. After this exploration, students were asked again to produce a hand written or Inspiration diagram of their new understandings. The interviewer also asked the students about how and why their understandings had changed.

regard to the wood/humidity relationship described the change as abrupt or fast as opposed to gradual ("Wood/Water realization was Fast" code). In the following figures are some quotes of students describing their sudden conceptual change.

Recordings of these MUVE experiences and interviews were transcribed and coded by multiple researchers. Then the patterns of codes were analyzed in order to produce a theoretical change framework of what events may have led students to learning about concepts related to adaptive expertise.

**RESULTS**

The diagram in Figure 3 is a theoretical change framework illustrating how initial efficiency framing led the students away from exploring the maze, leaving them with brittle, superficial rules for explaining the maze. It also shows the winding path towards exploration and a deeper understanding (framed by predictive rules not

“Student: Because that was wood, and then I thought "Well who cares if the chair's expanding, or-or contracting." and then, then boom, "the door, when the doors expand you can't open them!"

“Student: Yeah why are there artifacts in the room

Interviewer: Right.

Student: or-or what they are doing and I'm like "Oh OK that makes sense now" and then-and THEN suddenly it seems to make more sense in the physical world.”

Figure 4. Quotes of Change as Abrupt or Fast as Opposed to Gradual

Each student eventually was able to relate their experiences to educational practice (“Relevance of study to education” code) including in terms of avoiding efficiency framings early in the learning process, or in terms of trade-offs between efficiency and exploration modes (“Efficiency and Exploring conflict” code).

“Student: And I guess you know in-in the classroom its the same thing especially with you know what would we teach procedures with right we just kind of show an example quickly and then it seems easily and but-and then the kids are emulating it but them when they come into a situation in which they are trying to interpret their own understanding of it

Interviewer: Imhm

Student: they can't, but you know with just a little bi-exploration, especially guided exploration y-

Interviewer: Yeah, yeah

Student: It helps.”

“Well, you know it is funny, because we were talking earlier, I was thinking breath not depth as far as curriculum and I was thinking if we were going through this room about speed and just getting through the maze, I had no kind of explore to touch other objects and see what they were like do. I was just trying to plow through and so I didn't have time to look at the gauges or look at the differences because it was just about speed. And so I think that then you miss allot. And I think that is a problem with a lot of curriculum. Especially, well you miss a lot. We have to give you a definition, but let's not explore temperature.

Interviewer: You don't know why when you touch metal and plastic in the same room and when they are the same temperature metal feels colder?

Student: That wouldn't be explored, you would get the definition of temperature and you would play with a Bunsen burner or hot plate. You wouldn't get to talk about loss of heat or energy. I mean you would maybe talk about that in later grades. It seems that in Texas, you just want a definition. Definition learning and no exploration of why. You are just going to learn the rules. I am trying to think of a specific example and I guess that is my own example

and my own thoughts about large curriculum which are not very deep but they are very very broad. But when you are learning, that is a problem”

Figure 5. Quotes of Students Relating their MUVE Experiences to Educational Practice

## CONCLUSION AND FUTURE WORK

These laboratory results confirm that a MUVE like Second Life can likely be used to teach concepts related to adaptive expertise. We are now planning to utilize Puzzles Mazes in college classrooms and compare the benefits of virtual experience plus description versus description alone on understanding and using the concept of adaptive expertise. Various renditions of the experiential conditions will be compared to a “traditional classroom” control condition, where students simply read about a set of studies and then answer questions. Our hypothesis is that the opportunity to map personal experiences of problem solving into the studies will have an effect on engagement, recall, and the ability to apply the concepts to new problems that students will be asked to solve in Second Life.

## LINKS

See <http://life-slc.org/?p=382> for more on how MUVEs can be used in learning and research.

The LIFE Science of Learning Center: <http://www.life-slc.org>

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## **Case Studies**

# Collaborative Story-telling: Performing the Narrative of the Griefer

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## ABSTRACT

As the World Wide Web transforms into Web 2.0 in the era of media convergence and becomes a full-fledged computing platform serving Web applications to end users, it goes without saying that the traditional concept of the narrative born out of the print culture becomes inadequate, if not useless. Already, hybrid forms of story-telling that offer immersive and interactive environments have emerged in which readers are expected to perform activities that go beyond the mere act of reading. This paper will explore the transformation of narrative in the age of media convergence where the power of the media producer and that of the media consumer interact in unpredictable ways.

As a Web 2.0 platform, Second Life provides one of the most attractive environments for content creation, including stories, where users' performative acts facilitate the construction of different aspects of the metaverse. Moreover, its open-source environment provides optimal conditions for textual poaching which ultimately results in the construction of *multi-platform narratives*. In multi-platform narratives the stories are extended onto various diverse platforms, each one unique but all complementary. Such an erratic arrangement of narrative bits leaves the formation of texts to the user/reader and, more importantly, necessitates the redefinition of textual space. This paper will investigate the production and consumption of the narrative of the griefer as a performative act that forms various texts on different platforms that embody different characteristics and, ultimately, elicit different meanings of *Second Life*.

## PAPER

In a blog entry in *Clickable Culture*, Tony Walsh (2004) inquires whether there is narrative in Second Life or not. His first response is that there isn't any. Nonetheless, he is quick to note that Second Life complicates the notion of

narrative in a bizarre way, because "Like the Web, Second Life's story is told in endless threads, some woven together into a cohesive fabric, and some intersecting at various angles. Most of Second Life's pockets of narrative take place between users. Like the proverbial tree in the forest, if nobody is around to witness it, it's like it never happened. Other pockets are found attached to in-world objects—lasting testimony of a story, either deliberately constructed as such, or evidence that *something* is going on.

Walsh's assessment is indeed perceptive and true for most media these days, but specifically applicable to virtual worlds. His post evokes the now defunct debate between the *ludologist* and *narrativists* regarding the existence of narrative in electronic media and videogames. While the former, claiming that interactivity undermines the notion of narrative as defined by authorial intention, linearity, and plot development, refuses its existence, the latter argues that the former group embraces a narrow model of narrative and that we should instead focus on the *narrativity* of the work, which is exactly what Walsh's blog entry suggests. In exploring the mechanics of narrativity in Second Life, I propose the model of *multi-platform narratives* suitable to the complex ways in which communication functions in the era of media convergence. Multi-platform narratives, I argue, display variegated textualities spread across diverse media connected through the Internet and are produced exclusively by its users. This presentation will investigate how the narrative of the griefer is constructed across platforms by way of textual poaching.

As the World Wide Web transforms into Web 2.0 in the era of media convergence and becomes a full-fledged computing platform serving Web applications to end users, it goes without saying that the traditional concept of the narrative born out of the print culture becomes inadequate, if not useless. Refusing to limit convergence to the technological process of bringing together multiple media functions

within the same devices, Henry Jenkins (2006) contends that this concept “represents a cultural shift as consumers are encouraged to seek out new information and make connections among dispersed media”(3). Not surprisingly, such a platform elicits hybrid forms of storytelling that offer immersive and interactive environments in which users are expected to perform certain activities. The text is inevitably extended across multiple platforms, thus resulting in alternative textualities that complicate the notion of textual space. Ultimately, meaning-making becomes a collaborative process.

For a study of narrative across media, one that focuses on the message and the technological mode of transmission of narrative, Ryan (2006) contends that a distinction between *being a narrative* and *possessing narrativity* is particularly useful. According to Ryan, while “being” a narrative can be predicated on any semiotic object produced with the intent of evoking a narrative script in the mind of the audience, “having narrativity” means being able to evoke such a script. In addition to life itself, pictures, music, or dance can have narrativity without being narratives in a literal sense (9). In other words, a work does not have to embody a narrative script per se to evoke stories in the mind of the audience. For a narratologist, Ryan contends, capturing a fictional world that evolves in time under the action of intelligent agents is all it takes for a semiotic artifact to fulfill semantic conditions of narrativity (200). Accordingly, Henry Jenkins argues that storytelling has become the art of world building as artists create compelling environments that cannot be fully explored or exhausted within a single work. The world, being larger than the story, can support multiple characters and stories across various media. The world-building operations, then, becomes important in the creation of stories. With its open-source approach to content creation that allows its residents to build the world by facilitating the construction of environments that stretch in space and exist in time, *Second Life* allows for the appropriation or even the poaching of its textual space to create a habitat for a population of animate agents. In other words, when residents are in-world creating content, they are indeed performing acts that mobilize the tools of *Second Life* which ultimately result in various narrative scripts, linguistic or otherwise.

The environments that residents create through their appropriation of sims in *Second Life* allow them to construct spatial literacies that elicit stories. Malcolm McCullough’s understanding of spatial literacy is particularly relevant to the production of stories in *Second Life* because his view expands the understanding of narratives to the texts that include non-linguistic cues by emphasizing environments as a factor contributing to the construction of stories. Viewing story-telling as a cultural disposition, McCullough (2004) argues in *Digital Underground* that as cultures dwell, they build stories and literacies around their environments (40). Spatial literacy, according to McCullough, is not confined to literal signage that declares space, but rather “a literate denizen reads a space from its events and its symbols like animal scat on the trail, and does not enjoy being told where to turn, what exactly occurs in each place along the road” (38).

The textual space of *Second Life*, however, extends far beyond the boundaries of the metaverse due to *Second Life*’s ability to seamlessly integrate various external platforms such as *Firefox*, *IRC* channels, in-world blogging tools (*BlogHUD*), and image databases like *Snapzilla* and *Flickr*. Not to mention its residents communicate outside of the metaverse via tools like *Skype*, *AIM*, and Web 2.0 technologies like *Twitter* and *Facebook* and publish the *machinima* and spoof stories they produce on sites like *YouTube* and *Second Life Safari*. Many residents also have their personal blogs where they discuss in-world events, comment on each other’s posts, and open forum threads in *Second Life Citizen* forums. The integration of these tools into *Second Life* indicates that any performative activities that take place in-world elicit narrative scripts on external platforms.

The model of transmedial narratology as proposed by David Herman and Henry Jenkins in their works provides an effective starting point for analyzing how stories unfold in the unusually amorphous textuality of *Second Life*. However, Jenkins’s model, which is primarily designed with franchises in mind, such as *The Matrix*, proves to be somewhat inadequate in explaining the ad-hoc nature of the narratives of *Second Life*. To capture their inherently fragmented nature that emerges from being collectively produced randomly by the residents, I will call these stories *multi-platform*

*narratives*. Multi-platform narratives are inherently fragmented because they are created randomly without any sort of centralized coordination of the narrative scripts into a larger whole that eliminates their contradictions and redundancies. As such, they present a looser narrative structure that is composed of incomplete fragmented units. As the stories are spread across many media forms, residents participate in forums and other platforms and rely on the collective intelligence of other residents when constructing a meaningful whole out of the narrative pieces that they encounter. Unlike the creators of transmedial stories, multi-platform narratives of *Second Life* are mostly created by those in a position of weakness who lack immediate access to the resources or the skills needed to produce these stories in a professional manner.

These narratives, by nature, blur the boundaries between the activities of production and consumption by merging them into a single performative act, thereby presenting a suitable model for the era of media convergence. Stories are not just actively sought out and consumed on various media channels, but are also produced by the very same people who consume them. Moreover, any resident who reads these stories may decide to develop the story in unexpected ways. In other words, any act of consumption can transform into an act of production on the spur of the moment. As such, these acts of production rely heavily on poaching where residents poach the stories created by other residents who, in turn, had poached other stories or even the textual space in different ways.

The spatial literacy created by goons in Baku elicits counter-cultural narratives, one akin to that of the digital underground due to the electronic nature of the medium of *Second Life*. Goons make social commentaries through their pranks and offensive builds, exposing how meaningless and hypocritical some of the assumptions held by the society are. Their overall attitude is to undermine anything held sacred by the society in which we live today in the most offensive and shocking manner by appropriating and distorting culturally innocuous images. By doing so, they construct the narrative of the *griever* in the persona of Plastic Duck, a renowned griever of the metaverse. In an interview with Tateru Nino, conducted in November 10<sup>th</sup> 2006 and published

in *Second Life Insider*, Plastic notes that his persona no longer designates a person, but an idea, a group of people striving to achieve something. Aside from a few close friends he keeps in contact with, most goons do not know who Plastic Duck is on the forums and he has mostly lost contact with those who do a long time ago.

Plastic's statement about his real identity as Plastic Duck being unknown to many residents and that of Plastic Duck's being an idea, and not a particular avatar, is seen in the Daffy Duck avatar shapes which are widely distributed among *W-Hat* goons. This avatar shape was initially designed by Tangerine Freckles who has long since been banned due to some kind of copyright infringement. According to Tangerine, Plastic, as the most renowned griever in *Second Life*, has a certain stigma about him which makes him attractive to the members of *W-Hat* who, to attract negative attention, pretend to worship him and identify with his persona. Noting that Plastic's real avatar looked like a robot rather than the Disney-like character that residents see in media these days, Tangerine says that he himself created Plastic's cartoonish image.



**Figure 1 Plastic Duck's original avatar, *Second Life Insider***



**Figure 2 Daffy Duck avatar**

He contends that by *disneyfying* Plastic, he could make him less of a threat, and more of an absurdity that people would understand as a

joke.<sup>1</sup> Later on, this image was appropriated by another goon, Decomposing Monstre, who continued to make plastic-themed paraphernalia because, according to him, “the idea of this evil malevolent duck that foils the Lindens at every turn is hilarious to me. It’s not even about the person who was Plastic Duck anymore, it’s the fact that he has come [sic] this iconic figure that everyone knows about, and we [goons] like to perpetuate this image and keep it absurd.”<sup>2</sup>

The pervasiveness of Daffy Duck’s image in all its variations indicates that the *W-Hat* goons adopt this look to represent the counter-culture they enact in *Second Life*. These Duck look-alikes either have a physical defect, like being cross-eyed and disproportionately blown up, or display some kind of culturally undermining characteristic, such as alts that keep falling down drunk, or those that have a military outfit that resembles the monuments of Stalin or Hitler. By appropriating Daffy’s image extensively, goons establish this image as the defining characteristic of the griefer.



**Figure 3 Drunk Plastic**



**Figure 4 Plastic avatar dressed as a call girl**

Accordingly, the Wikipedia entry for this term shows a goon in Tangerine’s Daffy Duck avatar standing next to a crashed sim which is, in all likelihood, Baku itself.<sup>3</sup> The extensive appropriation of the Daffy image that gives birth to a number of look-alikes, along with the widespread use of Duck-related name tags such as “I am Plastic Duck,” proves that Plastic is, in deed, no longer a single avatar to be detected and banned, but becomes an idea perpetuated by a group of people and is impossible to crush. More importantly, by creating alts that physically resemble the Disney-like image of Plastic, building and distributing objects with Plastic themes, and even modifying the land to look like Plastic, goons do not just edify the idea of Plastic Duck, but rather, perpetuate the narrative of the griefer in its absurdist form, that of the rubber duck, which ultimately renders the reaction it ignites absurd.



**Figure 5 Plastic Mount Rushmore**

<sup>1</sup> Taken from a personal interview with Tangerine Freckles conducted on 8 February 2007.

<sup>2</sup> Taken from a personal interview with Decomposing Monstre conducted on January 8 2007.

<sup>3</sup> Interestingly, Daffy Duck’s image next to the crashed sim has been deleted from the entry. C.f. Griefer <http://en.wikipedia.org/wiki/Griefer>. Date accessed: 1 August 2007



Figure 6 Plastic Placemat, created by Deco

Decomposing Monstre also wrote and directed a machinima entitled “Griefzilla” which won second place in the Fox Atomic contest in February 2006. In this movie, which presents a blend of *Godzilla* and *King Kong*, a giant Plastic Duck destroys the city, knocking over its buildings and crushing its tiny residents.



Figure 7 Plastic throwing a building, “Griefzilla,” *Second Life Safari*

Although the original set is located in *Alt Zoom*, a sim where most machinima movie makers shoot their movies, a parallel build was constructed in Baku, with tiny cars and buildings complete with pose balls that allow residents to enact the role of a giant gorilla on top of the buildings. The creation of this movie, like other goon productions, is a collaborative process. While Deco wrote the script and shot most of the movie, Sammy Griggs played the characters who were crushed by the giant Duck, Donald Kaiser built the particle system that

showed people jumping out of the tall buildings, and Charismo Abismo created Prokofy Neva’s apartment, who is allegedly Plastic’s arch enemy.<sup>4</sup> This machinima was later appropriated and turned into a story by the editor of *Second Life Safari* by Petey on March 17<sup>th</sup>. The *Second Life Safari* story includes not only pictures of certain scenes and the movie itself, but also the story as written by Petey, who relates the early childhood of Plastic, who apparently had a problematic family life, with a mother who stripped at a local joint to support her drinking habits and a father who had close ties with the furry community. After a long list of bad things he did growing up, Plastic, as a non-recyclable artifact that is destined to cause much evil, finally relinquishes to becoming a noted griever.



Figure 8 Plastic, the noted griever, *Second Life Safari*

As the performative narratives of the griever demonstrate, stories are no longer simply consumed in the age of media convergence, but rather, users take active responsibility for their production. More importantly, media convergence complicates the notion of textual space, extending the space of *Second Life* onto external platforms in which readers are forced to actively seek out all the narrative fragments in order to piece the story into a whole. The fragmented nature of these stories reflects their ad-hoc production and the absence of the authorial power that unifies these pieces into a coherent whole.

<sup>4</sup> Information gathered from a conversation with goons in Baku on 27 February 2007.

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# Nutrition Game

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## ABSTRACT

The Nutrition Game is a video game developed inside Second Life. The game was designed to increase awareness about the health effects of eating fast food and certain traditional ethnic foods. A player is able to choose foods from three different restaurants to simulate a day's worth of food choices. Information about each food can be viewed and then the player can choose meals to eat for the day. After eating three meals, a player is given statistics on how his or her health would be affected by continuing this style of eating. Preliminary results of a survey about the game from people who have played the game indicate that it has an effect on a player's conception of fast food and will impact their food choices next time they eat at fast food restaurants. Learning about food choices and their consequences in this manner is a fun and educational way to learn about healthy eating habits. As a proof-of-concept game exploring the potential of the Second Life 3-D virtual world in education and outreach, the Nutrition Game has provided valuable firsthand experiences.

## INTRODUCTION:

The Nutrition Game is a video game played inside an online virtual world called *Second Life* ([www.SecondLife.com](http://www.SecondLife.com)). The game has been created by a team from Ohio University consisting of Dr. Chang Liu (professor), Christopher Keesey (graphic designer) and Tessa Cooper (graduate student). The purpose of the game is to show the impact that different foods, especially fast food, have on health. The effects that fast food has on health has been a continuing problem for quite a while and has increased significantly in the past decade. Only recently has the issue come into the spotlight though. Fast food has been charged with contributing to obesity, high cholesterol, and clogged arteries, among many other health issues (Martindale, 2003). Contributing to the problem is the fact that it is often eaten with no realization as to how it affects health and no

knowledge of the nutritional content in the food. This game aims to bring awareness of the nutritional content and health effects of eating fast food regularly in an engaging, informative, and safe manner. A player can test out different eating styles in a virtual environment that won't affect their actual health. The game is also beneficial because it can show immediately what would happen over a period of time in real life. For instance, the game can show a person how much weight he or she would gain from a certain eating style instantly, but it would take months to see the effects in real life. It is hoped that by playing this game, a player will gain a realistic idea of what kind of nutritional value they are getting from the food and how their health is affected by the foods they eat in both a short- and long-term context. The player will also hopefully gain the knowledge necessary to make informed decisions and choices when eating at fast food restaurants.

## THE GAME:

The game simulates one day of food choices. It consists of three different restaurants: a fast food style restaurant, a Soul Food restaurant and a Chinese restaurant. Each restaurant has a menu of foods available for the player to choose from. During the game a player chooses meals to eat from any of the three restaurants and information about the foods they choose is recorded. At the beginning of the game, a player is asked if they would like to use their personal statistics or the statistics of their avatar. If the player chooses to use their personal statistics then they will be asked personal questions about their height, weight, age, activity level, and sex. Based on their input they are given a personalized "caloric budget" for the day. If they choose to use their avatar statistics then an estimate is made as to how many calories a human being would need if they had the same proportions as the avatar and this value is used as the caloric budget. The caloric budget is the number of calories the player should eat to maintain their current weight.

Next, the player will go through a simulated day creating meals from any of the three virtual restaurants in the game. At each restaurant, the player will be presented with a menu of different food choices. Each food can be clicked on to receive more detailed information about it, such as the amount of calories, fat, and cholesterol, along with the health benefits of eating the food. Advice is given on how to make each particular food healthier too by doing things such as eliminating the sauce and cheese, or getting grilled meat instead of fried. The player can choose what food they want to consume for the meal. Each meal will subtract from the player's caloric budget and the fat and cholesterol will accumulate depending on the foods eaten. After three meals have been consumed, the game is over. The player will receive statistics on how they did. They will be told how much weight they will gain or lose in one week, one month, and one year based on their eating habits for the day. How much of their diet came from fat and how much cholesterol they consumed will be compared with recommended values. They will also be told of likely ailments to expect or that they will avoid based on these values. In this way a player can see how their health is affected by the foods they eat.

#### **LESSONS LEARNED:**

The development of the Nutrition Game started in November of 2006 and wrapped up in April 2007. During those months the game went through many transformations. It started out as just a single fast food building with three menu options. The HUD (heads-up display) was added to give each player an individual experience and to allow multiple people to play at one time. As time went on, two more restaurants were added and menus were created and expanded for each. There were many obstacles in the development process. The first problem encountered was learning to display text on a prim. This proved to be a difficult task because there are no direct methods for applying dynamic text to prim provided by Second Life. Thanks to the XyText scripts created by Xylor Baysklef that use shifting textures to display up to 10 characters on a prim, the problem was solved (LSL Wiki, 2006). The second problem encountered was eliminating cross-talk between different objects. The goal was for the game to

be able to be played by many different people at the same time, but this proved to be problematic when different avatars interacted with the same object at the same time. A system was developed where an object changes its name to the avatar it is communicating with so that no other avatars or objects they are communicating with will pick up the message.

Another issue that arose was the need for version control. The versions of each script became very numerous as additions were added and the game expanded. The instances of each script also started to grow large, for instance each food object had the same script in it. It quickly became apparent that an indexing system was going to be necessary to keep old versions and new versions separate. This made it possible to keep older versions of the game for reference if need be.

#### **PLAYER FEEDBACK:**

A short survey was created to get feedback from the players. Questions were asked to determine the overall opinion of the game, how fun the game was, how much was learned, if eating habits would be impacted by the game, if any bugs were found, and clearness of the game play. A total of 20 responses were obtained from different sources. These sources included 2 groups of college aged men and women attending minority health seminars, peer students working on other Second Life projects, and a group of senior computer science students. All participants were first given a brief introduction to the game and health in general and were then given a short demo of actual game play in a group setting. Each person was able to play the game individually for about 20 – 30 minutes (time for about 2-3 run-throughs of the game) after the introduction.

Player feed back was generally positive. When asked how much was learned from the game on a scale of 1 to 5, (1 being the lowest and 5 highest) 65% respondents reported a 4 or 5, and 94% answered with a 3, 4, or 5. This gives a good indication that almost everyone took something away from the game and the majority of people learned quite a bit from the game. When asked the open-ended question, "What have you learned from the game?" one response was simply "how to eat healthly[sic]." Another player gave a more detailed response indicating

what they learned from the experience, “I learned how different types of food compare to one another in the context of calories, sodium intake, etc. Some foods were more damaging than I expected while others were not as bad as I would have thought. It was an eye opening experience.” The responses emphasize the fact that respondents learned something from the game, although what was learned varied from person to person.

A question asking if there was anything unclear about the game helped to pin down one drawback. When Second Life is running slowly the dialog boxes do not always appear and events are not always triggered automatically. This can bring about confusion while playing the game because it will seem as if objects are not responding when clicked, giving the impression that the game is not working correctly. The question as to whether or not any bugs were found also made it evident that lag was causing confusion while playing the game.

90% of respondents chose to use their personal statistics when playing the game. When asked why they made this choice, nearly all respondents answered that they wanted a more personal experience with the game. Upon being asked if respondents found the game to be engaging and informative, nearly all respondents reported a positive experience. The game was found to be engaging by the majority of players. Respondents reported liking different aspects from choosing meals to seeing statistics at the end of the game to just having a generally fun experience.

The results of the survey helped identify the strengths and weaknesses of the game. It has been a crucial part of the development and analysis of the game. Feedback from respondents will be one of the most helpful items in improving the game for the future. It is also an invaluable part of learning how to make effective educational games in the future.

#### **FUTURE WORK:**

Many additions to the Nutrition Game could be made. For instance, the game could keep track of more nutritional items such as vitamins and minerals, protein, sodium, etc. Doing so would allow the game to give a more detailed analysis of health and possible ailments due to diet. The player could get a more complete picture of

their nutritional intake and how it is affected by fast food by considering more factors. Another idea too for a future revision is to increase the time frame of the game. The current time frame is one day. But expanding it to one week, or one month, or even six months could improve the game. One day is not always a good indication of a person’s normal eating habits. Increasing the timeframe of the game would help give a more accurate projection of the player’s health. The ability to make food choices over an extended period of time would also allow a player to experiment with different eating styles to see the impact on health. To make the game more engaging, a feature could be added to change the avatar according to health. As an example, the avatar could gain weight to reflect the amount of weight the player would gain at the end of the game, or the avatar could start to slump if the player does not consume enough calcium. Adding features to this extent could help impact the effects that diet will have on health in both a short and long term context, as well as add a fun factor to the game.

#### **CONCLUSION:**

The Nutrition Game is a creative attempt at combating the negative effects fast food has on health through the use of technology. Presenting health material in the form of a game introduces it in an engaging and informative manner that allows users to learn in a fun environment. Players are able to see how different foods and eating styles affect their health in an environment in which their actual health is not at risk. It is hoped that by playing this game, a player will learn to make informed and wise decisions when eating at fast food restaurants. The player will also hopefully gain a realistic picture of the nutritional content in the foods they are consuming. The issue of fast food and its effects on health is larger than any one solution, but this game may be a step in the right direction towards educating people about the health affects of eating fast food as a regular part of their diet. So far the game has shown to have an impact on the people who have played it. Many people have reported learning about the foods they regularly consume at fast food restaurants, and hopefully this new knowledge will impact them the next time they are eating at a fast food restaurant.

### **ACKNOWLEDGEMENTS:**

We would like to especially thank Christopher Keeseey for his invaluable contributions to the development of the game. Also thanks go to the Ohio Commission for Minority Health who funded the game.

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# I AM Columbia Island

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## **ABSTRACT**

I AM Columbia is the first active academic island in the Chicago area, and as such, innovative educational models for education in SL were desired. Our approach was to focus on infrastructure, content delivery, student experience, and college engagement while maintaining departmental integrity.

This presentation will describe the Columbia College Chicago research, strategies for implementation (appropriateness to task, innovative architecture with identity branding), along with the 7-point plan for content delivery and event delivery. With inspiration from visiting innovators like John Freeman and Sarah Robbins, Columbia College Chicago is already host to a 500-student art festival and hosting the SL version of the University Film & Video Association. We hope that our implementation and delivery strategy may be of use to other educators, and in that spirit, we offer our strategy. Manifest SL: A Campus-Wide College Art Festival History and Case Study. Many educational institutions entering SL are wrestling with the issues of establishment of best practices and basic deployment as more come online. In 2007, as part of its initial thrust into Second Life, Columbia College Chicago, we launched Manifest SL, an extension of our campus-wide art fest. The 9-story BitFactory structure, originally designed as part of Columbia's pre-island SL research initiative, became the launch platform for our multi-modal engagement strategy with our students, creating opportunities for live events, applied knowledge, and archival media databases.

This presentation will outline the history of the Columbia College Chicago implementation strategy, the structure of the Manifest SL festival rollout, and how that structure lays the foundation for the initial Columbia College Chicago SL deployment strategy.

# A First Experience on Implementing a Lecture on Second Life

Luis M Martinez<sup>15</sup>, Pablo Martinez, Gabriela Warkentin

## ABSTRACT

We implemented a lecture in Second Life as part of the Technology, Human and Transcendence undergraduate course at Universidad Iberoamericana in Mexico City, based on pedagogical principles and delivery criteria. We first report the use of Second Life as a learning platform within the higher education panorama in Mexico. Although the teacher has more than 15 years of experience in academia, he found problems while designing the lecture and during delivery due to the relatively unknown media capabilities. However, a survey with those students that attended the lecture shows a very high appreciation amongst them for such an innovative activity. In this paper, we present the method used for designing the lecture according to first principles in pedagogy. We review relevant results regarding the delivery method and lecture implementation, including a list of observed problems. Finally, we discuss the possibilities of this novel environment for a full course delivery, which even can challenge current practices in course delivery.

## KEYWORDS

Online instruction, distance learning, immersive virtual spaces

## INTRODUCTION

Amongst the myriad of possibilities that digital environments -readily available to the user community- worldwide educators have encountered a furtive and challenging domain for academic and educational activities inside

Second Life. With more than a year of transiting through SL, we have found that academic exploration of digital worlds normally follows one or several of the following broad lines: meta-educational regions that are dedicated to knowledge of the same system (Ivory Tower Library of Primitives), building interactive knowledge-based spaces that do not necessarily depend on educative institutions (International Space Flight Museum), or extending off-line education activities into this digital environment (by mounting a whole campus, Ohio University, or as an initiative of the teacher himself, either through Campus: Second Life or by owning a parcel).

As part of the research program of the Learning Technologies Laboratory at Universidad Iberoamericana (UIA) Mexico City, we explored the use of Second Life as a learning environment and contrasted its use to other technological tools held at this lab to support teacher, research, and student communities which conform to our university. Here we present the steps followed by the teacher in terms of instructional design for an in-world lecture, the description of how the classes followed, including students' perspective. We also present our conclusions about course delivery for Second Life.

In this paper we explore the possibilities and challenges of using Second Life as a lecturing synchronous environment. We expose the organizational, interaction and spatial (Sassen y Latham, 2005), considerations of implementing a lecture inside Second Life. Nevertheless, a number of questions arise from this experience such as: Which elements are involved during in-lesson communication inside the grid? How do

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students and tutor(s) acquire their role during in-world interaction? How do decisions concerning the lesson's content and the learning objects used influence class development? Further exploration will certainly lead to clarify such themes.

### **A COURSE ON TECHNOLOGY, HUMAN AND TRANSCENDENCE**

Universidad Iberoamericana (UIA) in Mexico City offers a number of optional courses known as "university reflection courses" which act as curricular spaces aimed at the ethical reflection and the development of critical capacity and self-criticism (UIA, 2004). These courses are grouped in four themes, namely: Person and Humanism, History and Society, Person and Praxis, and Transcendence. The experience reported here belongs to the activities of the course Technology, Human and Transcendence (THT), under the last theme.

The THT course aims to identify convergence points between philosophy, religion and science; while discovering the importance for the 21<sup>st</sup> century individual of the integration of these knowledge disciplines. By the end of the course, students are expected to construct basic articulations between faith, scientific knowledge and philosophy. Current implementation of this course is based on the study of convergence/divergence phenomena involving such approaches to knowledge.

### **SECOND LIFE AS SYNCHRONOUS LEARNING PLATFORM**

In 2006, Second Life came to our attention as part of our observation of technology-related phenomena at the Learning Technologies Programme. Under a broader study (Martinez 2007), we identified a number of educational activities that could be implemented within this metaverse. At that time, we identified two relevant educational activities suitable to be implemented for the THT course. A first activity is the observation of the convergence/divergence phenomena within SL, mainly on religious movements. While another activity could be related to using SL as an educational platform, with unlimited possibilities as those previously reported (Livingstone & Kemp, 2006). Hence, we

thought to experiment with a synchronous lecture within SL for evaluating the usefulness of such an environment within the THT course.

### **INSTRUCTIONAL DESIGN**

Although several instructional design models are currently in use, for this lecture we chose a basic model based on Gagné's theory (1985) and the Ignatian Pedagogy (Kolvenbach, 2005), widely used within our academic environment. In particular, the later embodies five key teaching elements--Context, Experience, Reflection, Action, and Evaluation, in contrast to the former, often referred as the "Nine Events of Instruction". An accessible theme was selected to ease the learning experience in SL, chosen from a vast array of the content currently composing the face-to-face course (18 weeks, 36 lectures). Based on the relevance of context within both instructional theories, we proposed the study of Terrorism as the lecture theme. This subject has the advantage of being widely covered by media and academia, enabling every student to have a similar knowledge level. In fact, recent terrorist attacks (Hutcheon 2007) within SL could enrich the lecture.

The main objective of the lecture was to identify convergence and divergence of technology, faith and philosophy in recent terrorist events. To achieve this objective, we selected a number of examples of terrorist events, such as 9/11 attack, the Golden Temple seizure and the activities of IRA and the Animal Liberation Front (Dept. of State, 2004). The delivery strategy was to present significant facts and information regarding each event, then to discuss this information and finally, through a brainstorm exercise, identify the convergence / divergence as described above. Additional activities were designed for a double purpose, first to evaluate learning and second as a "time reserve" due to lack of knowledge of the rhythm of the lecture in SL.

Regarding the profile of learners and tutors, the students are undergraduates in diverse fields: engineering, design, law, political science, and architecture. Most of them are third-year students. The lecturer has degrees in engineering (BSc, MSc and PhD), and is well acquainted with learning technology.



**Fig. 1. A perspective of the lecture room**

Evidently, a formal lecture requires a proper learning environment. Therefore, we designed a “lecture room” at Pablomex Commons Parcel. Figure 1, shows a perspective of the room. Using the advantages of SL environment, we incorporated a number of elements usually not feasible in a conventional lecture room such as a waterfall. Our room design included benches for seating the attendees, a lectern, a projection screen for slides (Metalab) and another for video projection (TV projector). A number of posters with relevant information were hung (actually suspended) on the room periphery.

## 5. THE PEDAGOGICAL EVENT

On the day of the lecture, we appointed students at a known place (Reforma) where you can find a landmark known to every Mexican: the Angel de la Independencia (Angel of Independence). The given instruction was to wait there to be teletransported (due to their lack of expertise within SL), with a tolerance of 15 minutes. Nevertheless, a student was not able to arrive to the landmark on time, while spending time at a bar. After teletransportations took place, the lecturer (who was waiting for them at the room) asked them to sit. Some of the attendees were not able to sit properly, while others were looking at the room. This precluded the lecture starting on time. The lecture was designed using a simple “lesson plan” based on the pedagogical events as described above (content delivery, analysis and synthesis). According to the lecturer’s experience, the time needed in SL for implementing a face-to-face activity was nearly twice that of real-life sessions. Of course, this reduced the amount of content that could be covered during the lecture, resulting in cancelling the evaluation activity. In the

instructional design, we considered that the maximum time a student can effectively sustain attention could be 90 minutes. In practice, we observed that it is not longer than 45 minutes depending on the passiveness of the learner. The lecturer, points out the usefulness of the “sleeping avatar” which can be used as a monitor of student attention. Questions and comments were made through the chat facility. Nevertheless that communication channel required “moderation” to focus on a single discussion (as in a conventional lecture) and to avoid simultaneous conversations. Nevertheless, it happened that two or three conversations were held at the time, while a number of private conversations through MSN Messenger or private messages were later disclosed. During the lecture, some students were disconnected due to network problems precluding them from returning to the “lecture room”. A number of guests attended the lecture. During the activity in SL, the lecturer was in a conventional lecture room, joined by a number of “observers” - other teachers with ample pedagogical experience. In the SL lecture room, people were not aware of these guests; as well as the lecturer was not aware that a student was in her bedroom, another at a restaurant, and a couple with guests at a biomedical engineering laboratory.

## 6. STUDENT SURVEY

Following our first experience in SL we conducted a focus group to evaluate the activity. Most of the attendees were worried about their avatar even when the lecturer wore a toga behind the lectern. All of the students were highly satisfied with the experience, however it requires further analysis since this could be originating from the novelty factor rather than learning experience. All of the attendees felt that learning in this environment was slower than in a conventional lecture hall, however this is thought to result from a lack of expertise within the environment. Most of the attendees felt that discipline is relaxed in this learning experience. When asked to evaluate the experience on a scale of 0 to 10, the average resulted in 8.5.

## 7. CONCLUSION

Second Life provides a novel and exciting environment for online learning. In contrast to conventional virtual learning platforms including LMS and CMS, it provides two important and relevant resources: immersive interaction and synchronous dialogue. Although, other educational platforms can provide a “digital classroom” those will never resemble the reality of the conventional classroom, since they behave like desktop simulations rather than emulations as in SL. Nevertheless, usability and reliability problems need to be solved for long-term educational activities. Our first experience in Mexico confirms the feasibility of SL as an educational platform, which shows high satisfaction amongst students and teachers.

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# Educational Simulations in Second Life for Fashion Technology Students

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## ABSTRACT

Scepticism was my reaction when I first heard of virtual fashion designers working in Second Life. The next phase was educational inquisitiveness; could educational fashion product development concepts be simulated in a virtual setting? I was aware of the current emergence of 3D virtual reality being incorporated into the fashion product development process so my curiosity was peaked. The subsequent virtual educational research led me down a path of exciting discoveries relating to providing students with an ideal setting to gain experience with 3D conceptualization for simulating fashion product development and presentation. Experience with this initial virtual fashion project led to the realization that multiple educational aspects of fashion design, product development, presentation, marketing, and promotion can benefit from developing customized simulations in the virtual world.

## BACKGROUND

This Virtual Fashion (VF) Project is part of a larger campus-wide introduction, research and exploration (sponsored by the Research Foundation of SUNY Buffalo State) initiated in January 2007 to discover the educational potential that a virtual educational island setting in Second Life (SL)<sup>[1]</sup> can provide. Faculty, staff, students and members of the administration are encouraged to develop projects in SL that serve to illustrate the positive potential that integration with virtual worlds have to expand the institutional campus presence as well as simulate new learning experiences and collaborations. Because hardware and security issues related to supporting SL are not yet resolved campus-wide, members of the campus community

interested in exploring SL are currently supported on an individual basis.

## THE VIRTUAL FASHION PROJECT

The VF Project was incorporated into the last seven weeks of a fifteen week Fashion CAD course. The primary purpose of these introductory 3D virtual simulation experiences were to provide a transition for fashion students to shift their visual conceptualization from 2D to 3D fashion product design and development. Virtual reality as a pre-production tool is currently becoming a reality in the fashion world. The emerging quick response, cost effective industrial system integrates garment design, surface design, construction, fit and fabric drape, into a dynamic made-to-order 3D virtual presentation before a real prototype is made.

This VF Project is a series of in-class demos and class assignments designed to introduce fashion students to the concept of 3D virtual reality as it relates to fashion product development and presentation. Introductory experience with the 3D virtual reality project in SL and the Virtual Fashion PRO<sup>®</sup><sup>[2]</sup> application will begin to prepare students for the impending changeover to 3D product development and visualization that is currently occurring in industry. It will also pave the way for exploration into the possibilities of development of long distance student collaborations with fashion students from all over the world. A detailed listing of the goals of the virtual fashion project are available on the BSC Second Life WIKI<sup>[3]</sup>.

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<sup>[1]</sup> Second Life, [web site] <http://www.secondlife.com>  
[Accessed August 2007]

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<sup>[2]</sup> VF PRO<sup>®</sup>, [web site] [http://www.virtual-fashion.com/html/en/products\\_vfpro.php](http://www.virtual-fashion.com/html/en/products_vfpro.php) [Accessed August 2007]

<sup>[3]</sup> Go to <http://www.bscsecondlife.info/> select "The Fashion Project" on the left and click on "Goals of the VF Project." [Accessed August 2007]

## THE PROJECT PROCESS

The fashion students began the SL project by learning the basics of signing on to SL, creating an avatar (virtual representation of the user), navigating on the ground and in the air, reviewing inventory and changing appearance. A variety of existing available tutorials were used as teaching aids and resources. When students felt more comfortable about the basics they began to make different outfits using the Appearance menu function. Once they created an outfit they liked they learned how to pose and photograph their avatar in SL<sup>[4]</sup>.

The first customized project was placing their design on to a t-shirt that was set-up on the SL avatar UV map from Robin Wood's "Finished T-Shirt Template Tutorial"<sup>[5]</sup>. Students posed and photographed their avatars with the new t-shirts and uploaded the edited images back to SL to build presentation package objects<sup>[6]</sup>

In an effort to use SL to initiate cross program integration one of the assigned projects for the fashion students was to use textures developed from fiber design student work. Fashion students integrated some of this imagery onto

their fashion outfits via the Appearance menu. The fiber design textures as well the custom fashion outfits developed using them are offered free for visitors to the island at the fashion vendor exhibit.

Students were asked to create sequentially more challenging fashion outfits using their own design concepts that were created earlier in the class while learning other applications. They uploaded seamless pattern texture files into SL to use in conjunction with the Appearance menu. They downloaded Robin Wood's AV UV Templates to create a more customized outfit for their avatar<sup>[7]</sup>.

Sequentially in the last three weeks of the VF Project students were introduced to Virtual Fashion PRO®. to explore the use of additional virtual design applications to enable a wider variety of more complex garment designs.

Each student created three garments in VF PRO® using their own surface pattern designs created earlier in the class. They photographed the garments from different angles in the VF PRO® application and submitted presentation layouts for each garment containing multiple views (Figures 1 and 2).



Figure 1: Student (Christina Broyles) Layout created in VF PRO®.



Figure 2: Student (Chueh-Chien Tsai) layout created in VF PRO®.

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[4] BSC SL WIKI, "Meet The Students," [web site] <http://facstaff.buffalostate.edu/polvinem/sl/FashionCAD/avatar/avatars.htm> [Accessed August 2007]

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[6] BSC Second Life WIKI, "Fashion CAD Project," [web site]

During the last two weeks of the project students also worked on developing a virtual fashion collection vendor exhibit in SL. Each student created four outfits in addition to the t-

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<http://facstaff.buffalostate.edu/polvinem/sl/FashionCAD/index.htm> [Accessed August 2007]

[7] Robin Woods SL Tutorials; "Robin Wood's AVUV Templates," [web site] <http://www.robinwood.com/Catalog/Technical/SL-Tuts/SLPages/AVUVTemplates.html> [Accessed August 2007]

shirt design they uploaded. They modified Jim Wheeling’s free MGV vendor (Figure 3) and developed a brand logo board that they placed above the vendor exhibit (Figure 4) .



**Figure 3: Student (Fausto Abreu) modifying and setting up vendor exhibit.**

Their virtual fashion collection vendor display (Figure 4) is part of a fashion exhibit on the island. The vendors are set so that the buyer can “buy” everything in each collection for \$0L.



**Figure 4: Virtual fashion collection vendor display in SL.**

## CULMINATION OF THE INITIAL PROJECT

The culmination of this project is the virtual fashion collection vendor display, a fashion show video of each student’s collection<sup>[8]</sup> and the VF PRO®. garment layouts<sup>[9]</sup>.

A fashion runway was constructed for students to use for the fashion show at the end of the semester<sup>[10]</sup>. Students placed their custom logo

[8] BSC SL WIKI, “SL Virtual Fashion Project Fashion Show collections images & Video Links,” [web site] <http://facstaff.buffalostate.edu/polvinem/SL/FashionCAD/collection/> [Accessed August 2007]

[9] BSC SL WIKI, “Virtual Fashion PRO Students Work” , [web site] <http://facstaff.buffalostate.edu/polvinem/SL/FashionCAD/vf/> [Accessed August 2007]

[10] BSC SL WIKI, “Building The Show Ramp,” [web site] <http://facstaff.buffalostate.edu/polvinem/sl/FashionCAD/ramp/index.htm> [Accessed August 2007]

brand into the curtain on the fashion runway for their individual fashion shows (Figures 5 and 6). Locating copyright and license free music was a real problem that we did not consider at the beginning but we really had no real concept of what was going to be possible at the beginning of this project.



**Figure 5: Student (Michelle Kariuk) collection in SL.**



**Figure 6: Student (Katie O’Callaghan) collection in SL.**

After some research we located the Internet Archive<sup>[11]</sup>. Through this site we were able to locate several appropriate musical artists that offered a Creative Commons License that fit the projects needs.

Before the final fashion show, students were introduced to attaching and using the animation override. We made some initial test videos (Figure 7). Some students collaborated together as a team to choreograph the models wearing the virtual garments for each collection, photograph the show, and assist with development of a final video clip of each virtual student collection. Several students used only their own avatar to model their collection, the

[11] Internet Archive, [web site] <http://www.archive.org/index.php> [Accessed August 2007]

individual video clips were then merged into one afterwards. It was a real challenge for all of us and the lines between teacher and student were blurred throughout this project.



**Figure 7: Student (Fausto Abreu) rehearsing for the show.**

All resources, links and assignments for the VF project were posted for the students on ANGEL. Details of assignment expectations were posted along with drop boxes for collecting images. Evaluation is weighted heavily on completion of technical specifications for an introductory project. During the course of this project students contributed to the development of a Web presentation on the BS SL WIKI<sup>[12]</sup> that documents the process as we experienced it so others can use it as a prototype for their virtual exploration.

### **LEARNING OUTCOMES**

At the completion of the initial VF Project, students demonstrated the following skills in a virtual environment: organizational; creative thinking; visual communication; multi-tasking; creative problem solving; collaborative; technology; presentation; and market trend research skills. This project provided an introduction to working and strategizing completion of various assignments in multiple virtual reality settings as well as an opportunity to link existing concepts with new concepts. Students gained experience and introductory skills with: multiple techniques for virtual fashion garment development; presentation and product packaging; development of a virtual fashion exhibit; and virtual fashion show production and presentation.

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[12] BSC SL WIKI, select "The Fashion Project" on the left. , [web site] <http://www.bscsecondlife.info/> [Accessed August 2007]

### **FEEDBACK**

Students filled out a feedback questionnaire at the completion of the VF Project. None of the students had ever experienced a virtual environment before and the majority of them never heard of SL or were familiar with the term "avatar." The majority thought SL was a "game" and difficult to learn at first. Most of the students really liked walking, flying, working with the Appearance menu and thought that uploading files was easy. From my observation as the instructor, the organizational skills required to develop and coordinate multiple files for fashion outfits were the most challenging assignment for the students. Students really liked creating the outfits but all were challenged to organize and prepare them for the vendor exhibit. All outfits required a brand name, a style number and a description. Additionally every file needed to have permissions opened so that they could be copied and/or modified by anyone else. Students really liked making the video for the final fashion show in SL and working in VF PRO®. to develop and photograph their designs from multiple angles to create a layouts for their professional portfolio. Fifty percent of the student participants requested a continuation of this project for the fall 2007 semester.

### **CONCLUSION**

Experience with this VF Project led to the realization that multiple aspects of fashion design, development, merchandising, advertising and promotion can benefit from developing custom project simulations in the virtual world. For example, the virtual world would be an excellent environment for simulated development of a virtual business plan, theme, store layout and design, branding, product development and marketing. All the aspects involved in real world production of a fashion show can be simulated in the virtual world as well as fashion product design, development and presentation. The virtual world of Second Life provides students with the advantage of gaining a specialized conceptual skill set from working in a 3D virtual reality environment that is free to access. This open source virtual world will begin to prepare students for emerging employer expectations.

### **THE NEXT PHASE FOR THE VF PROJECT**

Technical goals for the fall phase of this project include development of more intermediate teaching materials and the addition of Poser for

expanded virtual experience. Secondary phase goals for SL and VF PRO®. include more advanced garment development and show production and perhaps even some store layout and design.

The primary teaching goal for the next spring 2008 semester phase of this project will be to extend this project to include fashion students from other institutions to develop international cross campus SL design teams that will work together in SL to develop and present their collections.

### **VISIT THE VIRTUAL FASHION EXHIBIT IN SL**

To visit the student exhibit in SL join the SUNY Buffalo State Guests group. Once you have joined the group search for Buffalo State region on the map and teleport over.

### **AUTHORS BIO**

Elaine Polvinen, M.F.A. (SL:Finn1 Flintlock) is the Coordinator of the Fashion Textile Technology Program at Buffalo State College. Primary research interest is digital course development for emerging fashion-related technologies.

# CeaseFire ISLAND – life in the hood

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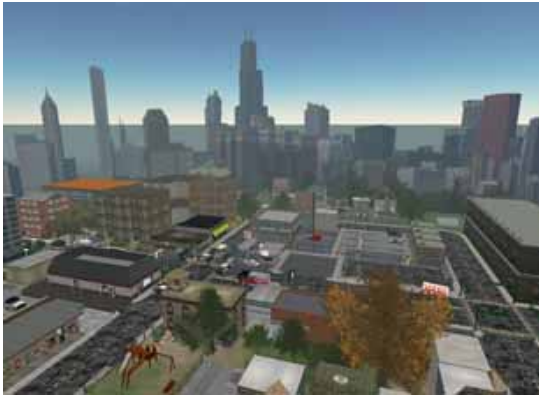
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## ABSTRACT

CeaseFire Island is the answer to Grand Theft Auto. Instead of rewarding violence, former gang members are trained in how to stop real killings.



**Figure 1. CeaseFire Island**

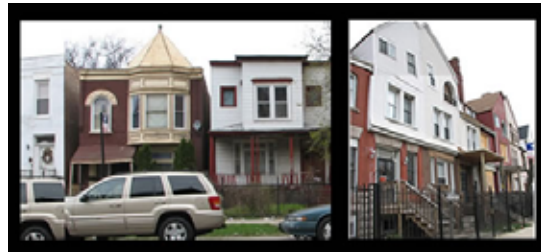
A team from the University of Illinois at Chicago School of Public Health, CADE has created this unique training environment in Second Life (SL) to leverage and expand the CeaseFire training program. CeaseFire, an initiative of the Chicago Project for Violence Prevention, is a strategic community-based effort to stop shootings and killings through street-level outreach, public education, and community mobilization. The training curriculum is heavily driven by scenarios and role plays that are illustrative and evocative of the situations that CeaseFire workers encounter in their day-to-day work out in the streets of the community. CeaseFire Island will allow “Violence Interrupters” (VI) and community “Outreach Workers” (OW) across the country to safely practice responses to these scenarios, while being observed, coached, and corrected. Virtual Worlds will be used to save real lives.



## THE PROJECT

The initial challenge was to develop an Island that replicates the look and feel of a representative neighborhood where typical CeaseFire activities take place. Since CeaseFire has its roots in Chicago, we decided on typical African American and Latino urban “hoods” with the city as a backdrop (Figure 1).

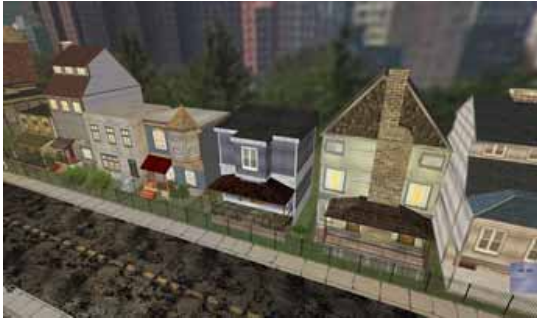
CeaseFire staff went to actual target sites and took photos that became references for building designs (Figure 2) and textures in SL. The entire build was completed in three months using six builders and two scripters.



**Figure 2. Reference photos**



**Figure 3. Sketch based on reference photos**



**Figure 4. SL Build based on above**

### THE AUDIENCE

Most CeaseFire case workers are former gang members. The two main groups are “Violence Interrupters” and “Outreach Workers.”

Violence Interrupters (VI) try to anticipate situations that lead to violence, using their street credibility (“street cred”) to keep their finger on the pulse of the community, gather information on how a situation might escalate, and find ways to cool it down. Often the potential violence is retaliatory - someone may have to pay with his or her life if the VI doesn’t stop it. Outreach Workers (OW) work with high-risk individuals who want to change not just their behavior, but their life as well. OW’s work with them to teach them life skills.



**Figure 5. Role-playing a gang member**

About 99% of the VI’s and 80% of the OW’s have been in prison for violent crimes; some have served more than 20 years. Many of the VI’s were top-tier gang chiefs or shooters. Most have no formal employment experience and very limited or no computer skills – they are on the other side of the digital divide.

Some of the Outreach Workers have completed college, including a few with Masters degrees. These represent driven individuals who have made bad decisions.

### THE GOALS

In short, the goal of CeaseFire Island is to help train its workers in the skills it takes to anticipate and prevent violence. The virtual environment will enable CeaseFire workers both to practice these skills in a realistic environment and to train new workers at any CeaseFire site in the country. Additionally, when these workers train others in the CeaseFire method, they strengthen their own skills as well.

In SL, VI’s learn how to cool down a hot shooter and stop a shooting or how to mediate between two groups in conflict (Figure 6).



**Figure 6. Violence Interrupter**

OW’s learn how to introduce themselves to prospective clients and learn how to build trust as well as how to create a personal development plan with clients as their relationship deepens by having simulated experiences in SL (i.e., virtual home visit, virtual office visit, virtual banking, etc.).

Although the primary mission in the training is to stop shootings and killings, the goal of virtual CeaseFire is not just reactive training, but also proactive in the form of teaching life skills. In the long term you can’t follow people around all the time and prevent possible violence.



**Figure 7. Fast-food restaurant**

CeaseFire training involves both behavioral and attitudinal change. For most of these former gang members, the unknown is frightening. Many have been told their whole life that they are incompetent and stupid and have built defenses against that. They often are uncomfortable when confronting the limits of their abilities. Most have learned skills that helped them to survive in the environment in which they grew up – an environment that was often not a nurturing one. There may have been violence, substance abuse, or neglect. And when there was a loving and caring parent or parents, that parent may have been overwhelmed with the hardship of supporting a family with marginal resources. Many had to raise themselves and had no one to help them with life skills.

Society at large expects most people to know what is appropriate at a work environment, how to behave in a restaurant (Figure 8), to get help for themselves, identify resources, negotiate bureaucratic processes, and develop healthy, balanced and respectful relationships.



**Figure 8. Developing life-skills**

So, one of the goals of this SL training is to help

this population to develop these life skills, moving them from high to low risk. The virtual environment is ideal for a safe place to practice and achieve these skills so that they can feel good about themselves and achieve goals through peaceful and not violent means.

## THE METHOD

Guided role playing in the virtual world can help to achieve the above mentioned goals – both violence prevention in the form of immediate interventions and prevention in the form of relationship building and life skills.

Second Life provides a virtual platform for CeaseFire trainers to engage trainees and act out scenarios, practice and discuss them.

Violence prevention is traditionally very high stress conflict management situation. The Virtual World is removed from the face-to-face interactions which has several benefits. First, even though one can “experience” high-risk situations, there is no real danger in a virtual environment. You can brandish a virtual weapon without the real danger of getting shot. Second, it allows one to take advantage of the abstraction of the Virtual World to unpack violent choices and violent behavior. Third, it allows situations to be observed that are not observable in field conditions.



**Figure 9. Practice in a safe environment**

VI’s can only operate because they have “street cred” and can be effective in a way that others cannot be. Additionally, because of the sensitive nature of the work – one in which people are often involved in illegal, highly prosecutable activities, including homicide – trust is central and outsiders would not be welcome. An observer would likely be seen as a threat, possibly with the authorities. Therefore, there is

no safe way to capture or evaluate the interactions.

Because there is no reliable way to hold the VI's accountable for the intervention, they cannot get feedback on their behavior or skills. In the Real World, the only measure of success is the outcome – whether someone got shot or not. In the Virtual World, not only can the scenarios be observed, but they can be recorded and discussed at any time.



**Figure 10. Steet Corner on CeaseFire Island**

## CHALLENGES

Most of the target audience are not skilled with computers and many are afraid of them. They are often fearful of making mistakes and looking foolish. What would it do to their reputation that people say that they can't even sign on to a computer ... something a seven year old can do? It's the unknown that causes anxiety.

Because SL looks game-like, the target audience shows more interest than if you just taught computer skills. Just the act of getting an avatar, changing the look, learning basic movements and generally, using the technology, is training in itself. This is also a way to teach them to embrace the technology. As they start to feel more comfortable with it, they can use both the meta-computer skills and the in-world training to move from SL to a job search.

## IN CONCLUSION

Virtual world training can take many forms and have varying degrees of success. We all know the power of virtual worlds, but often don't understand exactly how to harness it and make it productive. The CeaseFire Virtual Worlds project is an ideal candidate for using the extraordinary capabilities of this unique

environment. And success in this project translates directly into tangible and meaningful results – namely, lives being saved. That is something that everyone can *really* feel good about.



**Figure 11. CeaseFire Island neighborhood**

## ACKNOWLEDGEMENTS

Many thanks to the fine people at the Chicago Project for Violence Prevention for their kind support in this project. They include: Gary Slutkin, MD, Executive Director; Candice M. Kane, PhD, Chief Operating Officer, Elena Quintana, Ph.D., Director of Evaluation; and Amanda A. Geppert, M.P.H., National Partnership and Technical Assistance Coordinator. For more information on the projects, see <http://www.ceasefireillinois.org>.

## ABOUT CADE

The Center for the Advancement of Distance Education (CADE) is a self-supporting unit within the School of Public Health at the University of Illinois at Chicago. CADE brings innovative technologies, such as games and simulations, to a wide audience both in the field of public health and beyond. CADE specializes in unique, integrated, user-centric solutions. For more about CADE's work in virtual worlds, see <http://www.advancedrealities.com>.

# Second Life as a Possibility Space

Vicki Suter

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## ABSTRACT

Second Life's open architecture offers support for self-generated social structures and built-in infrastructures for creating and distributing learner-created content, opening a new approach to design of learning environments as "possibility spaces". This helps learners see the world (real or imagined) not as a given, with rigid constraints limiting imaginations and energies, but as a design space—resulting in creative thinkers and mindful learners. How can designers achieve a balance that leaves room for the possibilities, yet provides enough structure to prevent the space's degeneration into a sandbox littered with incomplete objects and anarchic chaos which can intimidate and repel newcomers?

## INTRODUCTION

One of the unique strengths of Second Life as a collaborative virtual learning environment is its support for the emergent properties of learning, defined here as a social practice involving doing and being, rather than as an individual process of knowing. Learning environments organized around a deterministic approach to design (highly structured traditional instructional design) or even a more constructivist systemic approach to design (where learning is seen as a process, with methods chosen by designers to reach predefined goals) cannot support these emergent properties (Kirschner, Strijbos, Kreijns, & Beers, 2004).

This case study will introduce the efforts of Pepperdine University's Graduate School of Education and Psychology's (GSEP) Malibu Island Design Team, a team of students and faculty responsible for the design of a private island in Second Life used as a learning space. It presents the Malibu Island design, designated in public and private spaces for its residents, which divides the island into the quadrants. The public quadrants house Malibu Coffeehouse, Sprawl Amphitheatre, Notice Hall, Exhibition Pavilion, Educational Exhibit area, and ACM Pepperdine Student Computer Club, and are the only areas

of the island which are modeled on the physical Malibu campus. The other half of the island is preserved for experimental projects proposed by students on an annual basis. This case study will describe the projects that were carried out, spaces that emerged, questions explored and lessons learned as a consequence of the Design Team's current design approach.

Example questions we encountered and are exploring include: How can the activity of design itself be characterized as a learning activity? How can design be approached mindfully? Why did each cadre want a unique space of their own—what is the purpose or need with regard to teaching and learning? Why design buildings with walls and stairs, when one can create phantom objects (items you can walk through), and fly? How much design energy should be directed to aesthetics and fun? How do people vary in their experience of the sense of place and presence?

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Vicki Suter (Wendy Widget) is a third-year doctoral student in the Graduate School of Education and Psychology at Pepperdine University. Suter is a member of a research team exploring design opportunities in multi-user 3D virtual worlds as learning environments. Suter has over twenty years experience in coordinating academic computing technical projects and programs in higher education, developing strategic plans for a wide range of organizations, and conducting research on telecommuting, community networking, distance education, and e-learning, including a tenure as Director of EDUCAUSE's National Learning Infrastructure Initiative.

Lani Fraizer (Santi Pink) is a doctoral student at Pepperdine University's Graduate School of

Education and Psychology, with research interests related to youth leadership, workforce development and social networking. A graduate of Carnegie Mellon University, she holds degrees in Information Technology Management and Educational Leadership, and an undergraduate degree from California State University Sacramento in Psychology, with concentration in Computer Science.

# Before Teaching On Second Life Be A Student

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(SL: AureA Memotech)

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## ABSTRACT

If as educators we want to exploit the pedagogical perspective of emerging interactive technologies, meet student expectations for deep digital engagement, motivate, customize the experience to each student's unique needs and promote the transfer of learning to the practical reality of everyday life, we will find in this paper some similar point of view to our thoughts and some aspects to consider make it possible.

If you are already a teacher of the 3D Virtual Worlds Generation, use a well-designed immersive environment populated by avatars and interactions that provide opportunities to engage interest, to generate meaningful learning, and to apply it in ways that would transfer to real-life situations, why are you reading this?

If you think that the better learning setting is a large or small lecture classes, please read this paper no because I have something to teach you but, consider that maybe you don't use the new technologies because you don't know how to use it.

## INTRODUCTION

Are trainers and trainees from totally separate worlds? Digital natives (Prensky, 2001) who have grown up in a habitat where the web and games are givens, not new technology, are the next generation. They are living in an easy access to knowledge and technology, from the imposition of having to go somewhere to get knowledge from someone. Can be classroom and traditional pedagogies be appropriate for them?

Digital Natives, students from K through college, have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age.

Digital natives often bring a deeper understanding for the capabilities of the virtual world that significantly enhances the effectiveness of the in-world learning experience (slbespractices2007).

Digital immigrants can immerse in their world, but have an uncertain purchase. It is the world of the future, a world which is theirs to inherit.

## BE A GAMER, MY TEACHER

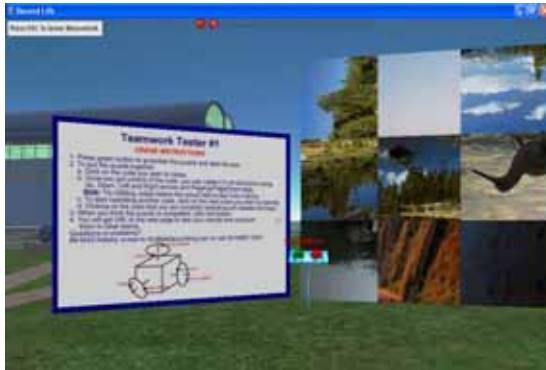
The intrinsic characteristics of the highly interactive virtual world need a powerful shift in the learning/teaching process.

Although Second Life is not a game, when a digital native goes in, he thinks like a player and refers to it like a game. This is because the similar features of Virtual Worlds with games: rich graphics, realistic simulations and imaginative alternate realities. Avatars can be human, animal or anything imaginable. Users have freedom of movement, moving their avatars through virtual landscapes using a computer keyboard and a mouse.

The difference with a Massively Multiplayer Online Game, for example World of Warcraft (WoW), is that Second Life doesn't feature a theme or gaming objective and its environment is completely user-generated allowing users to upload original content.

Second Life can host a game, but is not a game unto itself and game-based learning activities can be embedded.

We can find puzzles in [Education Island \(120,114, 25\)](#) teaching us how to use avatar control.



“Primtionary” is a place where our avatar can learn to build in Second Life like in the game Pictionary.



[Gold Rush](#) is a simulation game based on the California Gold Rush experience. The game works in conjunction with study of California history, specifically the Gold Rush. Students are able to stake claims, claim jump, experience risks and rewards, create entrepreneurial businesses and develop social relationships. Students form mining teams and work together to acquire the maximum amount of gold in the time allowed. In addition, all players must complete mandatory tasks prior to the end of the game in order to qualify as a winning team. Choices they make as a team allow them to move closer to successfully winning the game. It was envisioned that students use this tool to

ARG: Interactive narrative that uses the real world as a platform, often involving multiple media and game elements, to tell a story that may be affected by participants' ideas or actions.

enhance the classroom learning about the intricacies of life during the gold rush.

Virtual spaces can generate hybrid environments for the interaction of people and computers: [Alternate Reality Games in Virtual Spaces](#)

For example, Deutsch Post is using Post Island in Second Life (<http://secondlife.deutschepost.de/>) as a game scenario, where users have to find a mysterious stamp.

Design an alternate reality game for a learning activity in Second Life could let us motivate and engagement to our students dropping clues, finding paths to discover and follow, linking it with web 2.0 tools, and including elements of an LMS, students would be logging in to hand in assignments, explored class-related materials or share virtual resources, as well as interact with other students and with instructors not only synchronous but asynchronous.



As we create new connections and interactions with these emerging technologies, we are defining new spaces for learning. Players learn through active engagement with software and each other as well. As a player you create, rebuild, modify and teach other players in the process: the interaction occurs through and around the game, as a player, a learner and a teacher.

Understanding the needs of today’s students and looking into incorporating elements of online gaming into online learning environments, with a sense of pedagogical theories, makes possible virtual worlds of learning.

**TALK THE STUDENTS’ LANGUAGE**

Wikis, blogs, social networking, bloghud, podcast, RSS, Blogger, Flickr, MySpace, YouTube and Wikipedia are some of the tools of the web 2.0 and communicative tools of the Digital Natives.

Second Life is an excellent tool for gathering individuals to collaborate and create together, to share ideas, work with models and simulations, analyze data from multiple sources combining tools from Web 2.0 as image and video sharing services, online calendars, voice systems, social networks platforms. It is the conjuncture of computers, networks, interactive services, lifelong learning and new tools for human interaction, means that teachers will have to reinvent themselves.

For users unfamiliar with online gaming, the initial introduction to Virtual Worlds can be particularly confusing.

The impossibility of teaching (Felman, 1982) now is more real than when Shoshan Felman described in his essay that learning can never be reduced to the way information and ideas are structured for communication.

Never before have users had many so options to participate, publish and share online. For digital Natives with significant experience in the use of technologies outside of their formal learning, it has tremendous potential (Prensky, 2006) to enhance the opportunities for learners to collaborate and generate new knowledge or build expert domains in a community of practice.

Teachers have to avoid focusing on the content of the communication and understand and assimilate the complex internal world of the students in a learning process. As Felman indicated, learning is not a simple one-way read from ignorance to knowledge.

Web 2.0 is web-based technologies that allows a 'read/write' approach to the web and enables the learner to be both a consumer and producer of content and services.

In this type of reality, learners are co-learners and co-authors, and SecondLife makes the educator identity more complicated not only for the opportunities for teacher-student socializing (Robbins, 2006) but, the role teachers play can be inverted.

These technologies have great potential to change learning, communication and publishing practices in education as they are already in corporate environments. Students today expect technology to be a natural part of any learning

environment because, it has been an integrated into their lives.

To become meaningful, online content needs to leverage the social ecology that drives networked interaction. An online learning environment, whether an Internet-only experience or the complement to an off-line course, must give participants the tools to actively engage in the construction of their experiences. It is not enough to simply absorb the content and then reiterate it. (Herz, 2001)

Meet the needs of the new student because if you give an answer to their needs you will enhance their motivation.

The students of today want to be protagonist.. They want importance and notoriety. The design of a learning activity can't ignore this.

We can translate their needs in high degree of interactivity, online communities for collaboration and communication, instant feedback, rewards systems, and prominence.

The keys to the learning process are the interactions among students themselves, the interaction between faculty and students, and the collaboration in learning that result from these interactions (Pallof & Pratt, 1999), frequent student-faculty contact in and out of class is the most important factor in student motivation and involvement (Regalbutto, J. 1999). Second Life provides the environment to make this possible, but not easily.

Combining elements of current asynchronous and synchronous learning environments, coupled with characteristics of virtual worlds, could lead to big strides in educating the next generation of students.

## CONCLUSIONS

I am not suggesting that games in 3D virtual worlds like Second Life are necessarily the right choice for a learning activity. But we must consider which one is the real key for success in games, what makes it motivational, deliverable, sustainable and learning, if we research and analyse them we will notice that is all about design.

A little bit of perspective, characterisation, feedback, immersion, graphics and playability, and designing with learning objectives can

strengthen the learning process, meet and understand the needs of the new student.

Teachers have to learn how to create far greater levels of interactivity, not just between users, or between users and the Internet, but between complementary online services and web services, virtual worlds and web 2.0 tools.

As teachers, we must consider the benefits of some of the functionality of an LMS combined with all the interaction, social, and community building opportunities of a virtual world. We will have to put things straight from a pedagogical perspective, designing the interaction with people and with the environment.

A learning activity in a 3D virtual world could be researching in a virtual library with a collection of resources (notecards or books) that links to the web, But if that resource can be found in a web page, why not let learners build their own knowledge? For example discovering a mystery being the main character of a learning story as an incentive to login and interact with new people and learning?

The design of the learning activities has to be integrated in a constructive way; comprising the kind of socially contextualized learning to which young people live with as they use PlayStations, Wii, videogames, blogs, podcast and myspace.

For designing learning activities using Second Life, educators must learn how to use the communicative tools to improve the learning process, tools that digital natives are used to.

Before considering Second Life as a learning environment we must be fully immersed and understand the shared space, the best way is being a student ourselves not only for being acclimatized but, considering pedagogical and instructional design in our subjects using this new tool.

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## **ABOUT THE AUTHOR**

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# Appalachian Tycoon: an Environmental Education Game in Second Life

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## INTRODUCTION

Appalachian Ohio counties, including Meigs County and Athens County, are facing challenging environment problems, particularly water, waste, and land issues. For example, being a traditional coal mining area, Appalachian Ohio has experienced surface mining-related problems such as acid mine drainage and soil erosion.

On all critical local environmental issues, a well-informed public is important to environment protection in these rural Appalachian counties. We decide to promote awareness of water, waste, and land issues first among high school students. Since they need to learn environmental knowledge in the environmental science class, we can integrate the local environmental issues into their course. However, topics in environmental science such as acid mine drainage are sometimes hard to learn for high school students. To enhance the learning effect for high school students, we propose to apply computer gaming technology to teach them environmental knowledge.

Much attention has lately been given to the connection between video games and education. For example, Federation of American Scientists found that video games can reshape education ([http://seattletimes.nwsources.com/html/education/2003309887\\_videogames18.html](http://seattletimes.nwsources.com/html/education/2003309887_videogames18.html)). They call it “the next great discovery, a way to captivate students so much they will spend hours learning on their own”.

Among the various game categories, three-dimensional Online Virtual Worlds are one of the most powerful forms of game-based

learning. Three-dimensional Online Virtual Worlds such as Second Life (SL) (Rymaszewski et al., 2007) support avatar-based communications, a wide spectrum of online activities, and development of various in-world teaching and learning tools. In the past few years, educators in areas such as architecture and law have adopted SL in teaching and learning. We and other educators in Ohio University have also started adopting SL in teaching and learning from 2006, and have used SL in several computer science and English classes in Ohio University (Liu et al., 2007; Liu, 2006; Keesey, 2007).

We have developed an environmental education game for high school students, Appalachian Tycoon, in SL. It aims to let students increase environmental awareness through a fun game. We have tested the game first among more than 20 high school students, and got promising results from their survey answers.

## THE APPALACHIAN TYCOON GAME

### *I. Design*

The objective of the Appalachian Tycoon game is to let players increase environmental awareness through a fun game. The game is designed to specifically simulate stream pollution. There are a variety of sources for stream pollution including industrial discharge, agricultural activities, and household contamination, which are all taken into consideration for designing the game.

The Appalachian Tycoon game is a single-player game in which the player serves as the user of the stream bank, which is initially

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grassland. Initially the player is given 1000 points (representing money). The player plays the game by investing the money in developing the stream bank. The time to play the game is limited, i.e. 200 time units. The goal of the player is to maximize both economic and environmental benefits from the investment, i.e. to gain a score as high as possible, in the limited time.

The player currently has six land use options: surface mining, power plant, commercial farm, organic farm, residential land, and planting trees. Because the game emphasizes environmental awareness, those environment-friendly options such as organic farming tend to bring in a higher score than other options.

After the player chooses an option, points will be deducted from the original score and the amount will depend on the cost of the option. For instance, there will be more points taken away for surface mining than for a tree farm because surface mining requires more investment.

After the initiation stage, the player will start to gain points and the amount will depend on the economic benefit that the option brings. The player will also get penalty points or bonus points, which are based on the environmental impact that the option causes. For example, a power plant will bring more economic points than an organic farm, but the former will receive penalty points because it causes pollutions while the latter will receive bonus points since it is beneficial to the environment.

Although the player will lose points due to the environmental hazard some land use options cause, he or she can still gain some points back if some remediation measures are taken. For instance, reclamation can be chosen to reduce the negative impact of surface mining and therefore the player will get some award points. The possible remediation measures are also provided to the player throughout the game process.

Additionally, the two sides of the stream bank can be used for different purposes. As a result, the interaction of the two land use options might cause additional problems or relieve the existing problems, and therefore brings in more penalties or bonuses. For example, if the player chooses

surface mining on one side of the stream and building a house on the other side, then he or she will receive extra penalties because living next to a mine causes higher health risk.

As the game proceeds, the player will stay informed how many points he or she has gained or lost and why. To get a good result in the game, the player has to know the effects every land use option has on the environment, and they can also see these effects in the game. So the player can learn about environmental issues unconsciously by playing the game.

## II. Implementation

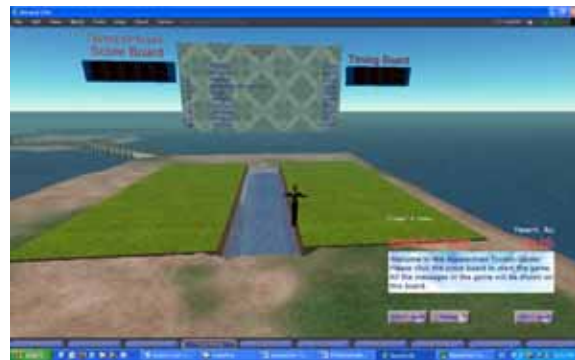


FIGURE 1  
THE 3-D GRAPHICAL USER INTERFACE OF APPALACHIAN TYCOON

The Appalachian Tycoon game is developed in SL using Linden Scripting Language (LSL). The 3-D graphical user interface of the game is shown in Figure 1. The game consists of six main objects: Scoreboard (shown top left), Timingboard (shown top right), Heads-Up-Display (HUD) (shown bottom right), Left Bank (shown as a grassland), Right Bank, and Stream (including fish). The game also consists of dynamic objects (e.g. power plant), which will be dynamically created and deleted during the game. Their functionality are listed below:

- **Scoreboard:** Its main role is to calculate and display the real-time score during the game.
- **Timing Board:** The timing board simply displays how many time units left during the game. According to how the player builds power plants, farms, etc. on the banks, there will be some reward or penalty points given to him every time unit.
- **HUD:** HUDs help players enter/change their names via a virtual keyboard, and start/end/reset a game. During the game, the HUD

will display the informational messages regarding the game status to the player. Those messages tell player how many points they are awarded or taken off for each action on the banks and explain the effects caused by the action.

- Left/Right Bank: Once the game starts, player can build power plants, farms, etc. by clicking on the bank. When player chooses to build something, the chosen dynamic objects will then be rezzed from the bank's inventory.
- Stream (including fish): The stream (including fish) is essentially a visualization of how the current building structures on the bank affect the environment. If the stream's color is clear, and fish swim freely in the stream, that means the environment is protected properly. If the stream's color is turned turbid and fish cannot move or disappear, that means the environment is currently polluted.
- Dynamic objects: When a dynamic object is created, it will send a message notifying the scoreboard to update its award/penalty points per time unit and another message to update its informational message on the HUD. Finally, it will send appropriate message to the stream to update its state.

To make the game more competitive and engaging, we create a high-score board (shown in top center of Figure 1) to show the top 10 highest scores with the name of players who achieve those scores. Essentially, the high-score board is the visualization of the database which stored all the scores played by any instances of the game. We can put two or three instances of the game in-world. They all share the same database, and the high-score board will display the top ten scores for all those games.

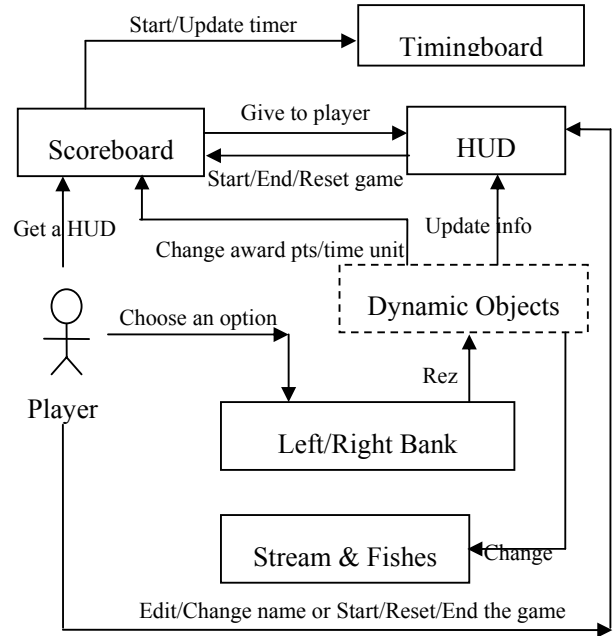


FIGURE 2  
THE INTERACTION AMONG THE OBJECTS IN THE GAME

### III. A Game Play Example

The goal of the game is to make the player aware of local environmental issues, and to teach the player how to solve these issues and protect the environment. In order to illustrate how to achieve such goal in the game play, as well as what the game is like, we will provide a simple scenario of how a player could play the game.

At the beginning, the player clicks on the scoreboard to get the game's HUD and wear it. Upon wearing the HUD, the player enters his nickname, and then switches to the game interface. Player clicks "Start game" to begin the game.

Once the game starts, the HUD displays all the information about the game to player: "The game has started. Please click the bank at either side of the stream to choose an option you want. The game will end in 200 time units. The goal is to get the score as high as possible at the end".

First, the player clicks on the left bank. A list of options appears in the form of a dialog asking the player what he wants to do with the bank. The available options are: 1. Do surface mining (costs 300), 2. Build a power plant (costs 400),

3. Build a commercial farm (costs 100), 4. Build an organic farm (costs 125), 5. Build a house (costs 125), 6. Plant trees (costs 25). To maximize his profit, player chooses to build a power plant (option #2). The power plant gradually appears on the left bank, and after that, its chimney and its pipe are also created. The chimney starts venting smoke into the sky, and the pipe starts flushing out wastewater to the stream. After a few seconds, the wastewater pollutes the stream and the stream turns turbid. Hot steam is also coming out on the stream surface. The big fish cannot move, while the small fish disappear (i.e. die). At the same time, the HUD tells the player that he earns 60 benefit points every time unit for generating electricity using the power plant, but loses 17 points every time unit because the power plant causes problems of overheated water and heavy metal discharge. The player also loses 5 points every time unit for causing the problem of diseased aquatic lives.

After the player chooses an option for the left bank, he also clicks on the right bank to get a similar list of options. This time he chooses to build a house. Parts of the houses start to show up from the bottom to the roof. At the end, a pipe that is used to directly discharge waste from the house to the bank appears. After a few seconds, the stream color turns yellow. Now the HUD tells him that he can get 28 benefit points per time unit from selling the house, but he also loses 10 points every time unit from directly discharging the sewage.

Also the player gets a message from HUD, saying that *“You have to lose 15 points every time unit because air pollution and the heavy metal discharge from the power plant have affected the residents' health.”* It means that different land options may interact with each other, causing the additional problem in this case.

Now, the player wants to take measures to remedy the environmental problems. He clicks on the left bank again. A new option, “Add water treatment”, is inserted to the choice list. The player chooses this new option. A water treatment machine is placed over the pipe. A few seconds later, the waste water coming out from the pipe is now clean (its color turns from dark to bright). The stream also turns clear, the hot steam on its surface disappears, and the

fishes swim freely in the stream again. The HUD tells the player that, by adding the water treatment, he gets 10 bonus points every time unit.

Again, in order to best protect the environment with the current structures on the right bank, the player clicks on the right bank, and choose the new option “Use septic tank instead of direct sewage discharge”. The pipe disappears and a septic tank appears on the right bank. The stream color turns back to bright and the HUD tells him that he gets 10 benefit points per time unit by using the septic tank.

There are about 40 time units left, and player is satisfied with the current options, and does not want to build anything else. He now simply clicks on “End game” to get his final score. A dialog pops up telling him that his final score is 5817.



FIGURE 3  
A SCREEN SHOT OF A PLAYER PLAYING THE APPALACHIAN TYCOON GAME

## PRELIMINARY EVALUATION

Before the Appalachian Tycoon game is used in the real classroom, we have first tested it with more than 20 high school students during the Ohio University 2007 Student Research and Creative Activity Fair. Local high schools students usually attend the fair as a field trip. We held the Appalachian Tycoon game competition during the fair, and gave prize for the players who getting the top three scores. More than 20 high school students attended the competition, and 15 students filled out an anonymous survey.

The survey results are shown in Table I, and Table II. From the table I, we can see that two thirds of the students have never seen or played

any environmental computer simulation before. It means that the Appalachian Tycoon game is the first environmental computer simulation they have ever seen. As shown from the table II, 93.3 percent (14) of the 15 students who played the game thought 3-D computer simulation as a tool for environmental education is very instructive. It means that 3-D computer simulation like the Appalachian Tycoon game will be effective in increasing environmental awareness or teaching environmental knowledge. However, the persuasion of the results is undermined by the size of the sample, which is small.

TABLE I  
THE RESULTS OF SURVEY QUESTION 1

Question	Answer	“Yes, quite a few”	“Yes, just one or two”	“Never”
Have you seen or played any environmental computer simulation before?		5 33.3%	0 0%	10 66.7%

TABLE II  
THE RESULTS OF SURVEY QUESTION 2: “WHAT DO YOU THINK ABOUT 3-D COMPUTER SIMULATION AS A TOOL FOR ENVIRONMENTAL EDUCATION?”

Very instructive	Somewhat instructive	Not very instructive	Not instructive at all
14 93.3%	1 6.7%	0 0%	0 0%

## CONCLUSIONS

We have developed Appalachian Tycoon, an environmental education game in SL. The game attempts to increase high school students’ awareness of local environmental issues. We have started testing it among some high school students. According to the survey results, we found that most of the students playing the game thought 3-D computer simulation as a tool for environmental education is very instructive.

## ACKNOWLEDGMENT

This work was supported by the Ohio Environmental Education Fund (OEEF) from Ohio Environmental Protection Agency.

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# POSTERS

# Emerging “Best Practices” for Campus Builds in Second Life

Chris Collins and Nancy Jennings

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## INTRODUCTION

As educators begin to explore the affordances of Second Life for teaching, learning, and research, new institutions look to the early adopters of the technology for examples of best practices as they plan their own foray into the environment. To that end, researchers at the University of Cincinnati performed an observational study of educational institutions in Second Life to provide a benchmark of current practices. From this study, a set of commonalities across educational institutions with a land presence in Second Life began to emerge.

## METHOD

Linden Lab, the creators of Second Life®, host an education page on their official website located at: <http://secondlife.com/businesseducation/education.php>.

From this page, Linden Lab links to a quasi-official list of educational institutions claiming a presence in Second Life, hosted on the SimTeach.com wiki: [http://simteach.com/wiki/index.php?title=Institutions\\_and\\_Organizations\\_in\\_SL](http://simteach.com/wiki/index.php?title=Institutions_and_Organizations_in_SL)

This list was the initial source for the observational survey and yielded 115 institutions which were searched between April 15, 2007 and May 16, 2007.

## OBSERVED CHARACTERISTICS

The observational study was conducted upon the 51 institutions found to have a land presence in Second Life, with 102 unique variables collected about each institution. The characteristics included:

- Information about the real-world institution;
- Land name, size, and location;
- The size, complexity, and common elements of the build;
- Ease of navigation of the site, including tools provided to visitors

- Audio, video, and web content media use
- Types of spaces created (classrooms, auditoriums, living quarters, etc.)
- Activities taking place at the institution’s site
- Populations served (student, faculty, staff, alumni, etc.)

## FINDINGS

The types of educational institutions who have begun to explore Second Life as a platform for education are varied – large and small; ivy league, private, and public; universities, community colleges, and focused trade schools – educational institutions in Second Life run the gamut. In addition, while the majority of educational institutions in Second Life are based in the US, an increasing number of institutions from around the world have begun to establish their own presence in Second Life, leading to an international community of educators exploring the platform.

From the survey, it also became clear that certain uses for land in Second Life are common across many institutions, while pockets of innovation are occurring at the margins. Common themes, tools, and elements of campus builds can be identified, and use of the space is taking on many forms and serving different populations of users. For example, some institutions seem focused on faculty and staff skill development, while other institutions create spaces primarily for student use. The list of uses, spaces, and elements that emerged from the study will be of use to educators who wish to improve their campus build or future educators who are just in the planning stages of their Second Life implementation.

Further, the researchers experienced difficulties locating and navigating several institutions’ land presence in Second Life, which led to the development of a series of recommendations for future campus/institutional builds to avoid

common mistakes that may hinder visitors to these spaces.

## RECOMMENDATIONS

Based on the results of the study and the researchers' experiences navigating the campus spaces, the following elements and features are suggested for institutions, planners, and developers to consider as they design public campus spaces in Second Life.

**Groups** – The group function in Second Life serves several purposes, including the ability to communicate with members, but groups are also the mechanism used to designate land permissions for campus builds. In addition, the built-in Search tool in Second Life allows users to search for publicly listed groups by name.

Some institutions seemed to have large general purpose groups, with separate groups for building teams or campus designers. Other campuses appeared to create separate groups for individual courses taught in Second Life.

Some key considerations about groups include:

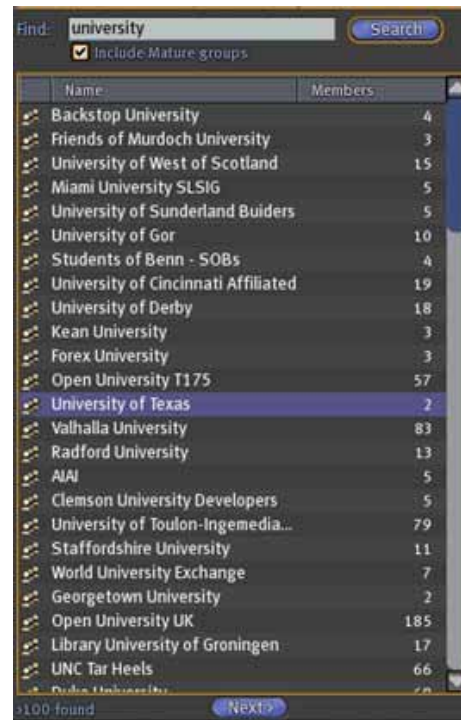
- **Contact Information in the Group Charter:**

It was often difficult to discover a main contact for an institution's Second Life presence, or the instructor of a particular course, but some institutions used the space provided in the Group Charter to list a specific individual and their preferred method of communication (in-world or out). This allowed researchers to easily discover who to contact for more information.

- **Public vs. Private Group Membership:**

When a group is created, the founder has the option to make the membership list public or private. Public membership lists allow users to "click through" all of the members of the group and view their profiles easily. This may be a consideration if participants are concerned about privacy or releasing class rosters.

- **Group Names:** Since group names are searchable, the key words used in the name can play an important role in determining how other users locate an institution or specific course in Second Life. Abbreviations, campus nicknames, or course numbering systems that may not be familiar to a wide audience can hinder the ability of users to locate the institution.



*First results for a search on the term "university" in the Groups tab in Second Life.*

**Land names and descriptions** – Similar to group names, land names and descriptions are also key search terms used in Second Life. Confusing or generic land names and descriptions proved to be the biggest stumbling block in locating an institution's campus space.

- **Use full campus name for at least one plot:**

This will facilitate the ability for users to locate your campus or location in-world. For additional parcels, descriptive plot names were often an aid to navigating campus spaces.

- **Avoid common abbreviations or campus slang:**

For example, the UA campus might be the University of Arizona or the University of Arkansas. School mascots, team names, or other terms familiar to members of the campus community might not be familiar to others.

- **Create meaningful land descriptions:**

Text in the land description space is also included in the search, and can provide space to include additional key words, mascot names, or other descriptive terms to aid users in locating features of the campus.

**Mainland vs. Islands** –There are two types of land for purchase in Second Life.

"Mainland" plots – part of large, contiguous continents created by Linden Lab – can be purchased in as

small as 16 sq. meter increments and are often the starting point for institutions just beginning to explore Second Life. 16 acre islands can also be purchased, and though the initial startup costs and monthly maintenance fees can easily exceed the cost of mainland, institutions have greater control over who can see or visit the space.



Institutions with a greater need for privacy or security may prefer to purchase an island rather than mainland. Increasingly, educational institutions and non-profits are collaborating to purchase islands that are then shared among multiple institutions if funding is an issue. Renting on either the mainland or an island is also an option.

**Logos** – The presence of official institutional logos, branding, and sports team icons help visitors easily identify campus spaces, and in addition to providing PR value, they also lend credibility to the space. Institutional policies regarding the use of such logos may be an issue to discuss with campus representatives prior to use in Second Life.

**Greetings** – Whether through a welcome sign, a notecard delivered to the user upon entry to the space, a line of text communicated to the visitor in the public chat, or a “greeter bot”, welcome messages help visitors understand the purpose of the space they are about to explore, and can communicate important information such as upcoming events, who to contact for assistance, or other information the institution or department may wish to communicate to the public.

**Footpaths** – Flying in Second Life may be the most common mode of transportation within a given space, but visual indicators of traffic lanes can help visitors navigate the campus build and draw attention to points of interest.

Sidewalks, footpaths, or rock trails are common building elements used for this purpose.

**Links to Websites** – Objects that launch a web browser and go to a specific web page are easy to create in Second Life. They provide a simple way to give visitors access to the rich repository of information about an institution already on the web. Common links included links to an institution’s main website, to an online

application, to distance learning programs, and links to more information about the campus Second Life project.



*Sidewalks on the University of Houston “itWorld” island.*

**Campus Map with Teleport System** – Kiosk-type teleport systems that give an overview of the campus space, and allow users to click and teleport to various destinations, allow visitors to easily move from place to place.



*Welcome sign with teleports at “Esperance Island”, the Australian Film TV and Radio School.*

The most helpful systems had kiosks in multiple locations and provided a teleport back to a common, central location near each destination spot.

**Sandboxes and Auditoriums** – The most commonly found spaces were public or private sandboxes (spaces for experimentation and building) and auditoriums (seating for more than 25 avatars with a podium and video screen). A variety of classroom spaces were also encountered, some more traditional than others. Providing sandboxes allows members of the community to experiment with the Second Life

platform, but institutions may want to establish guidelines or policies for acceptable use if the sandbox is to be opened to the public.

**Art Galleries and Living/Office Space** – Nearly 1/3 of the surveyed institutions provided space for students or staff to display art, media, or student projects, and nearly the same number offered “living” or office space for campus residents.



*The Art & Music Center on the Ohio University Without Boundaries campus.*

#### **About the Authors**

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The University of Cincinnati Second Life Learning Community wiki page contains additional information about the exploration of Second Life at the University of Cincinnati.

<http://homepages.uc.edu/secondlife>

# Research Process in Second Life

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## ABSTRACT

Personal experience from an exploratory study on intercultural literacy, personal identity, and learning.

## GROUNDWORK

Take Time to:

- Register – Create Account
- Become Familiar with navigation, search
- Learn communication tools – Chat, IM, Audio
- Explore Regions, Events, Classes
- Literature Search – SL, Topic
- Second Life Terms of Service
- Determine IRB process

## DESIGN

- Research Plan/ Topic
- Locations – where will you do your research?
- Recruit – how will you recruit participants? Classified ads, email, in person, blogs, newsgroup, other?
- Ethical considerations
- How will you conduct interviews? Chat, IM, Audio, VOIP, other?
- Software? Record audio?
- Research info via note card, prim, web page, survey page?
- Participant compensation? Linden dollars, other?
- Apply for IRB approval
- Set up your survey and prepare other data collection materials

## IMPLEMENTATION

- IRB Approval
- Finalize survey and other materials
- Recruit participants
- Conduct research
- Analyze data
- Write paper
- Submit and Publish results

# Using Second Life to Provide Corporate Blended Learning Solutions

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## **ABSTRACT**

Many large organizations use technology-based solutions to decrease the cost of developing and delivering instruction. Some of these organizations use blended learning experiences that combine self-paced online learning with activities that provide learners with opportunities for interaction with other learners and coaches.

Second Life offers an alternative medium for delivery of blended learning solutions. Organizations can establish islands where learners can meet with learning coaches, participate in role-playing exercises, access supplemental resources, or discuss course materials with other learners. This paper discusses ways in which Second Life can enhance organizational learning, as well some of the challenges in using Second Life in a corporate setting.

## **ORGANIZATIONAL BLENDED LEARNING**

The American Society for Training & Development (ASTD) 2006 State of the Industry Report (Rivera & Paradise, 2006) indicates that approximately 36% of the organizations surveyed use technology-based solutions to decrease the cost of developing and delivering instruction. Many of these organizations use blended learning experiences that combine self-paced online learning with other activities, such as web-based meetings and telephone conferences, to provide learners with opportunities for interaction with other learners and with facilitators who can provide personal coaching.

These blended approaches can provide some of the benefits of classroom learning while controlling costs, but telephone conferences and web-based meetings have shortcomings that can inhibit learning. The sequential nature of these media make rapid interaction between

learners difficult. Approaches that rely on telephones lack the visual cues and multi-sensory interactions that fully engage learners.

Traditional classroom training methods for soft skills, such as role-playing, are difficult to accomplish in blended environments. Although online programs can use rich 3D visuals with branching logic to simulate typical scenarios used in sales, customer service, or leadership training, complex interactions can be difficult to specify and costly to build. These issues cause some organizations to use online training only for conveying facts and providing simple procedural tutorials.

Second Life offers an alternative medium for delivery of blended learning solutions. The rich, visual landscape, coupled with the ability to interact with others, provides a level of engagement that many blended solutions lack.

## **ENGAGEMENT IN PRACTICE**

Wenger (1998) contends that learners need “places of engagement” and “ways of having an effect on the world and making their actions matter.” (p. 271). Second Life can be used by organizations as a “place of engagement,” where employees can meet to interact in both formal and informal learning activities. By embedding common cultural images and settings in Second Life, organizations can give learners a sense of familiarity and comfort that can stimulate social interaction. Such interaction is a necessary component to helping participants design a community of practice where they can build their relations and connections within the organization (Wenger, 1998).

## **VIRTUAL LEARNING ENVIRONMENT**

It is fairly easy to envision ways in which the virtual Second Life world can simulate typical organizational classrooms and conference facilities. Instructors and coaches can set up virtual office hours to meet with learners. Meetings rooms and amphitheatres can be used

for discussions and presentations with groups of varying sizes. Posters, signs, screens, and other objects can provide links to websites, videos, and other artifacts that convey information, turning the Second Life site into an educational portal that gives learners access to self-directed just-in-time training consistent with constructivist principles.



Figure 1. A meeting room on Centrax Island.

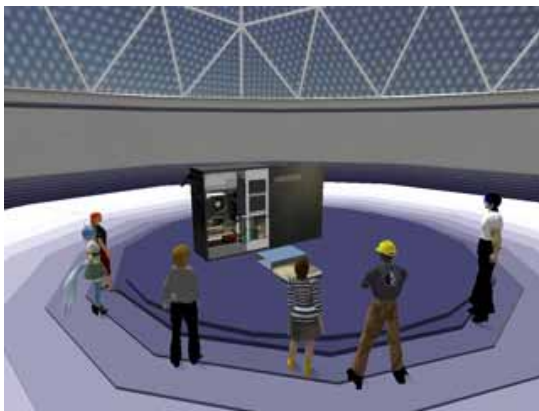


Figure 2. An interactive 3D computer repair tutorial in Centrax Island.

Centrax Island is an example of this type of virtual learning environment. Centrax Island was created by Centrax Corporation as a vehicle to discuss and demonstrate ways that Second Life can be used to provide blended learning solutions. The island includes a 3D office environment, information kiosks, meeting places, a 3D computer repair simulation, and original artwork by the company's graphic artists. Centrax Island is also the new home of a virtual meeting place for the Executive Learning Exchange, a professional organization for

Chicago-area Chief Learning Officers and other corporate learning leaders.



Figure 3. Centrax Island learners watch a video.

### CREATIVE LEARNING OPPORTUNITIES

It would be short-sighted, though, to limit use of Second Life to those approaches that simply simulate traditional organizational training approaches. The virtual environment offers unique opportunities not available in traditional classroom settings.

Researchers at the University of California, Davis used Second Life to simulate the visual and auditory hallucinations experienced by patients diagnosed with schizophrenia (Yellowless & Cook, 2006). During a two month period, 69% of those who completed a survey about the site indicated that they felt that the experience improved their understanding of visual hallucinations. This site is an example of the type of powerful learning experience that a virtual world can offer.

Virtual worlds can enable learners to put on a new persona in a manner that goes far beyond traditional role playing. Consider, for example, the possibilities for delivering diversity awareness education where learners enter as a particular type of avatar to experience first hand the feeling of being "different." Hiding behind an avatar can provide a sense of security unavailable in a traditional classroom.

Gee (2003) calls the type of security that virtual environments offer a *psychosocial moratorium*. By reducing or eliminating real-world consequences, learners can try out behaviors that they might otherwise deem risky. The introvert who remains quiet in the classroom can safely speak out in the virtual world. In a virtual

corporate management course, the neophyte reluctant to role-play in front of more experienced peers may find the courage to act out a difficult coaching scenario with a virtual subordinate. The ability to play out these scenes with real people behind the avatars reacting in real ways can provide a deeper, more authentic learning experience than a programmed simulation or even a traditional role-play.

### **BARRIERS TO ORGANIZATIONAL USE**

In spite of Second Life's possibilities for expanding learning options, there are barriers to its usage in the corporate world. Concerns about security of proprietary information and the openness of the Second Life environment cause many organizations to shy away from using Second Life as anything other than a marketing tool. Using Second Life's security features on private corporate islands, though, can limit access to only the organization's employees, protecting learners from unwanted distractions or inappropriate intruders.

A bigger problem for corporations is the learning curve for those who are not already familiar with gaming and virtual worlds. Second Life, and online learning in general, is not the best option for those who are uncomfortable with technology. Second Life is best suited for those learners who are already computer savvy, with an appetite for novelty and change. Many of today's entrants to the workforce are totally immersed into technology. Those are the workers who will benefit most from what a virtual world like Second Life has to offer.

### **CONCLUSION**

Second Life offers a variety of possibilities for expanding corporate training options. As with any new approach, however, the challenge will be for researchers to identify the scenarios where Second Life achieves greater benefits than more traditional, familiar solutions.

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### **BACKGROUND**

**Kathleen Fortney** is a Senior Instructional Designer for Centrax Corporation and a doctoral student in Instructional Technology at Northern Illinois University. Her research focuses on problem-solving expertise demonstrated by learning specialists in organizational settings.

**Keith Santiago** is the Second Life Development Manager and a graphic designer for Centrax Corporation. Keith, along with graphic designers Ndege Diamond and Katie Van Sessen, created the Centrax Island in Second Life, including the original artwork that appears on the walls of the Centrax Island Pavilion. Keith has a B.A in Interactive Media from the International Academy of Merchandising & Design.

**Centrax Corporation** is a Chicago-based provider of custom learning solutions, including e-learning design and development.

You can access Centrax Island at:  
<http://slurl.com/secondlife/CentraxIsland/128/128/0>

**The Executive Learning Exchange™** is a community of practice that aims to increase awareness of innovative learning solutions and share best practices among Chicago area corporate learning leaders.

# Second Life for Digital Entertainment Technology Education

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## ABSTRACT

A one-semester module analyzed the relationship between digital entertainment systems and societies in which they exist. It was taught to 13 third-year students enrolled in a diploma-granting games programming course. Students had no previous experience on Second Life and used home computers. SL was used for conducting lessons and as the platform for assignments. An online survey was conducted at the end of the semester; 62% of respondents believe class interaction increased, 100% experienced technical difficulties. Key benefits were interaction with professionals from other parts of the world plus practical experiences and development. Network latency and hardware requirements were the main issues.

## INTRODUCTION

The Digital Entertainment Technology (DET) diploma is a 3-year program offered by the School of Interactive and Digital Media in Singapore's Nanyang Polytechnic. This course trains developers in two main areas: games programming and technical direction for visual effects and animation.

Digital Entertainment and Society (DESOC) is one of the modules taught in DET. Its main purpose is to study the relationship between digital entertainment systems and cultural aspects of societies in which they exist.

There are three main topics covered in DESOC: techniques, economics and ethics. The first topic covers the history and evolution of video games and film techniques. The structure and trends of digital media industries are discussed in the economics topic. Finally, the third topic is an introduction to ethical issues such as violent content and its effect on society, games addiction and others.

This paper describes how SL was used to help meet learning objectives for DESOC, and

discusses results obtained from a survey offered to class attendees at the end of the semester. It is organized as follows: the first section explains the class audience and resources utilized; a following section explains in chronological order all SL-related activities for each topic, starting with a familiarization exercise which intended to provide a smooth introduction to Second Life; results and feedback obtained from students are presented in the section titled End of Semester Survey; the author provides a brief analysis of these results in the Discussions and Recommendations section; and finally some conclusions are summarized.

## CLASS AUDIENCE AND RESOURCES

Students are normally required to take this module in their first year. However, for the October-March semester of academic year 2006/2007, DESOC was taken by a small group of final year students. This opportunity allowed for more in-depth exploration of concepts and activities including using Second Life for teaching and learning for the first time in the school.

A total of 13 students between the ages of 19-26, all with no previous experience in Second Life, took the module. They were enrolled in the final semester of the games programming track. Students worked in teams of two or three members for each assignment.

Due to firewall restrictions in the institution, students and the two instructors assigned used personal computers and network connections. Most students had a download bandwidth of 512Kbs at home; only the author and a couple of students had 10Mbps and 2Mbps connections respectively.

## THE DESOC TIMELINE

In order to have the students familiarize themselves with Second Life, the first class exercise consisted of a list of activities to complete in world. Learning topics were

introduced after this exercise; class activities and assignments combined traditional face-to-face and in-world interactions.

### **Familiarization**

As recommended by (Border, 2006), the first exercise was a scavenger hunt in order to introduce Second Life's functionality and activities. Teams were required to take a picture of each step of the hunt and upload it to their blog with a small caption.

The list of activities and items to collect were a slight modification of that by (Border, 2006), mainly to relate the exercise with the local culture and students' background. In particular, a step of collecting a dragon pet was added because the dragon figure is very common in the Chinese culture. Visiting a replica of Nintendo's Mario Bros. game world was interesting because all students were game programmers and gamers themselves.

The teams were asked to write about their impressions and pros/cons of SL as a platform for entertainment. It was found that none of them had major problems creating accounts, navigating the world and completing the exercise. First impressions about Second Life were mixed, some examples extracted from student blogs referenced on (Gonzalez, 2006) are:

- "it's an amalgam of all the different types of entertainment genre/platform."
- "for those who enjoy expressing themselves and to explore and meet other creative people and their creations, SL definitely offers a richly interactive experience"
- "somewhat like a 3D Messenger, but with many more options."
- "can serve as both an entertaining game for kids and adults likewise, yet it can get dull and boring if one doesn't understand the game."

### **Topic I: Techniques**

As mentioned earlier, the first topic covers the history of digital entertainment media and a brief overview of film and scripting techniques. One of the learning objectives was to have students create a short animated movie.

The lessons were organized to start with analyzing early movies and finalize with machinima creation. The first SL activity was an e-lecture conducted in-world. The class schedule was organized so that machinima creation was to be covered at the time when the 2006 Machinima Festival was happening in the Museum of Moving Image in Astoria, NY (Academy of Machinima Arts and Sciences, 2006). As part of the festival, some events were taking place in Second Life. DESOC students and instructors attended a session in which a selection of movies were being screened and film makers were present to explain their creations and answer questions (Figure 1).



**Figure 1.** Students and instructors in a 2006 Machinima Festival session.

For the assessment portion of this topic, the assignment included creating a machinima. Students were free to choose any engine. Out of 6 teams, 4 used Second Life, 1 used Electronic Art's Battlefield 2™ and another one used Nintendo's Legend of Zelda® and Pokémon®. Teams using Second Life reported having difficulties with video capture and creating smooth animations mainly because of network latency, however they also stated the SL community was helpful with providing props and assistance.

### **Topic II: Economics**

The second topic provides an overview of the current trends and basic economics of the digital entertainment industry. It also teaches brainstorming and economic analysis tools like SCAMPERR (Michalko, 1992) and SWOT as explained by (Boje, n.d.) The main learning objective was to design a commercial game and its business model, and implement a prototype. The second semester assignment covered this

objective and was implemented using Second Life and Linden dollars as the currency.

Assignment 2 required teams to:

1. Pick a current trend on the video game industry,
2. Use any brainstorming tool to create an in-world game that deals with the chosen trend,
3. Design the game's business model using Linden dollars, and develop a prototype.
4. Do a SWOT analysis of the designed commercial game.

Presentations and assessment of game prototypes were conducted in-world (Figure 2). Some ideas presented were: an alternate reality game, Second Life Amazing Race, and a multi-user distributed music game.



**Figure 2.** Students doing a project presentation and demo.

### Topic III: Ethics

The final DESOC topic introduces some ethical aspects of the digital entertainment industry. Its main purpose is not to form judgement but to discover ethics issues and initiate discussions.

A lesson on ethical aspects of digital media was organized and conducted inside Second Life (Figure 3). The author's rationale on having this session in-world was to be able to have class trips to SL game and role playing locations. Visiting real games settings (e.g. shooters and hunting games, children roleplaying areas, etc.) would provide a safe, more engaging environment that could initiate and encourage

discussions (as opposed to a traditional, real-life class in a lecture theatre).



**Figure 3.** Lecture on ethical aspects included trips to game world locations.

### END OF SEMESTER SURVEY

All students were offered an online survey at the end of the semester to obtain feedback on the use of Second Life. The questionnaire consisted of nine multiple choice questions; the tool used was SurveyMonkey.com. Nine responses were obtained.

Table 1 shows a change of perception about Second Life (as compared with the familiarization exercise); 66.7% of students describe SL as a 3D virtual world.

**Table 1:** Description of Second Life

	Percent	Total
tool for e-learning	0%	0
digital entertainment tool	11.1%	1
multiplayer game	0%	0
3D virtual world	66.7%	6
3D instant messenger	11.1%	1
other	11.1%	1
Total respondents		9

100% of respondents see enjoyment and fun as an element that Second Life added to classes (Table 2), in fact it was the most popular choice when students were asked to identify the most beneficial aspect of using Second Life for learning and assignments (other choices were: meeting people, creativity freedom, learning by doing, and no real benefit). Table 2 also shows

that all respondents experienced technical difficulties; network latency was the most reported issue during the semester.

**Table 2:** Elements that Second Life added

	Agree	Disagree	Total
Enjoyment	100% (8)	0% (0)	8
Technical difficulties	100% (8)	0% (0)	8
Interaction with tutor	62% (5)	38% (3)	8
Interaction with classmates	62% (5)	38% (3)	8
Total respondents			8
Skipped this question			1

Interaction among students and with instructors was seen as another benefit by the majority of survey respondents (Table 2). On a later question, 50% percent considered themselves and also instructors to be more participative when inside Second Life as opposed to real life lectures.

Finally, Table 3 shows the results of a self-assessment question where students were asked how well they were able to remember concepts taught using Second Life in the module. 1 respondent (11.1%) considered SL to be very ineffective, while 4 (44.4%) believe it was satisfactory and 4 considered it very effective.

**Table 3:** Effectiveness of Second Life for learning

	Percent	Total
Very little; almost don't remember	11.1%	1
Just ok/satisfactory, can describe concepts	44.4%	4
Very well; remember most concepts	44.4%	4
Total respondents		9

## DISCUSSION AND RECOMMENDATIONS

In the author's opinion, introducing Second Life with a scavenger or treasure hunt was confirmed to be an enjoyable and effective way to get students familiarized. It is recommended to relate these first experiences in-world to the local audience's culture and background in order to make it more interesting and engaging.

Because the class audience was a small group of students with programming background, the author believes it was easier to coordinate class activities and resolve technical issues. It is recommended for educators teaching in SL for the first time to start with a group of similar size.

The Digital Entertainment Technology program is a course in which exploring new technologies is important, however utilizing 3D environments for teaching should be justified by whether the tool helps meet learning objectives as several authors have pointed out, e.g. (Bendis, 2007). The value of attending the machinima festival was not just watching a streamed movie but interacting and learning in real time from professionals in other parts of the world. Designing a game business provided students with a practical experience similar to real life, and finally ethics discussions proved to be more interesting and active when conducted in game locations.

## CONCLUSIONS

Second Life was used to support learning objectives in a digital entertainment and society semester module. It was also used as the platform for student projects. Survey results point at using SL to be effective and enjoyable for learning, however network latency was a critical issue faced by students who were all located in Asia. While not a scientific research, these results may be useful as an exploration on the benefits and limitations of virtual worlds for digital media technology education.

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# Library Services on the Teen Grid

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## **ABSTRACT**

In 2006, Eye4You Alliance was an island created on the Teen Grid with the partnership of the Alliance Library System in East Peoria, IL ([www.alliancelibrarysystem.com](http://www.alliancelibrarysystem.com)) and the Public Library of Charlotte and Mecklenburg County in Charlotte, NC ([www.plcmc.org](http://www.plcmc.org)). The aim of the island is to embrace the concept of youth participation by allowing teens to be the primary creators of the island as well as the developers of events with adults to provide guidance.

## **BEGINNINGS**

When Eye4You was first created in October 2006, teens wanted to build right away, like filings to a magnet. While we didn't know what exactly to expect, and were elated by the teens interest and passion, we felt we needed to set some parameters first. We decided to not make the island publicly accessible until more of a structure took place, there were things for teens to do, and to ease up on the 'territorial unrest' that leaving it open for a free-for-all induced. We developed a web presence here: [www.virtualteenlibrary.blogspot.com/](http://www.virtualteenlibrary.blogspot.com/) and worked to recruit other librarians. We wanted to work with a core group of teens that were already in Teen Second Life as builders, so they could help shape the internal and external structure of the island.

## **AFTER A FEW MONTHS**

We developed partnerships with teens and adults and decided to take our chances again to open up the island for public access. We had a few informal events on the island such as a skating rink and present giving tree in December as well as had the video game Harbinger Wars on the island which brought in teens for awhile, until it was clear that other events were needed. Several teens seemed to naturally take the role and interest of being leaders for the island;

builders, scripters, teachers, recruiters, event organizers, and more. We learned to depend on their expertise as well as their interest, as this island was for them and they would participate a lot more, the more they were invested in the project. In the beginning months of the island, we easily got 9,000 visitors on a somewhat consistent basis. Now that we've existed for a year, we get close to 1,000 per day.

## **SPONSORSHIP: SIRSIDYNIX**

Our partnership with the Alliance Library System (ALS), allowed Eye4You Alliance to benefit from a sponsorship through SirsiDynix ([www.sirsidynix.com](http://www.sirsidynix.com)), global leaders in technology for libraries. They decided to sponsor the teen island for a year. We chose to work with a developer with this sponsorship and hired Nubian Bliss, who had worked on the MG with ALS to create the Pantheon Theatre, as well as some other beautiful buildings. Bringing in an adult developer is nothing new to the teen grid, but in our case, it was a bit different since we didn't bring her in right at the beginning of establishing the island. From the standpoint of the owners of the island, she brought some organization to the space. From the perspective of the teens, her expertise and suggestions were welcomed as learning tools, but overall, the majority of teens felt they would have liked to be the primary builders and organizers of the island. We feel that by initially working with a builder, provided a structure that has allowed us more freedom in putting the teens in charge of building the rest of the island. There was a lot of learning from both adults and teens with the partnership of hiring an adult builder to the island! The buildings that came from the time period of working with Nubian (approximately, January 2007-June 2007) included an art gallery, a library, an indoor theatre, a coffee shop, a welcome center, a robotics lab, and park.

We held regular weekly meetings during the building time with teens and adults. Throughout this time period, we also worked consistently to develop further partnerships with other librarians from both public and academic libraries, educators, authors, publishers, schools, magazine editors, and other interested volunteers. A handful of adults wanted to just get a feel for the teen grid, before they purchased their own island, got their background clearance, and stayed on Eye4You for a brief time.

### **CURRENT STATE OF THE ISLAND**

The teens have decided to re terraform the island so that it's more mountainous. The public sandbox remains popular. Buildings such as the library, art gallery, and indoor theatre, will probably be staples on the island for awhile, though these buildings themselves will change from time to time. Both the gallery and library have teen created art work. Resources such as audio books and materials related to programs on the island such as book discussions and NASA's presence, have resources in the library as well. A teen and adult created garden with stained-glass ceiling gazebo where meetings are held and self esteem classes are taught is near a waterfall. We recently had a machinima weekend where teens themselves helped organized and were taught (and helped teach their peers during the weekend as well as through putting ThinC press books together of instructional slides by using the Second Life printing press) a variety of techniques to improve the film making skills through using many different free software options. A partnership with NASA is in the development stages, and the grand opening of the teen created space station will take place in August 2007. Adult volunteers who work with teens in real life, offer programs on the island in conjunction with programs at their rl library. Band performances at a jazz club, tutoring, and a college fair are in the works. Visit our Flickr page: [www.flickr.com/groups/eye4you](http://www.flickr.com/groups/eye4you), our blog: <http://eye4youalliance.youthtech.info>, and slides from machinima weekend for updated information: [www.slideshare.net/hvxsilverstar/slideshows](http://www.slideshare.net/hvxsilverstar/slideshows).

### **REFLECTING**

What makes Teen Second Life a great tool for teens and adults to interact, is that 1) as a participant, you have an enormous range of

choices that can be made as often as one likes and at just about any moment, 2) technical skill is rewarded, and 3) it is a great training environment for the collaboration that takes place in real life (Beck 2004). Giving both teens and adults choices, allows for the roles of leader and learner to constantly shift. Technical skills are relied on to be provided by the teens, though not completely. Adult as well as teen led events are both great preparation for other environments.

While you probably won't see a reference desk on Eye4You Alliance island, certainly no signs that say 'please don't use cell phones while here', or any overdue fines, we still offer very similar library services to my own real life library. For instance, services such as building a community. We do this by engaging teens on the island and allowing them to become invested in the project by encouraging their ideas. We have programs including book discussions, or making machinima. We develop partnerships with educators, authors, and other organizations such as NASA. These are the exactly the same types of activities that occur in my rl library as well as many other libraries that work with teens.

Author Marc Prensky in, "Don't Bother Me Mom-I'm Learning!" identifies five 'levels of learning' in video games. While Teen Second Life is not a video game per se, it shares characteristics that these five levels can be applied to as well; 'how,' 'what', 'why' 'where' and 'whether'. For example, teens not only learn how to navigate around tsl, with the tools provided, but they learn how to control what happens in their world; what a great life-long skill that is already part of many library's mission statements. On the 'what' level, teens learn the rules of the environment and develop their own through discussion and negotiation of the covenant for the island; something many libraries do with their teen advisory boards as well.

While the goal of Eye4You Alliance island is not necessarily to replicate everything that a real life library does, some of the imitation is natural. However, we hope to use tsl as a tool for more enhanced interactivity than real life can sometimes provide. This doesn't mean we're seeking to replace what happens in real life, but perhaps engage visual learners in an environment they might feel more comfortable

in (book discussions that take place with your avatar in an immersive scene from the book), give teens leadership opportunities in a place they might feel more familiar with in getting started to take on such a role, and teaching/learning skills like film editing or event organizing for life long learning.

#### **REFERENCES**

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# BP TRIES SECOND LIFE FOR EMPLOYEE ETHICS AND COMPLIANCE

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## ABSTRACT

A team from the University of Illinois at Chicago School of Public Health CADE worked with BP staff to develop a prototype counseling site in Second Life. This site allows employees to report anonymously on ethical issues to upper management. The combined use of Second Life and business enterprise data capture/management make this a very unique and groundbreaking project..

## THE PROJECT

The challenge was to develop a site where employees can report issues to BP and have anonymity. The content of these issues may range from simple human resources problems to reporting a leak in a pipeline. The entire project was done to produce a prototype because BP Ethics and Compliance Group (ECG) already had a live telephone-based reporting system that worked successfully.

The primary challenge was to create an application that allowed employees to enter the SL through the BP web site, be assigned an avatar with id/password./email address, a case id and be teleported with ease to the counseling site. A counselor would be paged to meet the employee in the SL room and all communication recorded and associated with the case ID. Lastly, accommodations needed to be made to allow the employee to return for more counseling sessions, thus maintaining anonymity throughout the process.

## Steps in the Process

### *Administrative Side*

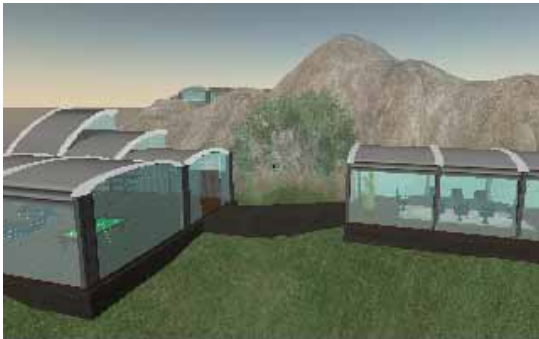
**Build an online Administrator Web Site** that sends and receives information from the resources in Second Life.



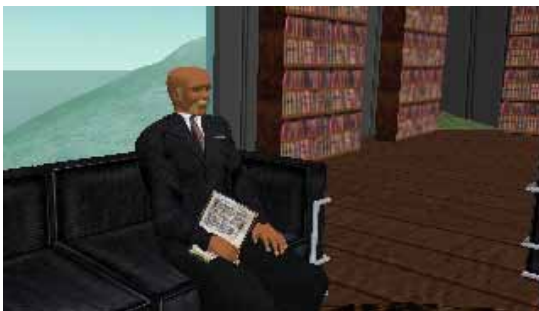
- *Edit User Accounts* receives information from the New Avatar Room and will update the information in the New Avatar page in the Employee site;
- *Create or Edit Rooms* receives information from the Avatar Detector in Second Life and sends information to the New Avatar page in the Employee site;
- *View Logs* page receives chat logs from the Conversation Recorder in Second Life and displays them for later review by Administrators;
- All data is stored in SQL Server, programming done using .NET and C#.

**Build a counseling room** in Second Life where all communication cannot be heard outside the room and employees can use with ease.

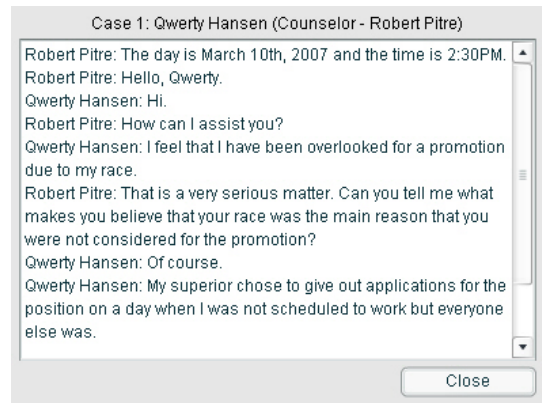
- Include a comfortable and easy to use interface;
- Created an *avatar detection system* that alerts a Counselor (instant message or email) to the arrival of an Employee avatar;
- Created a working *conversation recorder* that captures chat conversation and posts it to a database;
- Included an in-game (in counseling room) tutorial for basic interface (movement, object manipulation, camera movement, and chatting);
- Create a video monitor that streams video to provide training as necessary to the employee;



*Counseling Rooms*



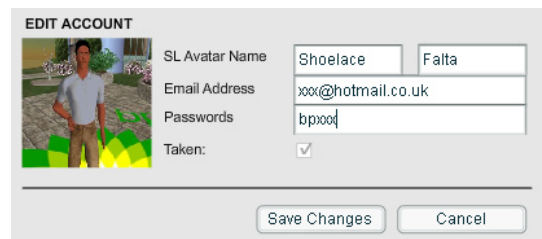
*Counselor*



*Log File Capture of Conversation*

**Build an inventory of avatars**, and associated identifications and island permissions.

- Created 10 original avatar designs (Skin, Shape, Eyes, Hair, Clothing) with modify/copy/sell rights;
- Created easy to use vendors to distribute the avatar designs and send registration info to the BP web site;
- Provided a secure environment through modifying access rights and permissions in Second Life;
- Created a process to allow new avatars into the Island while maintaining Security;
- Created access points to main locations on the Island that can be accessed from within Second Life or from the Web Site.



*Editing the Avatar Information*

### *Employee Side*

**Build an Employee Web Site** that eases the Employee into Second Life.

- Developed a new avatar page that provides the employee with all of the information that they will need to enter and use the counseling service in Second Life;

- Provided a follow-up page that allows employee to schedule another meeting for further discussion of an ongoing case;
- Provided a Second Life tutorial page to provides information to move through the BP counseling environment in Second Life (movement, object manipulation, camera movement, and chatting).

### Creating a new SL OpenTalk Account

Step 1: Download and install Second Life

<http://secondlife.com/community/downloads.php>

Step 2: Select an avatar type



*Employee Selects Their Avatar*

If you would like to register for another meeting within Second Life, please fill out the following form:

**Meeting Request Form**

OpenTalk Email Address

Case ID (Optional)

Counselor (Optional)

*If this is a followup case or you wish to see a specific counselor, please enter that information above. Otherwise, leave those fields blank.*

*Submit Request for Followup Meeting*

### IN CONCLUSION

A great prototype was developed here. However, scale is the greatest difference in this Prototype version that CADE staff developed and the Final version that we CADE staff can deliver. The Final version would boast an increased number of Ethics Counseling Rooms, a stock of 100 avatars to distribute to Employees, as well as Web Sites that can organize the massive amount of data produced by this system.

### ABOUT CADE

The Center for the Advancement of Distance Education (CADE) is a self-supporting unit within the School of Public Health at the University of Illinois at Chicago. CADE brings innovative technologies such as games and simulations to a wide audience both in the field of public health and beyond. CADE specializes in unique, integrated, user-centric solutions. For more about CADE's work in virtual worlds, see <http://www.advancedrealities.com>.

# The New Face of emergency preparedness training: using Second Life to save first lives

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### ABSTRACT

A team from the University of Illinois at Chicago, School of Public Health CADE (Center for the Advancement of Distance Education) has created a training archipelago called Public Health Preparedness Island. The island chain offers a variety of urban and rural environments with customized buildings, objects, and scripting tailored to emergency scenarios ranging from pandemic influenza to bio-terrorism and dirty bombs. Training exercises began in late 2006. Current training is primarily in the form of facilitated exercises allowing federal, state, and local workers as well as emergency volunteers to conduct a wide variety of virtual operations in support of Planning, Training, and Evaluation. There are terrific advantages in using Second Life to conduct many exercises virtually instead of live or in other traditional training modes (like tabletops). We predict that within two years a large portion of Emergency Preparedness Training exercises will be conducted virtually.



-Bird's-eye of a Quarantine Exercise on PHP Island

### PROJECT SUMMARY

The challenge was to develop training environments that could be used for a wide array of emergency preparedness training exercises and be rapidly altered to reflect real-time decision-making. At the same time, we developed curriculum and techniques for facilitating exercises that take advantage of the unique characteristics of virtual training. Lastly, we created a system for watching and recording virtual exercises that allows exercise participants to be active SL operators or passive webcast viewers. Custom scripting allows us to shoot cinema-quality movies of the exercises and save layouts of buildings and objects for instant recall. Assets created in this way become part of a jurisdiction's emergency inventory for both pre-event and just-in-time training.

We drew heavily on lessons learned from military applications, but built the core of the system on preparedness training – especially lessons learned from actual events (like Hurricane Katrina) and live exercises (like Topoff). The training system integrates NIMS (the National Incident Management System) and ICS (Incident Command System) structures and follows HSEEP (Homeland Security Exercise and Evaluation Program) protocols. The exercises themselves are designed around Homeland Security and CDC compliance objectives.

The primary island chain has expansion bridges for jurisdictions to own their own training islands and link with PHP Island. All islands are restricted access.

## WHY SECOND LIFE?

In 2005, CADE brought together developers and facilitators with experience in modern learning technologies to create a new kind of preparedness training that could take advantage of “state-of-the-shelf” products. One area that held particular potential was virtual environments. A number of CADE’s 70+ employees had previous experience with virtual environments for military and industrial application. Experimentation began in earnest, using a variety of virtual engines and, while many had unique features or advanced fidelity, few offered cost and performance suitable to the Preparedness community.

When Second Life entered its 2006 deployment, its function and fidelity reached a benchmark that made it an excellent choice for live training exercises. Some of the advantages:

- Suitable function and fidelity for procedural, decision-making, and critical-thinking training (limited communications training – changing now with voice, not suitable for manual dexterity-based training),
- Potential for custom scripting to support training algorithms. (i.e. Res-boxes, Bots, Control Panels, and Smart Objects),
- Easy access, installation, technical support, and customer service,
- A broad population base of participants suitable for volunteering, role-playing, and even expert participation,
- Cost-effective compared to many Emergency Preparedness Alternatives.

One of the greatest hurdles was and remains overcoming bias for more traditional Emergency Preparedness Training practices. Let’s compare with two of the most common traditional alternatives.

### **Traditional Alternative: Live Exercises**

Since 9/11 there has been a dramatic increase in the number of live exercises run for Emergency Preparedness Training. This is a wise and necessary practice but there are some drawbacks that virtual environment training can solve.

**COST** – The cost of live exercises can be very high. Topoff 2 (Top Officials Live Exercise) cost 16 million dollars for 4 days of training involving 8500 participants from 25 federal

agencies, 2 states, 2 major cities (Seattle and Chicago) and Canada. This was no small undertaking. The cost of travel, locations, developing and running exercises as well as the cost of staff days for training can be enormous. And even though the broader benefits of Topoff go well beyond the training goals, the exercise suffers from the same inherent cost-benefit problems as other live exercises in Emergency Preparedness.

**NEGATIVE ECONOMY OF SCALE** – Because the nature of disaster is to affect a mass population, emergency response is aimed at stretching the work of a few trained responders to the benefit of the largest population. So live training requires a large number of volunteers to train a small cadre of responders. Most of the participants in live exercises are volunteers representing the mass public. In the virtual environment, volunteers do not need to be brought in by the busload in order to create an effective exercise.

**CROSS TRAINING** – Many emergency responders need to be trained in multiple roles for preparedness. It is likely that the scale of an event will draw the same pool of responders into different positions depending on need. Live exercises allow participants to immerse in one role. But to cross-train, repeating the live exercise so that participants can play musical chairs doesn’t make sense. A virtual exercise can be replayed ad infinitum with participants performing any role required.

**LIVE MEASURES/VIRTUAL INJECTS** – Live exercises are so costly and rare that they are usually tasked with too many objectives. The first is the balance between pre-event training and just-in-time training. Do participants show up already knowing procedure or are they learning as they go within the exercise (just-in-time)? The second is the use of the exercise as a measure of performance versus use as training for live injects. Injects are challenges artificially introduced into an exercise to prompt reactions.

The cross purposes of these two goals is always a paradox. Exercises that fill a limited time frame with an unrealistically high number of artificial injects for training (and interest) do not yield a realistic performance measure. CADE has addressed this by recommending that live exercises focus on setting performance measures and identifying problems. Save injects for virtual exercises. Live drills tend to have enough

real challenges of their own and live injects usually present uncomfortable acting followed by an uncomfortable “I guess I’d better play along” treatment. In the virtual environment role-playing is much easier (almost automatic) since avatars are already separate incarnations.

**ABSTRACTION** – And picking up on this separation, one good rule for implementing any technology is to turn limitations into opportunities. Since avatars are at least one level abstracted from you, they can never actually be you. And while this sets an upper limit on immersion, it opens a world of possibilities. It is this abstraction that allows safe training involving lethal objects, like toxic gas or dirty bombs. It is also this abstraction that allows role-playing to actually be easier in the virtual world than in a live exercise.

Abstraction also allows for a certain thoughtful perspective. The distractions of a live exercise can be eliminated in the virtual environment. Emotions, which can heat up rapidly, can be slowed in the virtual environment.

This is a psychological distinction we take advantage of in our violence prevention training. Conflict in live exercises has a certain edge to it, which can be a powerful training tool - but not always. Sometimes it is better to practice behaviors with a kind of psychological distance so that you can unpack the experience of the moment.



- Morgue facing surge capacity exercise on PHP Island

This same psychological distancing is also an advantage when practicing exercises like mass casualty processing. The dead or injured can be emotionally charged subjects. And while a live exercise tossing around body bags filled with potatoes or sand may give you a better sense of fatigue, virtual body bags can actually be easier to suspend disbelief.



- Airport Security exercise using mannequins on PHP Island

**LOCATION** – When was the last time you shut down a major airport for training? How about the financial center of a major city? Perhaps the Superbowl? Needless to say, anyplace can be modelled virtually. And the most obvious advantage of the virtual environment is that you have complete control over it. For many locations, virtual exercises are the only way the preparedness training will ever occur.

All of these comparisons are meant not only to distinguish advantages of each mode of training, but also to establish a relationship between live and virtual exercises that can benefit each. When used as preparation for live exercises, virtual training can be, to quote one recent participant, “invaluable.”

### **Traditional Alternative: Tabletop Exercises**

Virtual Environments are to traditional paper tabletops as television is to crossword puzzles. To be fair once again, traditional tabletops have a lot to recommend them. They can be highly effective and, like radio, offer the advantages of theatre of the mind. But after that, they tend to be limited in graphic visualization (often resorting to matchbox cars and paper cut-outs). More innovative tabletops have included computers as visualization tools. But even electronic tabletops (desktop exercises) tend to function on the level of simple PowerPoint presentations and phone conferencing. Virtual environments offer a level of immersion and graphic visualization that leaves traditional tabletops far behind. When engagement is the measure, there is no contest – virtual environments can be an incredibly effective advantage. Comparisons between tabletops and virtual environments are most likely just points on a continuum. The future of tabletops is already here and this project represents that genesis.

As the genesis continues, during which tables and walls themselves will become interactive tools, the comparative advantages to watch are:

**ADAPTABILITY** – Virtual environments, because they have an appearance of fidelity, create an illusion of substance where there is only computer code. That code is easy to change on the fly. Virtual environments will increasingly be able to adapt in real-time to creative changes in concepts and ideas during training.

**IMPROVISATION** – The human element is an essential ingredient in training. As the virtual space itself improves, the means of inhabiting that space will improve as well. At the time of this paper, it is too early to know the full impact of voice to Second Life, but examples from other voice-enabled virtual environments indicate that the innovation is just beginning.

The human ability to improvise will blossom in new ways. Expect greater creativity and the development of tools and techniques for expression and learning. Virtual acting or role-playing may become a career choice. Likewise, virtual observation and consulting will develop as a market. Lookout for virtual anthropology (homo avatarus?).

**COLLABORATION** – The power of virtual environments to bring people together for unique interactions has already been realized for a small sample. Wait until everyone incorporates virtual environment collaboration as tool. The same 16 million dollars used to train people in 2 states for 4 days will be able to fund simultaneous, real-time training in all 50 states as well as other countries at all levels of the National Incident Management System...

**DOCUMENTATION** – ...and record the entire experience for analysis and evaluation. In fact, we are already using the stills and movies captured from virtual training to enhance video training, papers such as this one, and even to better illustrate actual Emergency Situation Manuals.

**FIDELITY** – Fidelity, the measure of realism, deserves special discussion because it is the one area where more expensive and advanced virtual environments have already proven themselves. Fidelity has been the holy grail of virtual research since the beginning. And the goal of achieving visual fidelity to equal the resolving power of the human eye has been reached. And

while that level of fidelity is not yet available in Second Life, one day it will be. But it begs the question: How much fidelity is needed for effective training?

And the answer, according to military and academic sources, is not that much. In fact, too much fidelity can distract from training. So while the future will undoubtedly involve amazing advances in virtual experiences, we are already at a level where Second Life environments are super-tools for training.



- Gymnasium SuperPOD (Point of Dispensing) Exercise

## IN CONCLUSION

Public Health Preparedness Island is thriving as a training space. CADE highly recommends using virtual environments as a key component in any emergency preparedness training system. In conjunction with traditional training methods, Preparedness Island has filled many gaps in existing training plans. We are currently deploying our SL Island and virtual training systems for several jurisdictions in the U.S. We have also demonstrated it for the CDC and feel strongly that virtual environment training is on the verge of becoming an essential tool in the preparedness arsenal. A quick reference to technology adoption and diffusion modelling shows that if the right stakeholders are reached, the next two years will see virtual training become standard practice.

## ABOUT CADE

The Center for the Advancement of Distance Education (CADE) is a self-supporting unit within the School of Public Health at the University of Illinois at Chicago. CADE brings innovative technologies, such as games and simulations, to a wide audience both in the field of public health and beyond. CADE specializes in unique, integrated, user-centric solutions. For more about CADE's work in virtual worlds, see <http://www.advancedrealities.com>.

## **Panels**

# Creating Information Learning Communities in Second Life

**Lori Bell**

Alliance Library  
System

**Mary-Carol**

**Lindbloom**

Alliance Library System

**Barbara Galik**

Bradley University

**Craig Cunningham**

National Louis University

The Alliance Second Life Library has created a dynamic and interactive information and learning community in Second Life through library, education, non-profit, and other partnerships. The Info Archipelago has grown from one island to over twenty within a year. Library services are provided by over 500 self-identified international library volunteers and creative exhibits, displays, and immersive learning environments are being formed for professional development and Second Life residents. Examples of these include Renaissance Island - dedicated to 16th century Elizabethan life, a science center with over 600 members, individual libraries of all types such as Bradley University which will recreate their campus and contribute to the collaborative library effort, and strategic partnerships with educators to offer for credit courses, non-credit courses, and informal learning opportunities. Through this panel discussion we will share what we have done and also seek input from the audience as to what other types of services would be of benefit to the Second Life education community.

In the book Wikinomics by Daniel Tapscott, he discusses the fact that in today's world of rapidly changing technology and increasing amounts of information, it is impossible for one business or agency to be on top of every innovation and new technological development - that to continue to be innovative, businesses and other agencies need to reach out and work with others in new ways - mass collaboration. This is true of the libraries and education agencies in Second Life. No one library could offer 24/7 services in a physical location, an interactive website and a third place, virtual worlds. The Alliance Second Life Library, which started in April 2006 with a rented building, has grown quickly because of volunteer librarians and others from all over the world, libraries which have established presences in Second Life, and educational and non profit partners who all work together to create an information community on the Info Island Archipelago.

Lori Bell, Director of Innovation at the Alliance Library System, will discuss how the project started, some of the challenges encountered, the partnerships made and events and services the library offers. Lori will talk about partnerships in Second Life, how they benefit the library, and how these are unique from the real world.

The Cullom-Davis Library at Bradley University was the first academic library in Second Life to establish its own presence while also working with the Info Island Archipelago. Barbara Galik, Director of the Library, and President of the Alliance Library System Board of Directors will discuss how the Bradley library and campus established a Second Life presence, how she convinced administrators at Bradley to do this, and the partnerships she made on her campus to lead a campus-wide effort.

Craig Cunningham of National Lewis University, began working with the library a year ago. He is an education professor and he and Barbara Galik have established ELVEN (Education and Libraries in Virtual Environments) which addresses the education needs of teachers and libraries in virtual worlds like Second Life. The group meets regularly, working on a virtual world presence for children and with the Teen Second Life library group to enhance services for young adults.

Mary-Carol Lindbloom, Library Development Consultant at the Alliance Library System, is Coordinator of Renaissance Island. In spring 2007, Alliance received the donation of an island for immersive learning on the Elizabethan era. Mary-Carol and other librarians developed a Tudor era village and shops where Second Life residents could live and creators could set up shops for Elizabethan clothing and other items. A donation of a Globe Theater was provided authentic to her period. Anyone interested in this period can come to the island not only to learn about Elizabethan times, but to live them. Mary-Carol is partnering with English teachers, drama teachers, and history teachers to create immersive learning experiences for students that will engage them in the period.

# The SciLands

## James Dearnley (Moderator)

Loughborough University, UK

The SciLands is a region of Second Life dedicated to the exhibition and practice of the natural and applied sciences, as well as associated technologies.

Now numbering over 30 islands the SciLands membership includes educational institutions, research organizations, museums, scientific associations and national agencies engaged in formal and informal education, collaborative exploration, knowledge transfer, public engagement and outreach.

The SciLands region incorporates its own orientation experience, several lecture theatres and a shared exhibition space, and maintains close contact with the other scientific projects and groups in SL. For more details and links to members' blogs visit: <http://www.scilands.org>.

Panel members represent several different scientific communities including space, nanotechnology, healthcare, the environment, nuclear power and information science will discuss how SL is being used to support Science, Technology, Engineering and Mathematics (STEM) education and to communicate scientific and technical information to the public in new and innovative ways.

Speakers include:

- Jeffrey Corbin from the University of Denver will speak about SL's use in multidisciplinary Environmental Impact Studies including safely familiarising students with real world nuclear decay experiments. Jeffrey will also describe Dr Mary Ann Clarks's educational island created for teaching Mendelian and molecular genetics to students at Texas Wesleyan, but accessible to all SL residents.
- Dave Taylor from the UK's National Physical Laboratory (NPL) will speak about his work with Imperial College London relating to London's National Health Service in the use of SL to communicate complex healthcare messages and illustrate what healthcare of the future could look like.
- Eric Hackathorn of the National Oceanographic and Atmospheric Administration (NOAA) will describe NOAA's outreach islands and their future plans for mapping live scientific data on a huge model of the Earth inside SL.
- Andrew Hoppin will describe the NASA Ames CoLab project in Second Life and its role in the future of participatory space exploration and facilitating national and international collaborations in space missions.

The panel will be moderated by Dr James Dearnley of Loughborough University in the UK.

Other SciLanders will be available to answer questions including: Katherine (Cochrane) Prawl, CEO of the International Spaceflight Museum (ISM), Troy McConaghy who works with the ISM and many other science groups and projects across SL, and Fred Fuchs, of development company Firesabre.

## REFERENCES

Cochrane, K. (2006) Case Study: International Spaceflight Museum, Proceedings of the Second Life Education Workshop, Livingstone, D. & Kemp, J. (eds), San Francisco, August. Available at <http://www.simteach.com/SLCC06/>

# **Tools in SL**

**Jeremy Kemp (Moderator)**

San Jose State University

## **ABSTRACT**

This pre-convention panel will discuss the need for and use of tools to enhance learning and teaching in Second Life. The extensibility of Second Life has led to the creation of a wide range of tools used by educators to support their teaching – from the ubiquitous Metalab Whiteboard by AngryBeth Shortbread used everywhere in Second Life for presentations and videos, to projects such as Sloodle, the Second Life/Moodle mash-up.

This panel will discuss why educators feel the need for such tools, the use of such tools in the rich 3D environment of Second Life and future directions and developments.

# Exploring Virtual Education: First Hand Account of 3 Second Life Classes

**Mechthild Schmidt**

Master Teacher McGhee, New York University

**Prof. Charles Kinzer**

Teachers College, Columbia University

**Isaac Greenbaum**

Senior student and SL intern, McGhee, New York University

## ABSTRACT

The panel evaluates our distinctly different models of learning in Second Life.

Courses presented are:

“Possibilities of Virtual Worlds”, taught in Spring 07 at the graduate Communication, Computing and Technology in Education (CCTE) at Teachers College at Columbia University by Prof. Charles Kinzer

“Visionary Concepts in Motion Arts”, an upper level class in the BS Digital Communications + Media at McGhee Division SCPS NYU taught in Fall 06 by Mechthild Schmidt. Accompanied at the panel by student and SL intern Isaac Greenbaum

“Massively Multi-User Media”, taught in Spring 07 at the graduate Interactive Telecommunication Program (ITP) at the Tisch School at NYU by Mike Olson.

## PANEL INTRODUCTION

In its application, education rarely manifests itself in isolated knowledge bases. “Soft skills” like teamwork, interdepartmental outreach and new media literacy are valuable assets in most careers. They are implemented inside the thematic context of these classes using Second Life as an experimental and innovative platform.

Second Life is still in a formative stage with technical hurdles and imperfections. To us this is a most interesting stage giving us a chance to participate in the growth and structure of this virtual world.

The panel addresses the following relationships:

- Multiple approaches to SL developed during the course of the class pedagogical benefit vs. or in addition to brick + mortar

- class structure and student acceptance with comparison of graduate and undergraduate students, full-time vs. working part-time student

- use of SL as a learning tool for media literacy, a teaching environment, an interactive lab, a community space

- future plans of our departments/universities in SL

- professional benefits for students (current internship and entry position)

## 3 CLASS EXAMPLES

**“Possibilities of Virtual Worlds”, Charles Kinzer**

Exploring Technologically-Literate College Students' Acquisition of Virtual-World Skills and "Literacies"

There is an implicit belief that often situates college-aged technology users as well-versed in (all) new technologies. While this may be the case, research examining good technology users' acquisition of new technologies is rare. Indeed, the idea that college students may be "early adopters" who possibly struggle with the requirements associated with new technologies is all but absent from the current discourse. This paper examines technologically sophisticated college students as "new implementers/new users" of technology within the Second Life virtual World.

The study to be reported followed a group of two groups of college students, each one year apart and enrolled in a graduate, educational technology program. Both groups of students

were taking a course titled "Possibilities of Virtual Worlds." The two groups (10 one year, 15 the next) used the Second Life virtual environment.



The class met both face-to-face and inside Second Life. Logs of their experiences, class/sharing discussions were analyzed and patterns emerged with regard to perceptions, frustrations and solutions that occurred as students learned new skills. Additionally, collected screen shots were leading to inferences of growth in students' knowledge related to practices that were required for this specific technological application.

The presentation will share what it means to become "literate" in the use of the Second Life environment, show how college-age, sophisticated technology users became "low-literate" first adopters and then acquired new skills and "literacies" (Gee, 2004) as contextualized in this new experience, and will suggest implications for technology-grounded acquisition behaviors to other settings. It will also discuss difficulties associated with various in-world pedagogies for learning and contrast those with face-to-face class meetings.

#### **“Massively Multi-User Media”**

The course was taught by Mike Olson in Spring 07 at the graduate Interactive Telecommunications Program (ITP) at the Tisch School at New York University.

The course explores the creation of content for online worlds using Second Life as a production platform. An extensive ‘FunHouse’ exhibited multiple video and audio related interactive displays. The students entered with extensive previous background in programming and/or audio and modeling skills. Go to the ‘Kremlin’ look-alike on SL Campus North and experience.

The 1-semester space on Campus Island North is now vacated. We are considering to revive the “Fun House” in the fall.



#### **“Visionary Concepts in Motion Arts”, Mechthild Schmidt. Accompanied by student and SL intern Isaac Greenbaum**

The upper level course combined a theoretical foundation with assignments in Second Life. Tiered assignments of increasing complexity eased the student into the new environment: from simple coordination to combining analysis with design work, to building teams understanding the multifaceted talents needed for the project. Most students are working full or part-time. A-synchronous, in-world meetings accommodated their schedule.

The decision to use Second Life for this class was derived from the mandate to analyse visionary concepts in the classical modern era and search for a potential visionary concept in contemporary media culture. Today's net culture moves away from the sole auteur to a very different structure, a participatory culture, a phenomenon explored by Henry Jenkins, Director of the Comparative Media Studies Program at the Massachusetts Institute of Technology in his White Paper “Confronting the Challenges of Participatory Culture: Media Education for the 21st Century”. Jenkins, identifies

“the use of educational simulations, alternative and augmented reality games” as part of a “set of core social skills and cultural competencies that young people should acquire if they are to be full, active, creative, and ethical participants in this emerging participatory culture:”

At this time Second Life is the most immersive platform to practice 'Participatory culture' and I wanted to introduce the students to its potential while SL is still in its formative stage.

### **Class Structure**

- 1- Historical introduction (Developmental stages of new media, define 'Visionary' - does Second Life have 'visionary' potential?)
- 2 - start in SL: warm-up exercise: reconfigure your avatar + send a postcard to all
- 3 - interviews + evaluation in SL on media habits and behavior
- 4 - exhibition project: distill content to major milestones, upload imagery + writing, build exhibition space, drop-box (scripts + SLURL)



### **Our Challenges**

Simultaneous chat and work, inconsistent performance in labs, occasional 'Griefers'

### **SUMMARY OF OUR EXPERIENCE IN SL**

- All students entered the class fluent in either 2D or 3D animation.
- Half the class were online 'gamers', entering SL with ease but felt frustrated by the lack of high-end graphics and game rules.
- The '3D builders' struggled with the simplistic tools but enjoyed the real-time building in 2-person teams

- An initial skeptic, Isaac is now working on his Senior Project Internship in SL for the Annenberg Foundation with Frog Design.

### **Future Plans**

Our free space on Campus Island North is now vacated. We have moved on to Eduisland NYU-McGhee, Eduisland (45,144.22) and NYU IT department is located on one of the NMC Islands: New York University - The Classroom, outreach (30, 153, 22).

This first class has received a positive response from students, faculty and administration. This fall we will be teaching an interdisciplinary project with three participating faculty. 'Media Genres' and 'Political Economy of Digital Media' will contribute to a Digital Communications 'Special Topic: Machinima - Moviemaking in Second Life'. The script combines selected scenes from Shakespeare's Macbeth. While held independently, we will have a plenum for all three classes and common inworld meetings. Students are encouraged to register for two of the participating courses.

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Jenkins, Henry (2006) "Confronting the Challenges of Participatory Culture: Media Education for the 21st Century". [http://www.henryjenkins.org/2006/10/confronting\\_the\\_challenges\\_of\\_6.html](http://www.henryjenkins.org/2006/10/confronting_the_challenges_of_6.html)

SL – Teachers College, Columbia

<http://slurl.com/secondlife/TC%20Educator/132/224/27>

SL - Eduisland NYU-McGhee: <http://slurl.com/secondlife/Eduisland/15/130/29>

SL - New York University, ITS <http://slurl.com/secondlife/Outreach/30/153/292>

NYU ITP and NYU McGhee websites: <http://itp.nyu.edu/itp/flash/about>.  
<http://scps.nyu.edu/dcom>

## **Breakout sessions**

# By the Numbers: Quantitative Research Methods In Second Life

Mark Bell

Indiana University

## ABSTRACT

It is time to move from explaining what Second Life (SL) is to using it as a social science laboratory. If we are proceeding with this type of research, we need to evaluate what by the Numbers quantitative research methods work effectively in Second Life.

## BY THE NUMBERS

Second Life is now entering its fourth year and researchers have the opportunity to perform more research than ever. The MUVE offers a wide range of research methods and methodologies. This session will center on quantitative research methods that have been tried in synthetic worlds, the problems they encounter and what methods may be tried in the future. This includes experimental research, survey research, textual analysis and naturalistic inquiry. There have certainly been trail-blazers in this new frontier. By studying what they have done, we can learn from the experiences of Steinkuehler, Castronova, Robbins, Krotoski and others.

The session will begin looking at the research questions applied to SL and the variables used in existing studies. Following this will be a discussion of the methods that have been used in SL and what results they have obtained. I will review each research method, how it is currently used in quantitative research and then discuss how it could or has been used in Second Life.

Experimental research is a controlled test to determine cause and effect. This type of research is usually conducted in a controlled laboratory environment. SL is far from a controlled environment; allowing all sorts of unknowns to enter into the experimentation. Because of this in Second Life, is much harder to define independent and dependent variables and assign causation.

Survey research asks participants questions for the purpose of describing a population. This has been the most common method used in SL. The

difficulties in this method arise in the mechanics of the survey and storage of the data retrieved.

Textual analysis describes and interprets artifacts. SL artifacts can be fluid and temporal making it difficult to study them. Through the use of logging and other methods, more stable artifacts can be collected and studied.

Naturalistic inquiry studies how people behave when acting in a setting. This method holds great promise in SL, allowing researchers a wide range of environments to observe. The trouble arises with data collection and other ethnographic ethical difficulties.

Finally, the future of quantitative research will be discussed. The field stretches out in front of the research community to a near limitless horizon. The open source environment of the SL viewer and the use of inworld HUDs may expand quantitative research possibilities to new levels. Also, the visual presentation of this data, both historically and in real time is limited only by imagination.

Attendees will get a overview of quantitative methods in SL and what the future holds for further research in SL.

# **Teaching the Creative Arts in SL**

**Anthony Fontana and Bonnie Mitchell**

Bowling Green State University

## **ABSTRACT**

A Breakout Group will discuss, debate and investigate teaching the creative fields in SL, specifically art, music, dance, theater, design, architecture, etc.

The participants attending our session would be broken into 4-6 groups and each group would be given a series of questions to discuss and respond to. They will document their responses and designate a representative to present their findings to the rest of the participants via a projected image of an SL whiteboard or their notes from the computer. The rest of the participants will be allowed to ask questions of the group presenting and add to the discussion.

The breakout groups will all be focusing on issues related to teaching the expressive arts in SL. We have divided the topics into 6 main categories: 3D Interfaces and Teaching, Culture and Social Issues, Teaching Strategies, Blended Reality, Interdisciplinary Collaboration, and Intellectual Property.

# Grassroots: A Second Life Campus from the Ground Up

**Maryruth Glogowski, M.L.S.**

Associate Vice President for Library & Instructional Technology  
Buffalo State College

[glogowmf@buffalostate.edu](mailto:glogowmf@buffalostate.edu)

SL: Maryruth Mersereau

## ABSTRACT

The Buffalo State Island is an example of grassroots virtual development for a college campus. The Research Foundation of the State University of New York provided funding to promote virtual scholarship and creativity integration. We began by establishing an institutional presence for areas on campus that are interested in developing a virtual presence in Second Life. The initial Buffalo State College SL Pilot Group is comprised of faculty, staff, administration and students who are exploring, researching and planning a campus-wide introduction to Second Life. Phase 1 was completed in spring 2007. Phase 2 for summer 2007 is just ending.

## PROJECT LAUNCH JANUARY 2007

Championed by Fashion Technology Professor Elaine Polvinen, the Second Life pilot project started with a meeting in January 2007 in the Research Foundation offices. Preliminary goals were set and commitments were made. The Research Foundation agreed to pay for an island. Butler Library agreed to provide Web 2.0 savvy librarians. Computing & Technology Services agreed to support the pilot and investigate the technical support and hardware requirements for our networked environment. Faculty from Creative Studies, Math, Computer Information Systems and the Center for Health and Social Research became involved.

By February the 16-acre Buffalo State Island was secured. Building commenced. Since the focus of the spring semester was on researching and forming collaborative relationships for a larger implementation, a Wiki was set up at <http://www.bscsecondlife.info>

Faculty members were encouraged to involve undergraduate and graduate students in Phase 1 of the pilot project. Initially an Info Pad was set up on the island as a central meeting point for the BSC SL Pilot group participants in world.

Different levels of participation evolved. Some members of the BSC SL Pilot Group developed a

teaching project, many read and researched, others experimented and explored. Then came the builders, the decorators, the remodelers, and the movers.

## PHASE 2 SUMMER 2007

Within recent weeks the island has been transforming. This has been a learn-as-you-go do-it-yourself grassroots campus project. Faculty, librarians, computer lab support and training professionals, undergraduates, graduate students, volunteers and even administrators have collaborated and shared in world and at meetings, through email and the Wiki. Now one can wander the island, read the mission of the college, explore the library and listen to podcasts or the soothing sounds of the fountain, get a new outfit designed by a professor for \$0L, or watch a fashion show of clothing designed by our students.

## BEST PRACTICE

Why is this offered as a best practice? As a mid-size (10,000 students) comprehensive, public institution that does not yet have a layered network in place, Buffalo State College managed to provide an environment for the SL pioneers to learn and develop. Our graphic artists and video production staff were not involved although the library webmaster was a key player. A great deal of learning took place and we are better prepared and motivated to expand this project in the coming academic year.

## VISIT

While under construction the Buffalo State Island is private but there is a way to see us. To visit join the SUNY Buffalo State Guests group and teleport to the Buffalo State region on the map. Alternatively, you can read the Butler Library Blog post and watch the video at <http://askehbl.wordpress.com/2007/07/02/buffalo-state-in-second-life/>

# Tips for Dinosaur Wrangling: Introducing Traditional Learners to the Digital Environment of Second Life

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SL cannot be understood from the 'outside'. The following are seven key issues that have been noticed among the more than 3000 traditional educators worked with in Second Life on the islands of imagiLEARNING. These seven items, though clearly generalizations, lay the ground work for much of the frustration, fear, and general "lostness" described by those traditional educators. (Interestingly we have never heard a digital learner ever say they felt 'lost' in SL.) These items identify the beginning of a framework to better prepare traditional educators for immersion in the virtual environment.

## 1. The Wilderness vs. At Home

The controls of SL are those of most immersive digital games and therefore familiar to gamers but fully foreign to non-gamers. This difficulty in basic movement increases the perception that the traditional educator is out of their element, and in for some serious trouble.

## 2. Expert vs. Self Learner

Once a traditional visitor learns how to use the 'chat' feature, the first phrase spoken there is "How do I...?" Rather than gained by years of service, academic degree, or position held, in-world expertise is defined by performance and knowledge of the environment. Since non-gamer visitors are low on both parts, they frequently experience the absence of 'earned' respect and authority and are sent into a state of shock the first time one of 'those kids' refer to them as 'dude', or a 'noob'.

## 3. Purpose vs. Experience

Traditional educators want to understand 'purpose' even before entering the environment. Digital learners will define their purpose based upon the experience.

## 4. Process/Structure vs. Outcome

Similar to Purpose vs. Experience, traditional educators seek a structure to their in-world activities while digital learners self-define a process to reach the outcome they have decided upon.

## 5. Topic Based Social Network vs. Outcomes Based Social Network

Traditional educators typically connect with groups that have topical connection with their real-world roles and interests. Digital learners typically form social networks based upon "who can help me create this sword?" or other outcomes-based issues.

## 6. Re-Create vs. Create.

While the traditional educator approaches the virtual world to learn how it can be used in education, the digital educator approaches the environment asking how this experience can change the entire practice of teaching and learning.

## 7. Shoulds vs. Cans

In keeping with a preference for purpose and structure, traditional educators are prone to speak of many 'shoulds' and 'should nots' in the virtual environment. Digital visitors are just busy creating, trying, failing, trying again; to find out the actual potentials available with the new reality of virtual world technology.

# Tech Savvy Girls After School Program

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The Educational Uses of Second Life Wiki lists over 30 wide-ranging educationally relevant functions of the Second Life platform (<http://sleducation.wikispaces.com/> educational uses). These categories range from content delivery through displays and exhibits to elaborate simulations and rich scientific and historical. While evidence mounts for the educational value of video games and virtual worlds as engaging venues for situated learning (Steinkuehler & Chmiel, 2006; Gee, 2003; Beck & Wade, 2004; Brown, Collins & Duguid, 1989; Squire and Jenkins, 2003) parents, community members, and school administrators still tend to consider games, and participation in virtual communities a frivolous or even dangerous distraction from real education. Their lack of support for school-based and out-of-school initiatives can often mitigate or prevent positive results from these programs, even after the children are enrolled in them.

In 2006, we started an out-of-school program that uses The Sims and Teen Second Life to engage girls in gaining basic computing skills and computational literacy while engaging in the culture of production. Although the girls are quite enthusiastic about the program, we encountered varying degrees of parental support, which according to a recent report issued by the National Research Council of the National Academies is not limited to only our program. The report lists issues of parental resistance, especially among well-educated socio-economic groups, as a challenge that must be addressed (National Academies Press, 2006). In our experience, many families tightly restrict access of their daughters to computers and the Internet, which prevents practice in these skills when the girls are not in the research lab. Parents compound the challenge by making attendance at these enrichment programs a low family priority. This problem seems to cross the lines of socio-economic status. In addition, even in households where finances are not an issue, there is a lack of emphasis placed on investing in appropriate computer technology, especially for girls. This may contribute to the continuing

disparity in the numbers of girls versus boys engaging in productive information technology practices (Hayes, in press).

However, access to technology is only one piece of the puzzle. If students are to develop technology skills, they must also have access to instructional programs that will provide the scaffolding necessary for a conceptual understanding of the technology (North Central Regional Educational Laboratory, 2000; National Academy of Sciences, 1999). This central issue drives the mounting concern over our ability to meet the increasingly technological demands of the 21<sup>st</sup> century and global economy (Friedman, 2005). Although many assume that public schools are equipping students with necessary technology skills, often this is not the case. As the report from the National Academy of Sciences on information and communication technology (ICT) fluency (2006) points out, schools and educators in general are not equipped to provide the instruction necessary to help students become fluent with technology. In fact, many school administrators and educators express negative opinions of the use of game-based technology or virtual worlds (Kirriemuir & McFarlane, 2004).

It is, therefore, imperative that out of school programs work to fill the void, but convincing the various stakeholders is a daunting task. During our breakout session, we will consider strategies to educate stakeholders regarding the benefits and ways to accurately assess negative factors regarding games and virtual worlds in education.

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# Qualitative Inquiry In Immersive Worlds: A Personal Experience

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## ABSTRACT

The following represents a brief review of the methodological and ethical considerations that emerged during the writing of my undergraduate dissertation about communication patterns and community processes inside Massive Multiuser Online Environments.

## BEHAVING UPON VIRTUALITY

Working with technologically mediated events meant recognizing oneself as an avatar that interacts with others through a digital scenario (and also wondering what brought and maintained us together, me and my avatar).

This process revealed pre-given biases, cognitive barriers and ongoing setbacks, including the acknowledgment of operative dissonances between online and offline experiences. Being an exploratory and descriptive inquiry, it was intended to support the theoretical perspectives through an ethnographic approach.

After retrieval, data interpretation followed a thematic coding, which meant identifying the main topics touched by the interviewees and analyzing the relationship formed between these codes of interaction. This helped trace the value creation processes in terms of sociability (groups, friends and acquaintances), economics (businesses and assets such as land), and politics (position that the subjects occupy in the social order to which they belong to in Second Life).

What Ian Bogost calls unit operations: “modes of meaning-making that privilege discrete, disconnected actions over deterministic, progressive systems” (Bogost, 2006: 3), was the core of the knowledge harvesting process and the narratives that accompanied it.

## MASKS & ROLES: “PRESENTATION OF THE AVATAR IN EVERYDAY METAVERSE”

As immersive media, online worlds involve the researcher in social dynamics. Therefore, we talk about the performance of a role within the

scenario and its participants. Considering that social, economic or political value can be edified within SL frontiers, the residents (including researchers) acquire trust-based relationships that imply obligations and responsibilities within the environment and its residents. The characteristics noted above do not imply that offline fieldwork is free from these ties, but that technology based scenarios present their particular facets.

What Bogost calls the simulation gap (Bogost, 2006: 3), which exists between a source system and a user’s subjectivity, manifests an operative dissonance between the avatars and the agents behind them. This implies an experiential paradox for the user, and therefore the researcher, which manifests itself as an accentuation of a transformative dimension inside 3D worlds, opposite to more rigid concrete physical scenarios.

Nevertheless, the contraposition between agent and avatar does not necessarily imply that anonymity is an obstacle for finding meaningful data. The fact that the other residents can present themselves “as they wish”, and some do try to maintain distance -within their possibilities- with their first life, the process of constructing masks, according to authors such as Shakespeare, Ervin Goffman or Paul de Man, is far from an exclusively online practice, and therefore irrelevant to the value that can be attributed to the collected information.

I suggest that the discussion and evaluation of ethical standards becomes a priority for building coherent “digital” research strategies, related not only with the inquiry process, but also with the further representation of the content of the world, the activities of the users and Linden Lab, as well as the authority vacuums proper of a communication media that is only in its early stages.

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