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Practical Applications of Technology for Learning e-Magazine

THIS WEEK: Design Techniques

Give Your e-Learning Some (Second) Life: Simulation Made Easy

By Bill Brandon

Most professionals in e-Learning, as well as those in more traditional training and development roles, have heard of Second Life, the massive online virtual world simulation, but most have never visited it. Articles about Second Life have appeared in many training publications, but generally they don't really tell you much about it, and frankly some of what has been said in print is misleading.

This week I'll give you an overview that addresses more of the concerns of e-Learning designers, developers, and managers. I'll give you my impressions of what Second Life really is, how it supports development of learning environments, and how you can use it as part of your organization's learning strategy. I will follow up in a second article with interviews involving designers and providers who are already using Second Life for non-trivial learning applications and support. By the end of this article, you should have enough information to visit Second Life on your own, look around, and begin to decide whether and how you can build your own learning environments there.

What is Second Life?

You've probably seen at least one article about Second Life in the last year.

Simulation and immersive training are topics of great interest in e-Learning today, but many practitioners believe the cost and the effort are too great to permit any but the largest companies to use those methods. Second Life offers a flexible, low-cost environment for building simulations, and it presents few, if any, barriers to entry. This week, read about the real Second Life and its potential for many different approaches to learning, from a current part-time in-world resident. It's easier to get started than you think!

A publication of



Chances are, the article said something along the lines of, "Second Life is an internet-based virtual world." I would agree with that, and I also don't think that description goes far enough. One article I saw referred to Second Life as "a massive multi-player game." Well, I think that's going a bit too far, although anybody who wants to do so could certainly build a Massive Multi-Player Game (MMPG) in Second Life.

Here's my view. Second Life is a very large simulation that contains other simulations. It is a place where some of the laws of physics are suspended or modified, where individuals choose and change, sometimes endlessly, the appearance of their in-world representations (called "avatars"), and where the possibilities for learning are very great, at least in my opinion.

Some of the characteristics of Second Life in-world are superficial. These tend to attract a great deal of attention from first-time visitors. For example, residents in this world can walk, run, drive vehicles, and fly superhero style. If those modes of transportation aren't fast enough, residents can teleport themselves from one location to another. Avatars that walk off a cliff land unharmed at the bottom, like characters in a cartoon. Avatars can take on fantastic appearances, including wings, mermaid tails, and fur, all at the user's choice. The only thing significant about all this

is that it is sometimes easy for the users (in real life, or "First Life") to forget that there is a real human being behind every avatar. Otherwise, none of this affects the potential of Second Life as a place for learning, as long as you don't allow appearances to marginalize the significance of the system behind them.

More important to us as e-Learning designers, developers, and managers, Second Life is a platform for creating simulations and environments for learning and interaction. Even the basic free membership allows a resident to "script" – that is, to build objects. On the superficial side of things, do you want a small helicopter to carry you from place to place? You can build it, fly it, and let others use it. More seriously, do you want a virtual training center with every amenity and a spectacular view to boot? You can build it. Do you want to support technical training, or communication skills development, or collaborative learning? You can build an environment specifically to facilitate any or all of these. If you are having trouble building, ask any avatar displaying a "Sculptie" tag for help. (Sculptie is the name of a group of coders and other residents who are very adept at building things in Second Life, and they are glad to assist. Groups are a big part of Second Life.)

To do some of these things, you may need to buy or lease some virtual land. You may also be able to lease

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What is Second Life like as a learning environment?

Initially, many reviewers looking at Second Life said, "It's nice, it's interesting, but it's not suited to serious learning purposes." Articles presenting this view continued to appear as recently as this summer (2007). And when these articles appeared, there were a number of user interface and up-time issues that certainly could get in the way. However, most of these issues are no longer apparent, to the point that I personally now feel confident in suggesting that Second Life is worth a serious look.

One of the most significant drawbacks in the beginning was that any communication other than noises (laughter, applause, and various sounds associated with reactions or with getting attention) had to be typed. This could make group conversations in IM (Instant Messenger) or Chat confusing to follow, and frustrating for slow typists. A discussion might creep along at the pace of the slowest keyboarder. If a participant had poor spelling or grammar skills in English, it was very easy to misunderstand their meaning.

This changed during the summer of 2007 with the introduction and debugging of Voice Chat. Now any user with a microphone can simply speak, and every nearby user who has a headset on or external speak-

ers connected to his or her computer can hear the speaker. Voice is accurately represented in-world: the further you are from a speaker, the fainter their voice, and as you move around them, stereo input means that their relative left/right location is also apparent. Unless you tweak the speaker's volume (which you can do independently of the volume of others nearby who may also be speaking), the voice of a speaker fades with apparent distance, and finally becomes inaudible when they are more than a virtual ten meters or so away.

Sound quality is similar to any other Voice over IP (VoIP) application. Generally it is good; sometimes there is some noise or feedback. As your avatar's location in Second Life changes, so also does the path through the Internet "cloud" by which the audio travels. This means that if your avatar is walking next to another avatar as you talk, you may need to readjust volume levels. Usually if you and the speaker are not moving, it will not be necessary to fiddle with the audio at any time.

For users who only have headphones or speakers (that is, they can hear other residents but they have no microphone), or those who have no audio at all, IM and Chat are still available. These work much as they do in any other synchronous e-Learning application. IM allows attendees to have side conversations without disturbing anyone else. Typed Chat allows attendees to make inaudible comments to the group without interrupting the speaker. Users can individually mute any other user's typed or spoken chat.

Pedagogically speaking, Second Life is probably best as a platform for social interaction (which of course was its original purpose). In my opinion, using Second Life facilities as "lecture halls" or to deliver PowerPoint presentations is potentially a waste of bandwidth unless the designer takes advantage of other features of the virtual environment.

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Another issue with Second Life until recently has been down-time and related system problems. As you can imagine, with tens of thousands of users online (47,341 at the exact moment I am writing this on a Friday afternoon), moving around, talking and interacting at any given instant, keeping the servers balanced must be a major concern of the system operators at Linden Labs (the owners of Second Life). However, my observation is that these interruptions to service are becoming less and less frequent, and I believe Second Life is now more than sufficiently reliable to use for “events” involving large numbers of people.

Pedagogically speaking, Second Life is probably best as a platform for social interaction (which of course was its original purpose). In my opinion, using Second Life facilities as “lecture halls” or to deliver PowerPoint presentations is potentially a waste of bandwidth unless the designer takes advantage of other features of the virtual environment. Organizations do use Second Life for lectures, of course. See Figure 1, which is a snapshot of Austin Hall on Berkman Island. This lecture facility belongs to the Berkman Center for Internet and Society at Harvard Law School. I am sure that university students are used to this setting, and I am sure that it works as well for them and for the school as any real-world lecture hall. A little later in this article, I will show you another part of the Berkman facility that is an example of how to more fully use Second Life’s potential. My objection is that for typical non-students (employees) sitting through a slide-presentation-and-lecture in Second Life is no more effective (and likely less so) than sitting through the same dog and pony show in a physical space.

There are also some potential issues with distractions and safety. Some residents of Second Life are less well-behaved than others. Sometimes avatars say and do things (in the safety of anonymity and distance) that the people behind the avatars would never do in real life. It is possible to set up an access list for an area to close the environment to anyone not on the list; those outside the area will not be able to “hear” what occurs inside. I believe that Second Life is, in general, better suited for adult learners or users. I would not recommend Second Life for unsupervised use for K-12 education, and perhaps not even for supervised use. Like any other unsecured online venue, Second Life is no place for children or the vulnerable.

A basic membership in Second Life is free, and should be adequate for users who are attending an online event or using the many public spaces in-world as informal learning venues. With a basic membership, a user can build objects in designated “sandboxes” or on land where the owner has given the user

permission. A premium membership provides the ability to buy virtual land and to build larger structures on it. Currently the price of a premium membership is quite low, and should be within the reach of anyone who wants to do more extensive creation in Second Life.

In general, I would compare Second Life to other synchronous e-Learning platforms. Use it for distance learning and for its potential as a collaborative learning environment. Of course, you can also place objects in Second Life that learners can use for asynchronous learning. In the next section, I will expand a bit on the features of Second Life that designers and developers may find attractive and useful.

What does Second Life offer the e-Learning designer?

Apart from the simulated environments, a designer will find four features of Second Life most useful to support a wide variety of pedagogical strategies.

These are:

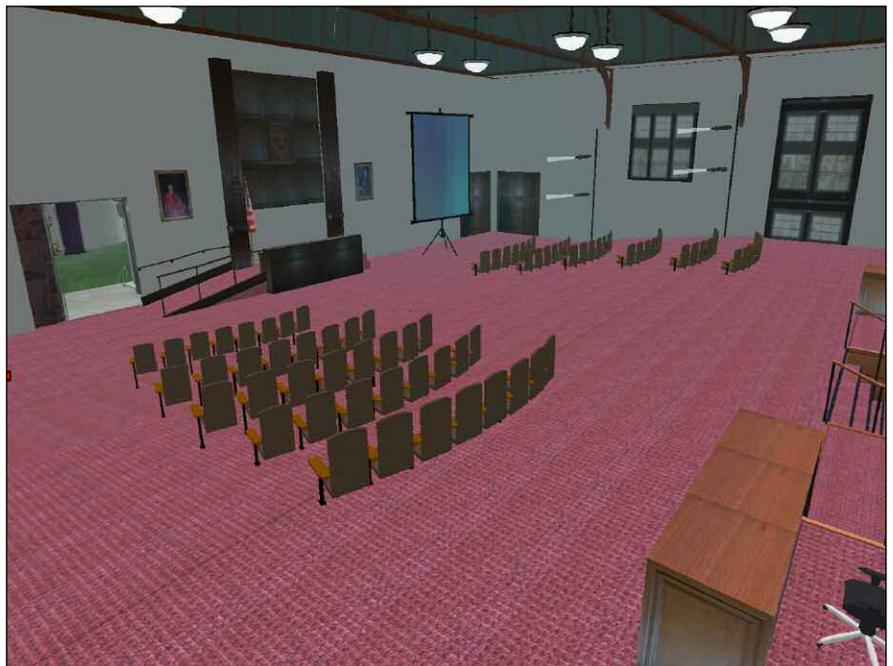
- Streaming video and audio;
- The ability to link to resources outside Second Life and in-world;
- Flexible communication, including instant messaging, multi-party chat, and voice chat; and
- Social space.

Streaming audio and video

On land where the owner has enabled them, users can receive either streaming audio or streaming video, or both.

Second Life is a platform for creating environments for learning and interaction. Even the basic free membership allows a resident to “script” – that is, to build objects.

Figure 1
Austin Hall, Berkman Center for Internet and Society at Harvard Law School



Streaming audio is the easier of the two to implement. Many musical groups already use this feature to deliver live performances and to offer their music to users on a constant basis. The same capability would work for streaming instructional audio. Landowners in Second Life can stream audio to their parcels for listening by anyone who visits those parcels. (Users control whether they receive the audio by making a choice in their individual profiles.) The landowner sets a "Music URL" specific for the parcel. This Music URL can be MPEG audio (.mp2 or .mp3) or Ogg Vorbis (.ogg) from streaming servers or from a basic Web server. Anyone who has chosen to receive streaming audio will automatically hear the content when visiting the parcel.

Streaming video INTO Second Life is similar in operation. You must be either the owner or the administrator of the property where you want to stream the video. The movie files must be compressed using QuickTime format, and the viewer's computer must have QuickTime installed. Finally, the movie must exist as an active URL on a hosting Web server. You will need to set up a media player in Second Life, which requires an object to serve as the video screen. You can use LSL (Linden Scripting Language, which comes with the Second Life client) to be more creative with the way you stream the video onto this object. The detailed instructions for setting this up are available in the Second Life Knowledge Base. You can also broadcast video FROM Second Life, including live video. In addition, you can broadcast Second Life events (concerts, meetings, presentations) FROM Second Life, and you can broadcast real world events INTO Second Life.

Linking to outside and in-world resources

You can place e-mail links and links to URLs on the Web in a couple of ways. You can put links onto an object in-world, for example, a poster that advertises an event. You can place links in your avatar profile, so that any user in-world who right-clicks on your avatar can find them. You can place similar links to information in-world by using what is known as a slurl (Second Life URL).

A common way for individuals to share information in-world is to place it on a virtual "notecard," which they can then hand to other users online. Links and slurls embedded in these notecards work the same way as any other link on a Web page. Notecards are also useful for giving another user a Landmark (sometimes abbreviated LM), which describes the location of a place in Second Life and functions like a GPS position. The recipient can place the landmark on his or her map, and use it as a convenient way to teleport to that location. This latter method is useful if you

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Flexible communication

I have already described the Chat and IM systems, but I should add that if you send an IM to a Second Life resident while they are offline or out of Second Life, the system will send them a copy of the IM via e-mail. When the resident returns to Second Life, the system will present any IMs and attached notecards that arrived during his or her absence. This is extremely useful in collaborative study or projects in which participants live in vastly different time zones or work on different shifts.

Social space

As soon as you enter Second Life, it is obvious that the environment was set up to make social interaction extremely easy and inviting. Figure 2 is an example of an area set up specifically for residents who are learning English as a second language (ESL). In this area, residents can meet informally and talk and practice their new language. This is the type of space that would be very difficult to arrange in the real world, and one that any resident from any place on Earth can use at any time and expect to find a native speaker of English or another ESL learner. The fact that the learner is present as an avatar provides a little distance that may help with personal comfort in spite of any awkwardness with the English language.

Some examples of Second Life used as a learning environment

I've shown you two snapshots of learning environments in Second Life, and now I'd like to share a few more examples. The two you have already seen are more or less polar opposites. The Berkman example illustrates a very formal space with lots of structure, while the conversation area is more of an environment for informal learning and for practice.

I've mentioned that Second Life can be an excellent environment for technical training. One of the challenges for trainers who deliver content dealing with mechanical and electrical systems has always been to find a way to simulate these systems. In Second Life you have access to the Linden Scripting Language and you can import images and animations from other software applications in order to create simulated systems. You can view a video of such a simulation on YouTube, at <http://www.youtube.com/selbyeans>. Look for the "Technical training" video, which should be the first vignette on the site and may be the one loaded in the viewer when you connect to this URL. As the narrator explains, this video is from a Second Life site that a technical college in Utah

owns. The school drives learners to the Web for the most basic conceptual information and then back in-world for richer, interactive pieces such as this simulator.

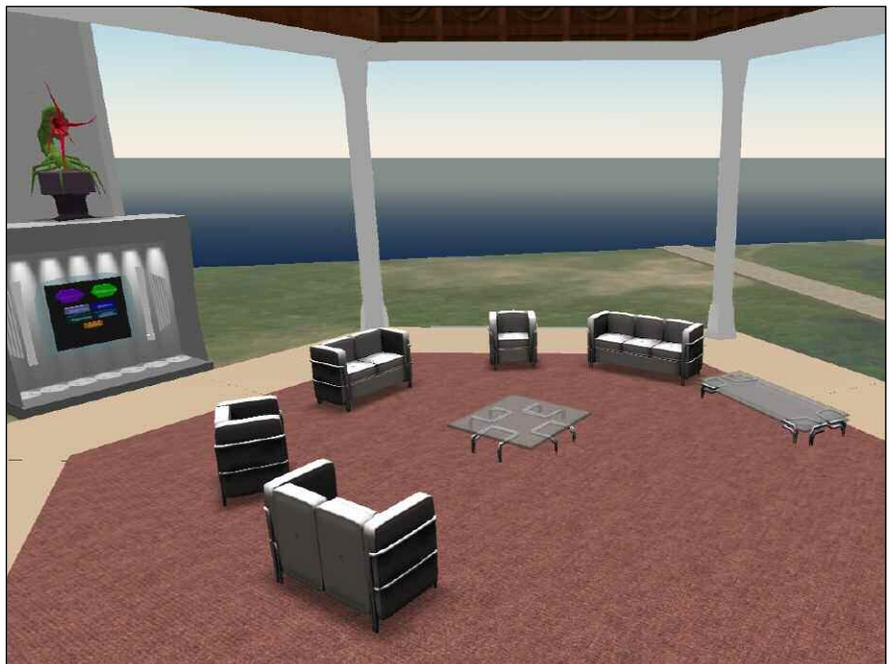
Earlier I showed you a Second Life lecture hall affiliated with Harvard Law School. The Berkman Center actually operates an extension school for law students from all over the world. An important part of a lawyer's training is in the courtroom. Since having a law student in an actual courtroom in an actual case is a difficult opportunity to arrange, risky for the client, and potentially involves a lot of "down time" during recesses, law schools have traditionally used mock trials and moot courts to simulate the experience.

Figure 3 on page 7 shows a court room "set" on Berkman Island where law students can role-play prosecution, defense, witnesses, judge, and jury. (Please pardon the apparently missing or broken posts in the railing – sometimes not everything renders properly in screen shots!) Let me repeat: this is role playing in e-Learning, and the payoff is huge for the law students who take part.

This is what the School says about the environment shown in Figure 3: "The Extension School audience experience will be mediated by participation in a 3D virtual environment called Second Life. Even to many seasoned computer and Internet users, the idea of a 3D virtual environment may sound more like a thing of science fiction or a video game. In fact, it is a cutting-edge development in teaching technology. The Second Life environment for Harvard Extension School participants permits us to foster a sense of community among students taking the course at a distance. It

Two formats that work well in the real world are somewhere in the middle of the formal-informal continuum. These are the panel discussion and the colloquium. Not surprisingly, Second Life supports these formats too.

Figure 2
Informal Conversation area, English Village (for English as a Second Language studies)



provides a rich medium for students to interact directly and satisfyingly with their instructors and their fellow students. With the aid of the Second Life environment, the Harvard Extension School students will participate in a semester-long small group project in which they will develop an argument for presentation at a moot court with another group of students as their adversaries. We will hold the moot court arguments in the Second Life environment with Harvard Law School students acting as judges." (<http://blogs.law.harvard.edu/cyberone/administration/course-description>)

In this example, notice how the design blends classroom, real-world instruction, group projects, and Second Life simulation to provide a powerful outcome that is undeliverable in any other way in an extension course. If you have a requirement similar to this for sales training, negotiation skills, diversity training, or any other communication-based skill, Second Life might be all you need.

Another way to facilitate learning in Second Life is to represent concepts as physical objects. At the Socrates campus of eLumenata University, residents can learn to use the many menus in Second Life by strolling through a virtual tutorial garden (see Figure 4). Each of the objects that you see on each level of the upward-spiraling garden is one of the menus. The user can click on the menu to receive instruction in its use. Users can take these levels in any order they desire, skipping the levels that address skills they already have.

Two formats that work well in the real world are somewhere in the middle of the formal-informal continuum. These are the panel discussion and the colloquium. Not surprisingly, Second Life supports these formats too. Figure 5 on page 8 shows an area in the InterLingua section of Cookie Island with a design that residents use for both of these purposes. InterLingua is another area designed for persons who are learning to speak English and who want an opportunity to practice. The small red robot visible on the far side of the area is actually a job aid that helps residents set up and adjust their Voice Chat – another way to learn. The conversation area in the figure is the site for panel discussions, colloquia, and other purposes, such as poetry readings, discussions by authors of novels, and artist presentations. (Cookie also supports a thriving population of writers and poets from around the world.) There are large group gatherings here at least once a week.

Some help getting started

Getting started in Second Life is very easy. Go to <http://www.secondlife.com> and download the client. Install it, connect to the Internet (Web browser not required to be running), and open Second Life. You will need to complete some registration details to set up your account.

With your account set up, connect to Second Life. Your first destination will be a tutorial area, where you learn to move, communicate, and adjust your appearance. Your first avatar will be your choice of a generic male or female or a "furry" (you'll see what a furry is when you get there). Don't worry too much over this, you can change everything later.

After you have completed as much of the tutorial as you feel you need, you can start to explore. If you click on "Map" at the bottom of your Second Life screen, you will be able to enter a destination name or coordinates and teleport there. You can always come back to the orientation area later, or you can use the Tutorial Garden at eLumenata University. Here are the addresses and coordinates of the places I've mentioned in this article:

- Berkman Island: Enter Berkman as the name of

 **Figure 3**
Court Room, Berkman Center for Internet and Society at Harvard Law School

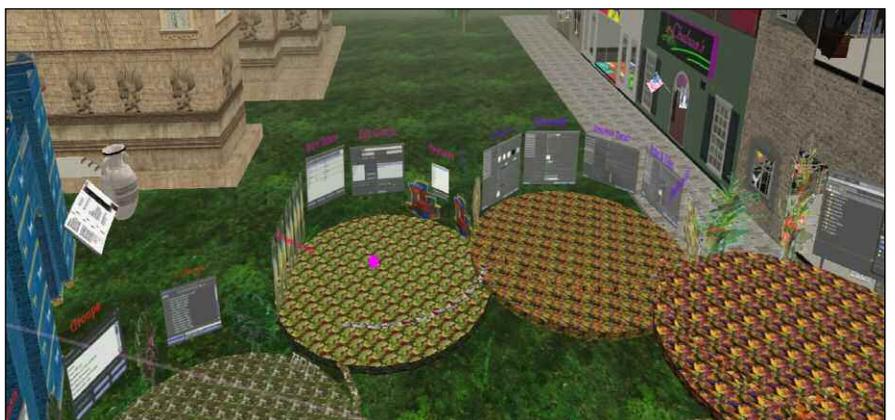


Figure 4 Tutorial Garden, Socrates Campus, eLumenata University

the destination and teleport. You can also enter coordinates 123/219/24 and arrive at the same place. Give XPecto's regards to Magnolia Beaumont if you should meet her.

- eLumenata University: Enter Socrates as the name of the destination, or coordinates 130/91/23 if you want to go directly to the start of the Tutorial Garden. Avatars labeled "Instructor" can be very helpful. If you see Xenon Darrow or Contessa Marquez there, tell them XPecto sends his regards.
- Cookie Island (InterLingua and ESL area): Enter Cookie as the name of the destination, or coordinates 26/136/21. If you happen to meet Thinker Melville, say hello (he owns the island), with XPecto's compliments. (Any avatar you see wearing a "Hobo" tag is a helper for newcomers – if you have any questions, just ask them. Hobo is another group of volunteers with the mission of assisting residents to use Second Life to its full potential.)

Conclusion

This has possibly been an information overload for you, but I hope it will prove helpful as you explore Second Life. It takes a couple of days of practice to get used to the in-world experience, and your avatar may be walking into walls, flying into buildings, or

In the Archives

This is the twenty-fourth article by Bill Brandon for Learning Solutions, on many different topics. The eLearning Guild has previously published articles whose topics relate to this week's. These are available to Members in the Learning Solutions Archive online. Members must log in to download them. Here are the authors, the article topics, and the publication dates. (*Not a Guild Member? Join today for immediate access to these articles and 231 others!*)

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falling off of cliffs for a couple of weeks before you master movement. I would focus on learning to navigate and to communicate before trying to build things. Residents are generally very helpful, especially if you show an interest in what they are doing and introduce yourself. Always ask for help.

In the next article, which will appear later this month, I will interview some of the residents who are making use of Second Life and its potential for learning. In my opinion, this environment is one that will be around for a long time, and one that you will be glad you took the time to investigate. In the meantime, I hope to see you around Second Life. Just look for a gray-haired, balding avatar named XPecto Tomorrow – you never know where he will turn up, and neither do I.

Author Contact



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 **Figure 5**
Town Center, InterLingua area

