

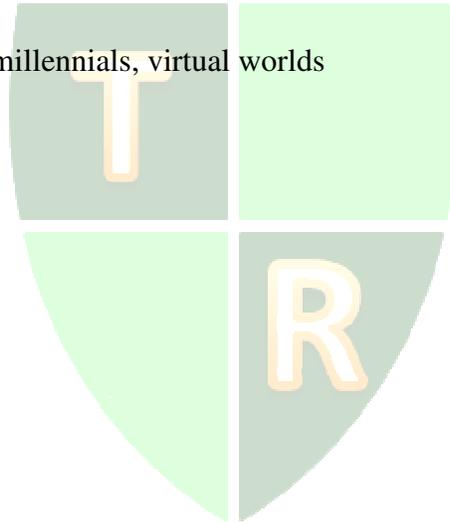
Virtual worlds and social networking: reaching the millennials

Raymond Papp
The University of Tampa

Abstract

As online communication and collaboration becomes more commonplace, universities are exploring the educational possibilities of online virtual environments for reaching the Millennials. Both virtual worlds and social networking constitute a large part of the Millennials' time and incorporating these technologies into the classroom can foster a more collaborative and diverse learning atmosphere. Virtual campus tours, recruiting, advising, simulations and classes are all part of the growing virtual environment. Corporate and educational institutions are exploring their use in cutting costs, delivering higher customer satisfaction and catering to a more tech-savvy clientele. Gaming and entertainment are no longer the only reason for virtual worlds and social networking. Come take a look at the cutting edge and what you may have overlooked.

Keywords: social networking, millennials, virtual worlds



Social Networking vs. Virtual Worlds

Social Networking and Virtual Worlds have taken the Internet by storm and are some of the most popular and used applications today. Even if you have not personally experienced a virtual world or joined a social networking site, the Millennials (students born between 1982 and 2000) definitely have and wonder why everyone else is not participating. Virtual worlds and social networking will be explored, both from an entertainment as well as pedagogical perspective, along with a discussion of how these on-line environments can be used to foster communication between teachers and students and enhance the learning process both inside and outside the classroom.

Social networking and virtual worlds, while similar in many aspects, actually have significant differences with respect to how users interact and communicate. A virtual world is an interactive simulated environment that allows multiple users to participate simultaneously via an online interface and has the following characteristics. First, it is a shared space allowing many users to participate simultaneously. It uses a graphical user interface to depict a visual space either in 2D or 3D. Interaction takes place predominately in real time and allows users to build, develop and submit customized content. A virtual world is persistent and continues regardless of whether individual users are logged in. Finally, a virtual world allows and encourages the formation of in-world social groups like teams, guilds, clubs, cliques, housemates, neighborhoods, etc. (What Is a Virtual World?, 2009).

Virtual Worlds

There are hundreds of virtual worlds to choose from, each targeting a different segment of the population. There are virtual worlds geared toward children such as Disney's Toontown, Club Penguin, and Pirates of the Caribbean (Disney, 2009). There are also virtual worlds for teens such as Whyville, Habbo Hotel and Second Life for Teens. Finally, there are virtual worlds geared toward adults such as The Sims Online, World of Warcraft, and Second Life. Thus, there is something for everyone and each virtual world shares the traits outlined above while focusing on a specific age group (Virtual Worlds List By Category, 2009).

Second Life, a three-dimensional virtual world created by San Francisco based company Linden Labs, was released in 2003. While other virtual worlds exist, none has matched the popularity of Second Life. This is due to its strong user base and strong attraction for new users, with some attributing its popularity to the large amount of varying in-world activities (Wagner, 2008).

Most virtual worlds are free to join, but some require additional fees to customize one's experience or purchase virtual "goods" such as clothes and accessories. This customization has resulted in a cottage industry of sorts. While anyone can create content and design objects in a virtual world, it does require considerable time and basic design skills. For those who prefer not to take the time, some items can be bought and sold online, tax consequences notwithstanding (Lederman, 2009; Terdiman, 2007).

Most virtual worlds allow their users to create an "avatar" (from the Sanskrit word for "a form of self") which is a computer user's self-representation or alter ego. This avatar can be a realistic facsimile of their real identity or, in the case of many virtual worlds like Second Life, can be a robot, animal, mythical creature or other graphical representation (Avatar, 2009; Fetscherin and Lattemann, 2008; Conway, 2007). In many virtual worlds, this avatar can be

controlled using the keyboard and can often communicate (using speech or text) with other avatars in real-time. While avatars can be made to look like just about anything, sometimes a non-human avatar is not appropriate, such as during an interview or a meeting (Taylor, 2009). According to a recent estimated published by Gartner Group, 80 percent of active Internet users will have a virtual presence in the form of an "avatar" in at least one virtual world by the end of 2011 (Wang and Bramen, 2009).

Avatars in Second Life can communicate through chat, instant messaging, and even voice chat since 2007. Movement through Second Life is done via walking, flying or teleportation. Avatars can even ride in vehicles or boats as they explore their virtual world. Land is also available for purchase in sizes ranging from lots (512 m²) to entire private islands. Virtually anything one could want can be built (for a price). Avatars interact with each other in public and private places that mirror real life settings (e.g. shopping malls, bars and nightclubs, historical places, etc.) or may be user-developed alternative realities.

What makes Second Life different from other virtual worlds is that residents own the material and content they create in Second Life and may sell it to others users in exchange for virtual money known as Linden Dollars (L\$). These Linden Dollars may then be exchanged for real currency via the *Second Life* Exchange at a floating exchange rate that is approximately L\$260 per U.S.\$1. Income earned in Second Life may be kept in a virtual bank (and earn interest) or exchanged. Income earned in Second Life can be substantial and complement one's real life salary (Kaplan and Haenlein, 2009).

Social Networking

Social Networking sites like MySpace, Facebook and LinkedIn are similar to virtual worlds in that they offer a certain degree of virtual communication and interaction, yet the user need not create an avatar to interact with others and most interaction is done asynchronously with a time delay. Facebook is probably the closest to a virtual world in that it offers online games by Zynga such as Farmville, CafeWorld, YoVille and Happy Aquarium where users can interact with each other, however not in real-time like virtual worlds. LinkedIn is similar to Facebook, but is geared to those interested in professional networking and job seekers rather than casual social interaction and friendships. MySpace is similar to Facebook and has games like Zombie Wars and World Domination (<http://apps.myspace.com/Modules/AppGallery/Pages/index.aspx?category=7&st=totalinstalls>).

By connecting these games to Facebook and MySpace, people in a user's friends list can see each other's progress in these games. These games also cleverly push a socialist agenda by delivering messages such as "share the wealth" and "adopt a stray". While these contemporary messages are probably harmless, other games like Sorority Life (made by Playdom) promote a narcissistic culture where the goal is to be the most popular at any cost. Users get points for fighting each other, for their looks and for the "jobs" they do (see Figure 1). Any money you make is also "taxed" 10% and given to charity without your say. Clearly, the game developers are trying to influence the users with contemporary political ideologies central to the current government. Many other games such as Mafia Wars simply advocate violence. "The game revolves around doing and mastering jobs in order to earn cash and experience, with the goal of establishing and advancing one's criminal empire. Players create mafias by recruiting players and using reward points to hire extra mafia members. Social networking sites such as Facebook, MySpace and Friendster allow players to recruit from within their network of friends to build

their mafia and fight against other players. Players can also improve their stats by visiting the Godfather or making a micropayment” (Mafia Wars, 2009; Graft, 2009).

Figure 1: Sorority Life Website



Source: <http://www.blogcdn.com/blog.games.com/media/2009/11/sorority-life-intro.jpg>

While a detailed psychological analysis of the social implications of these games is beyond the scope of this paper, the clear agenda and goal of some of these games is disturbing to the authors, despite being popular with the Millennial generation. At least Farmville encourages you to “help your neighbor” on their farm and does not allow you to attack them or send them a plague of locusts!

Entertainment vs. Pedagogical

Now that the differences between virtual worlds and social networking have been explored, let’s look at how these environments can be used both from an entertainment as well as pedagogical perspective.

For the purpose of this comparison, we will focus on Second Life as a representative virtual world and Facebook as a representative social networking site. Many of the characteristics and traits which we will attest to these sites can, in fact, be generalized to other virtual worlds and social networking sites. These examples were chosen based on their popularity and acceptance within each respective category.

Second Life markets itself as a true virtual world where a user can do anything they would (or would NOT) do in real-life. Since Second Life is targeted toward adults, a user can have a myriad of “real” interactions in a virtual setting, including sports, travel, entertainment and “biological” experiences. One reason for using Second Life is clearly for entertainment and to try things that one might never want to do in “real life” for fear of legal, social or moral consequences. Another use of Second Life is to explore new places by walking through a

representation of the Louvre, inspecting the Great Pyramids or sailing the Caribbean. Finally, Second Life can be used for commerce. Users can shop in a company's store, explore their products and services or even take a class and learn something new.

Many companies have created a virtual presence in Second Life to simulate their real world company. Most of the major companies have some sort of site allowing users to find out more about their company or, in some cases, actually purchase products from the virtual store. For example, Dell built a computer on its island which allows avatars to explore it and see how a computer works. (Kaplan and Haenlein, 2009). Other sites that have not created innovative content or updated their stores have left Second Life as users lost interest in them. Other companies like Walt Disney and Wells Fargo are seeking alternative virtual worlds with both greater security against hackers and control over such things as brand messaging and participants (Beyond Second Life, 2009).

Figure 2: Dell's Island In Second Life



Source: http://farm1.static.flickr.com/107/300647570_e4def4f893.jpg

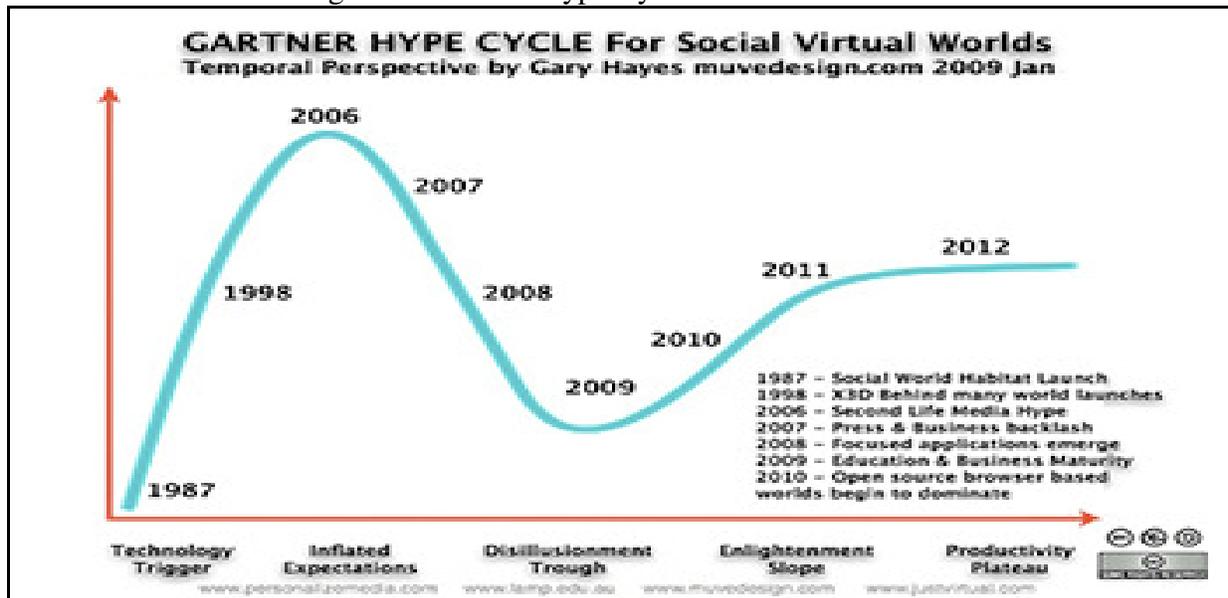
The Millennial generation as well as their younger siblings like to gather information virtually when it is convenient for them and shop long after conventional stores are closed. By having a virtual presence in Second Life that is open 24x7, users can interact with company representatives and even purchase products whenever they wish. Second Life takes the Internet sites' virtual chat to a new level as people can interact and communicate avatar to avatar. While this may seem foreign to older individuals, it is a growing trend and companies are catering to this generation that embraces an "always-open" mindset.

Another benefit to Second Life is the ability to try out a product before actually committing to buying it. Cars, clothes, and even real estate can be modeled realistically in Second Life and provide the user with an experience. Starwood hotels, for example, created a detailed, realistic mock-up of a hotel it planned to build and invited people to come and look around. They received very detailed feedback from the type of décor in the rooms, to the layout of the lobby and the amenities provided. Starwood took this feedback into consideration when they built the actual hotel, saving a significant amount of money by not having to make these

changes in real-time and resulting in a more satisfied clientele in the actual hotel (Jana, 2006). Recently, however, Starwood announced that it was pulling out of Second Life, having received the feedback it needed and a realization that “avatars don't need to sleep, and so a virtual hotel didn't make much sense in the long run” (Beyond Second Life, 2007, 1).

Despite some disillusionment with Second Life, it is still the most popular virtual world with over half a million users logged in over the past 30 days (Au, 2009; Wauters, 2009). The diagram depicts the “hype cycle” for virtual worlds, suggesting that, after a brief period of disillusionment, a renewal in interest is coming (Glaser, 2009; Carpenter, 2009).

Figure 3: Gartner Hype Cycle for Virtual Worlds



Source: Glaser, 2009

Moving Beyond Entertainment

Second Life has grown beyond its humble beginnings and, much like the Internet, is no longer just a place to put a virtual billboard or publish basic corporate information. IBM, for example, recently used Second Life to hold a virtual meeting and saved, in its estimation, a quarter of a million dollars in travel and venue costs (Morrison, 2009). Other companies such as Amazon are taking advantage of the site’s accessibility and holding job interviews online (Amazon Second Life Job Fair, 2009). Conferencing has become the new darling of Second Life and companies are realizing that in today’s difficult economic climate, they can save money by using virtual worlds. According to Linden Lab, creators of Second Life, “more than 1,400 organizations -- including large companies, educational institutions, government agencies and even the U.S. military -- use Second Life to hold meetings, conduct training and prototype new technologies more efficiently” (Tutton, 2009; Carr, 2009). The government is even joining in. Capitalizing on its success with social networking during the 2008 election, a speech delivered in Ghana in July 2009 was streamed to Second Life (Cooper, 2009).

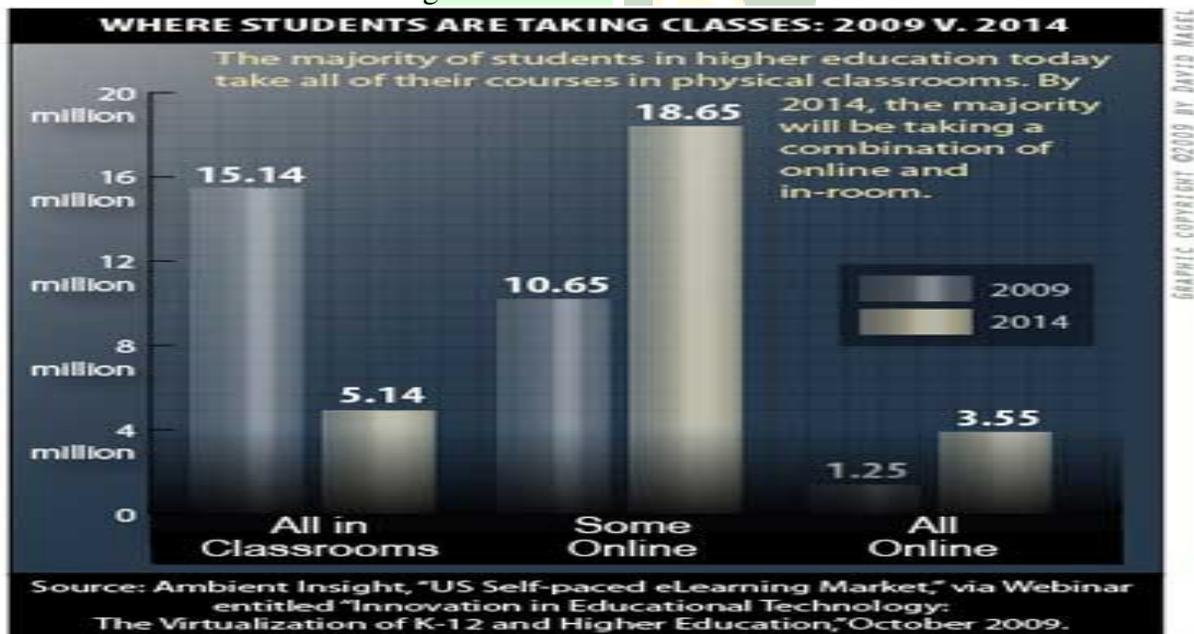
While Second Life has been largely ignored as of late as technologies like Twitter receive all the buzz, Second Life has quietly increased its member base as well as its revenues, estimated

to be \$100 million in 2009 (O'Brien, 2009; MacManus, 2009). A group that is embracing Second Life is educational institutions. There are now over 300 colleges and universities in Second Life and that number is growing annually (Greer, 2009). Colleges and universities, like corporations, are looking at ways to reach younger clients and save on operating costs. Given the younger students' propensity for computer technology, many educational institutions are now offering classes in Second Life. Ball State recently offered a class in Second Life titled "Building 101: The Building Blocks of Second Life" (Greer, 2009). Although many educational institutions jumped on the bandwagon in 2006 and created sites in Second Life, some have abandoned them. Others, like the University of Delaware, have built detailed mock-ups complete with 5-minute flyover tours of the campus. Stanford University has recreated its Rare Books Collection, allowing visitors to page through non-circulating rare books. Montclair State University in New Jersey has several sites that bring literature to life. The Edgar Allan Poe exhibit is a virtual house based on the house in the short story "The Fall of the House of Usher" where visitors can read the text of several of Poe's works. (Harrison, 2009).

Shift to On-line Classes

While some educational institutions are clearly in the forefront regarding use of virtual worlds, all institutions will need to adapt to changing student populations and needs. The next five years will see a dramatic shift in the number of students taking classes on-line versus the traditional classroom. Driven by financial as well as social needs, more classes will be offered on-line, including entire programs at some institutions. The chart below illustrates this trend (Nagel, 2009).

Figure 4: Shift to Online Classes



Source: Nagel, 2009

One university that is ahead of this curve is St. Leo University in Dade City, Florida. As a pioneer in on-line education catering to students unable to attend classes at a physical campus, St. Leo developed a comprehensive presence in Second Life in 2008 and now has three islands

and offers classes supporting its 10,000 online students and 1,700 on-campus students. The university's presence is even responsible for enrolling students on-line who had never heard of St. Leo before visiting Second Life (Linden, 2009).

Another example of a university using Second Life is Texas A&M. They have 10 virtual classrooms and have duplicated many buildings and landmarks on their campus. Despite their landlocked real campus, students visiting the virtual campus can spend some time relaxing at the virtual beach adjacent to campus (TAMU Second Life Campus, 2009). In a virtual world, geography does not matter!

Ohio University, a pioneer in Second Life with a campus dating back to 2007, offers virtual learning kiosks (Ohio University Second Life Campus, 2009), while newcomer Hong Kong Polytechnic University opened its PolyU virtual campus on Second Life in September 2009. "PolyU is known for its innovation in teaching, research and applied learning...we are the first educational institution in Asia with a virtual campus in Second Life. This digital platform readily provides both academics and students with exciting opportunities to enrich their teaching and learning experience" (PolyU opens Virtual Campus in Second Life, 2009).

James Madison University's virtual campus offers courses in Art History and Marketing, among other subjects. The art course met on JMU's Second Life campus and then teleported to the Parthenon, for example, to analyze its virtual representation in comparison to that presented in the course reading. Modes of communication aside, "Second Life offers high-quality opportunities not available anywhere else. For instance, it allows students to experience exotic places like Stonehenge, the Parthenon of Ancient Greece and the Stepped Pyramid of Djoser in Egypt" (Prior, 2009, 1).

These examples represent just a few of the many virtual educational institutions that exist. Once an institution has built their virtual campus, the next challenge becomes staffing it. Universities must explore how faculty and staff can interact in the virtual campus and plan for a future in education that clearly includes on-line education.

Interacting in a Virtual World

Changes in technology have provided universities with more creative ways to reach the student population. Many universities have begun to use virtual world to conduct classes, allowing students to take a virtual tour of their university campus and to expose students to a different world of learning with wide range of tools that are very different from those used in the traditional classroom.

Campus Tours and Advising

Second Life allows admission counselors and educators to interact with current and prospective students through virtual worlds. Many universities offer virtual tours for prospective students who cannot visit the campus or want more information about the institution. This is not limited to just prospective students either. In November 2009, Pennsylvania State University announced that academic advisers at the university's online campus are now required to be available weekly for meetings with students in the virtual world weekly (Penn State World Campus Island in Second Life, 2009). The PSU faculty and staff are using emerging technologies to build community with online students, and "there hasn't really been any resistance to the requirement – just adjustment to a new technology". (Parry, 2009, 1).

Another way to reach prospective students is to hold a virtual college fair on Second Life as 36 institutions did in October 2009 (College Fair 2009, 2009). Such fairs, coupled with virtual campus tours—like the University of Delaware’s complete with a detailed mock-up of its campus and a 5-minute flyover tour—enable students to get a good feel for campus life without having to travel to the actual campus (Harrison, 2009). These virtual campus tours allow students to experience the campus just as they would if the students were present on campus, yet without incurring the high cost of traveling to the real campus. Many universities have huge campuses built on islands which replicate the real life campuses. Prospective students can visit the dorm rooms, cafeteria and chat with other students and admissions counselors. Universities are using virtual worlds like Second Life to supplement their traditional recruiting methods to compete more effectively.

Educational institutions believe so strongly in Second Life as a networking and marketing tool that some are staffing their sites with employees. Education using Second Life requires just that—an adjustment. While students may eagerly take to this new technology, instructors and staff may have a harder time. Nevertheless, to stay competitive in academia requires such steps. “Embracing technology-based teaching methods is necessary to keep up with today’s students, said George Barnes, director of UTD’s Global MBA Online Program. “It’s not necessarily a better way to teach, but it’s a different approach that’s attractive to some younger people”(Goolsby, 2008, 1).

Guest Speakers

Professors now have the option of inviting guest speakers to their classrooms in Second Life. The guest speaker, professor and the students log on to Second Life at a designated time to be present for the lecture. The different avatars can then listen to the guest speak, and ask him/her questions. This option has the advantage of gaining access to speakers who cannot be physically present at a particular university due to geographic constraints. Seminars and workshops are becoming popular in Second Life, not only with universities, but with other organizations because virtual campuses are more economical and can cater to a large population without any space restrictions.

Another benefit of virtual worlds is the ability to “allow the world to become the classroom. Because of easy access to the virtual world, the lesson can be open to anyone; it is not confined to a single classroom or a single set of students. This allows students to easily work across boundaries with others who may have different cultures, values, and interests” (Harris & Rea, 2009, 141).

Reenactments and Simulations

It is possible to use virtual worlds for role playing and historical reenactments. Many companies place recruiters in World of Warcraft, for example, to study people’s leadership and social interaction skills. Someone that is not an outward leader in public life may exhibit these qualities in a virtual world where there is more anonymity (Brown and Thomas, 2006). Second Life’s developers have created some dramatic representations of real world places. Users can visit the virtual Louvre or watch a Shakespeare play and interact with the people around them. It is even possible to reenact a famous battle and play “Monday morning quarterback” to see if

your battle plans change the outcome for the better. All of these things can be used to enhance students' learning and appreciation from the comfort of their laptop.

In December 2008, the U.S. Air Force launched a virtual interactive environment called MyBase. The goal of this virtual Air Force base is threefold: training, education and recruiting. In MyBase, users can take a virtual tour of the base, take a virtual flight, interact with other visitors, and learn about Air Force careers. The Air Force intends to expand the public site and create a secure site that will be "established for education and training, including certification and degree programs. Future secure versions will recreate operational environments, such as an air base in Iraq where Air Force members would train and meet others with whom they would deploy" (Noor, 2009, 25).

Figure 5: MyBase in Second Life



Source: <http://blogs.airspacemag.com/daily-planet/files/2009/08/mybase15.jpg>

Virtual Classes

As previously mentioned, many schools are conducting classes in Second Life. Professors and students logon at a designated time and the professor conducts a class in Second Life. The premise of conducting classes online is to give students hands-on experience in the related field. It also encourages more participation and an exchange of ideas in a more casual, relaxed environment. In schools like USC's School of Engineering, classes are conducted to give students hands on experience for animation and modeling skills. The professors say that they want to give students exposure to what the industry is seeking from prospective graduates. The University of Hamburg uses virtual worlds where the virtual and reality are merged. A lecture taking place in a classroom is also attended by off-campus students via video streams and other media streamed to Second Life (Dreher, et. al., 2009).

In addition to classes, virtual worlds can be used for virtual office hours and supplement traditional on-campus office hours. Students often find real-time office hours inconvenient and

like the ability to interact with their instructors in a virtual setting at more convenient times (Li and Pitts, 2009).

Benefits and Drawbacks

There are a number of benefits and drawbacks to using virtual worlds. These include computer problems, cost issues, a learning curve, as well as legal, ethical and social considerations. Virtual worlds and social networking require computers with adequate hardware and software as well as reliable network connections. This is usually not a problem today, however, Internet access can be problematic given a user's location (Bainbridge, 2007). Some virtual sites like Second Life incur fairly substantial costs for institutions and land. Then there is the cost of developing the physical buildings and staffing the campus with people. The learning curve, particularly for older people who are less computer-savvy, can be significant. Finally, since virtual worlds are largely uncontrolled and run by their members, there are legal, social and moral issues to contend with as users can, for example, roam around naked or proposition another user at will.

Economic factors also influence the development and, ultimately the success of virtual worlds. Second Life is based on a virtual currency that is tied to real currencies. As such, legal rules and social norms require some form of government. In 2007, Linden Labs announced a ban on in-world gambling in response to an FBI investigation. As of 2008, only real companies who were able to provide proof of an applicable government registration statement or financial institution charter would be allowed to offer interest on currency. The resulting fallout and the collapse of several virtual banks resulted in Second Life's economy to be halved and a new direction in financial commerce to begin (Kaplan and Haenlein, 2009). Much like the banking failures experienced recently in the real world, virtual worlds are alike in more ways than they are different and residents be actively involved in their world.

Given the pros and cons of a university presence on Second Life (or any virtual world), administrators will need to make careful decisions of whether they wish to have a presence in this new technology arena. Clearly, virtual worlds provide a rich learning environment, foster increased interest by students, expose them to a different medium of learning and match their technology interests and need for social networking. Since not all students may enjoy virtual worlds, they should be one tool in an arsenal of many used in the classroom (Matulich, Haytko, and Papp, 2008).

The Future

Research has shown that in 2000, web-based technologies have been employed in 42.7% of college courses compared to 10.9% of courses in 1995 (Jennings and Collins, 2008). While it is difficult to predict which platforms and technologies will survive into the future, clearly virtual worlds and social networking are two areas that necessitate further study. The Millennials (and those who will come after them) are "digital natives", having grown up with technology (Prensky, 2001). The cost and resource pressures faced by educational institutions is increasing and virtual worlds and social networking are ways to compete globally using the ever-growing Internet. If Nagel's (2009) predictions are true, the next five years may be very telling in the development of online education. Think back to the early days of the Internet and the naysayers that existed then. Now look at the Internet of today. Do you want to be caught off-guard with

respect to the next major innovation in technology? Start small and open a Facebook account. Students and friends will find you. Explore a virtual world like Second Life. Hang gliding or auto racing is safe and your avatar cannot die. Be prepared for the coming revolution in technology. It's really not as scary as it seems. It's even fun!

References

- Amazon Second Life Job Fair (2009). Amazon Web Services Blog (July 14, 2009). Retrieved December 14, 2009 from <http://aws.typepad.com/aws/2009/07/amazon-second-life-job-fair.html>
- Au, W. (2009). Exclusive: Second Life Starts To Grow Again. Gigaom: Trusted Insights and Conversations on the Next Wave of Technology. (April 15, 2009), Retrieved December 14, 2009 from <http://gigaom.com/2009/04/15/exclusive-internal-second-life-data-shows-returning-growth/>
- Avatar (2009). Retrieved December 14, 2009 from [http://en.wikipedia.org/wiki/Avatar_\(computing\)](http://en.wikipedia.org/wiki/Avatar_(computing))
- Bainbridge, W.S., (2007). The scientific research potential of virtual worlds, *Science*, 317, 472–476.
- Beyond Second Life (2009). *Business Week* (June 11, 2007). Retrieved December 14, 2009 from http://www.businessweek.com/magazine/content/07_24/b4038417.htm
- Brown, J.S. and Thomas, D. (2006), "You play World of Warcraft? You're hired!", *Wired*, Iss. 14.04., April 2006.
- Carpenter, H. (2009). Gartner Hype Cycle 2009: What's Peaking, What's Troughing? « I'm Not Actually a Geek. (July 27, 2009). Retrieved December 14, 2009 from http://www.google.com/imgres?imgurl=http://bhc3.files.wordpress.com/2009/07/gartner-emerging-technologies-hype-cycle-2009.png%3Fw%3D552%26h%3D451&imgrefurl=http://bhc3.wordpress.com/2009/07/27/gartner-hype-cycle-2009-whats-peaking-whats-troughing/&h=451&w=552&sz=161&tbnid=NBoPwKfSlg8LBM:&tbnh=109&tbnw=133&prev=/images%3Fq%3Dgartner%2Bhype%2Bcycle%2B2009&hl=en&usq=81HgM431DOYFWG4-1H1PeaggE8U=&ei=bIomS8KSA82vtgeq0qjXBw&sa=X&oi=image_result&resnum=4&ct=image&ved=0CBMQ9QEwAw
- Carr, D. (2009). Second Life demonstrates mingling of real and virtual worlds. *Government Computer News* (December 4, 2009). Retrieved December 14, 2009 from <http://gcn.com/articles/2009/12/04/new-technologies-inject-real-world-data-into-virtual-worlds.aspx>
- Castranova, E. (2005). *Synthetic Worlds: The Business and Culture of Online Games*, Chicago, IL: University of Chicago Press.
- College Fair 2009 (2009). The 2009 edition of the College Fair in Second Life! Retrieved December 14, 2009 from <http://groups.google.com/group/second-life-college-fair/web/college-fair-2009>
- Conradi, E., Kavia, S., Burden, D., Rice, A., Woodham, L., Beaumont, C., Savin-Baden, M., & Poulton, T. (2009). Virtual patients in a virtual world: Training paramedic students for practice. *Medical Teacher*, 31(8), 713.

- Conway, C. (2007). Professor Avatar. Inside Higher Ed. Retrieved December 14, 2009, from <http://www.insidehighered.com/views/2007/10/16/conway>
- Cooper, C. (2009). The Obama White House's First Try At Second Life. CBSNews.com (July 10, 2009). Retrieved December 14, 2009 from <http://www.cbsnews.com/blogs/2009/07/10/politics/politicalhotsheet/entry5151594.shtml>
- Disney (2009). Retrieved December 14, 2009 from <http://disney.go.com/games/#/games/>
- Dreher, C., Reiners, T., Dreher, N., & Dreher, H. (2009). Virtual Worlds as a Context Suited for Information Systems Education: Discussion of Pedagogical Experience and Curriculum Design with Reference to Second Life. *Journal of Information Systems Education*, 20(2), 211-224.
- Fetscherin, M. and Lattemann, C. (2008), "User Acceptance of Virtual Worlds." *Journal of Electronic Commerce Research*, 9 (3), 231-242.
- Glaser, M. (2009). Reuters Closes Second Life Bureau, but (Virtual) Life Goes On. *Media Shift* (February 19, 2009). Retrieved December 14, 2009 from <http://www.pbs.org/mediashift/2009/02/reuters-closes-second-life-bureau-but-virtual-life-goes-on050.html>
- Goolsby, K. (2009). Using Second Life, colleges create parallel universities. *The Dallas Morning News* (Sunday, June 8, 2008). Retrieved December 14, 2009 from http://www.dallasnews.com/sharedcontent/dws/news/localnews/stories/DN-secondlife_08met.ART.State.Edition2.468256f.html
- Graft, C. (2009). Social Game *Mafia Wars* Hits 4 Million Daily Users. *Gamasutra* (July 2, 2009). Retrieved December 14, 2009 from http://www.gamasutra.com/php-bin/news_index.php?story=24307
- Harris, A., & Rea, A.. (2009). Web 2.0 and Virtual World Technologies: A Growing Impact on IS Education. *Journal of Information Systems Education*, 20(2), 137-144.
- Harrison, D. (2009). Second Life: Engaging Virtual Campuses. *Campus Technology* (March 4, 2009). Retrieved December 14, 2009 from <http://campustechnology.com/Articles/2009/03/04/Second-Life-Engaging-Virtual-Campuses.aspx?Page=1>
- Hof, R. (2007). Second Life's First Millionaire, *Business Week*, November 26, 2007.
- Jana, R. (2009). Starwood Hotels Explore Second Life First. *Business Week* (August 23, 2006). Retrieved December 14, 2009 from http://www.businessweek.com/innovate/content/aug2006/id20060823_925270.htm
- Jennings, N., and Collins, C. (2008), "Virtual or Virtually U: Educational Institutions in Second Life." *International Journal of Social Sciences*, 2 (3), 180-186.
- Kaplan, A. M. and Haenlein, M. (2009). The fairyland of Second Life: Virtual social worlds and how to use them. *Business Horizons*, 52(6), November-December 2009, 563-572.
- Linden, P. (2009). Saint Leo University - Building a successful campus community in Second Life. *Second Life: Learning Inworld* (July 17, 2009). Retrieved December 14, 2009 from <https://blogs.secondlife.com/community/learninginworld/blog/2009/07/17/saint-leo-university--building-a-successful-campus-community-in-second-life>
- Lederman, L. (2009). EBay's Second Life: When Should Virtual Earnings Bear Real Taxes? *The Yale Law Journal*, January 26, 2009
- Li, L. and Pitts, J. (2009). Does It Really Matter? Using Virtual Office Hours to Enhance Student-Faculty Interaction. *Journal of Information Systems Education*, 20(2), 175-85.

- MacManus, R. (2009). Gartner Hype Cycle 2009: Web 2.0 Trending Up, Twitter Down, Gartner.com, (August 11, 2009). Retrieved December 14, 2009 from http://www.readriteweb.com/archives/gartner_hype_cycle_2009.php
- Mafia Wars (2009). Wikipedia, the Free Encyclopedia. Retrieved December 14, 2009 from http://en.wikipedia.org/wiki/Mafia_Wars
- Matulich, E., Haytko, D., and Papp, R. (2008). Continuous Improvement Through Teaching Innovations: A Requirement for Today's Learners. *Marketing Education Review*, 18, 1-7.
- Morrison, S. (2009). A Second Chance for Second Life. *The Wall Street Journal*. (August 19, 2009), A27.
- Nagel, D. (2009). Most College Students To Take Classes Online by 2014. *Campus Technology* (October 28, 2009). Retrieved December 14, 2009 from <http://campustechnology.com/Articles/2009/10/28/Most-College-Students-To-Take-Classes-Online-by-2014.aspx?>
- Noor, A. (2009). Disruption from the Virtual World. *Mechanical Engineering*, 131(11), 22-28.
- O'Brien, C. (2009). Twitter, meet Second Life. *MercuryNews.com* (October 10, 2009). Retrieved December 14, 2009 from http://www.mercurynews.com/chris-obrien/ci_13517103?source=rss
- Ohio University Second Life Campus (2009). Retrieved December 14, 2009 from <http://slurl.com/secondlife/Ohio%20University/81/202/27>
- Parry, M. (2009). Second Life Duty Is Now Required for Penn State's Online Advisers, *The Chronicle of Higher Education*, November 09, 2009.
- Penn State World Campus Island in Second Life (2009). Retrieved December 14, 2009 from <http://www.worldcampus.psu.edu/advising-in-second-life.shtml>
- PolyU opens Virtual Campus in Second Life (2009). *PRLog Free Press Release* (September 28, 2009). Retrieved December 14, 2009 from <http://www.prlog.org/10356417-polyu-opens-virtual-campus-in-second-life.html>
- Prenkys, M. (2001). "Digital Natives, Digital Immigrants." *On the Horizon*, 9(5). Retrieved December 14, 2009 from http://pre2005.flexiblelearning.net.au/projects/resources/Digital_Natives_Digital_Immigrants.pdf
- Prior, F. (2009). Getting Digital in 'Second Life' *The Breeze* (November 12, 2009). Retrieved December 14, 2009 from <http://breezejmu.org/2009/11/12/getting-digital-in-%E2%80%98second-life%E2%80%99>
- Schiller, S. (2009). Practicing Learner-Centered Teaching: Pedagogical Design and Assessment of a Second Life Project. *Journal of Information Systems Education*, 20(3), 369-381.
- Shellito, L. (2009). Students experience virtual Miami on Second Life. *The Miami Student* (February 13, 2009). Retrieved December 14, 2009 from <http://media.www.miamistudent.net/media/storage/paper776/news/2009/02/13/Campus/Students.Experience.Virtual.Miami.On.Second.Life-3629132.shtml>
- TAMU Second Life Campus, (2009). Retrieved December 14, 2009 from http://itsinfo.tamu.edu/Home/Services/TAMU_Second_Life_Campus.php
- Taylor, M. (2009). Your Second Life Avatar Is Dressed Inappropriately. *The Wall Street Journal* (October 9, 2009). Retrieved December 14, 2009 from

- <http://blogs.wsj.com/digits/2009/10/09/your-second-life-avatar-is-dressed-inappropriately/>
- Tutton, M. (2009). Going to the virtual office in Second Life. CNN. (November 9, 2009). Retrieved December 14, 2009 from <http://www.cnn.com/2009/BUSINESS/11/05/second.life.virtual.collaboration>
- Virtual Worlds List By Category (2009). Virtual Worlds Review. Retrieved December 14, 2009 from <http://www.virtualworldsreview.com/info/categories.shtml>
- Wagner, M. (2008). Second Life's Popularity Rests On Breadth Of Activities , Information Week (September 25, 2008). Retrieved December 14, 2009 from http://www.informationweek.com/news/personal_tech/virtualworlds/showArticle.jhtml?articleID=210602197
- Wang, Y., & Braman, J. (2009). Extending the Classroom through Second Life. Journal of Information Systems Education, 20(2), 235-247.
- Wauters, R. (2009). Does Anybody Still Use Second Life? And If So, How Much Is It Worth Today? Tech Crunch (July 2, 2009). Retrieved December 14, 2009 from <http://www.techcrunch.com/2009/07/02/does-anybody-still-use-second-life-and-if-so-how-much-is-it-worth-today/>
- What Is a Virtual World? (2009). Virtual Worlds Review. Retrieved December 14, 2009 from <http://www.virtualworldsreview.com/info/whatis.shtml>

