101 Uses for Second Life in the College Classroom

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1. INTRODUCTION AND HISTORY OF THIS DOCUMENT

The 1.0 version of this document was originally presented as part of the Second Life Symposium at the Games, Learning, and Society Conference [1], June 23-24, 2005 in Madison, WI. The featured speakers for this symposium were Cory Ondrejka and James Cook with *Brace for Impact: How User Creation Changes Everything* [2].

In my short portion of that same symposium, I presented a variety of ways to use the online virtual world Second Life in the college classroom. Second Life is a 3-D virtual world created by Linden Lab [3] in 2003. In 2004, the company launched an innovative educational program which makes the software free for approved university courses [4].

My piece of this symposium began with a brief discussion of how I have used Second Life in my own classes. Although I am a faculty member in the Computing Sciences department at Elon University [5], I teach a 300-level General Studies course that is designed for 3rd and 4th year students from all majors to meet their general education

requirements. My course (*Imagining Technology*) focuses on the future of technology, and it has a different theme each year (inventions, hacking, virtual communities, artificial intelligence, etc). Second Life helps me meet my course goals in a variety of ways, which I will share with you in this document.

The information presented at the conference and summarized in this handout (and now updated in the 2.0 version) is based on my personal experience using the software, as well as my readings and ideas for how a variety of academic disciplines might be able to make use of the software. These ideas are grouped and outlined in an easy-to-read format for the participants to refer to later, and include listings of sample assignments, essay topics, discussion topics, and in-world activities that I have developed for use by my students.

2. GETTING STARTED

2.1 Physical Setup

The physical requirements of the machine running SL are a significant consideration when planning lab space for your course. You will need sufficient graphics cards and bandwidth for each machine that will be connecting.

In addition to these physical requirements, the SL software (client) may need to be upgraded frequently. This requires that a user get the new client either by (1) going to the downloads area of the Second Life web site [6], then getting the newest client for the correct operating system, or by (2) trying to run the software and following the "upgrade now" prompts. In either case, the new software will need to be saved to the file system on the local machine. This will require some write privileges on the machine. Some educators have indicated that this can be an issue if their lab machines are using a disk image that is overwritten each day.

To cut down on class time spent on doing these tedious installation procedures, I went to the lab each day before class and logged into the machines, then upgraded each of them individually. This way, the students could jump right into their work and we wouldn't waste class time downloading Second Life clients for all the computers.

2.2 Bandwidth

In addition to graphics card requirements, SL takes quite a bit of network bandwidth. In the SL forums and on blogs, serious home players often talk about having dual highspeed "his and hers" solutions (one person will use cable, one person DSL) to try to avoid some of the lag associated with pulling massive amounts of data over the wire for rendering on the client machines. In my case, it turned out that this was not a problem in our particular lab. My original plan for the first day of in-class SL use was to bring up each section of the lab separately, 5 students at a time.

2.3 Downtime

From time to time while I was teaching my classes, Second Life would schedule some maintenance downtime during class periods that I had set aside for in-world assignments. This didn't happen often, but as with any classroom technology, I had to remember to have some alternative activities planned for every class "just in case". Current practice for making users aware of downtime is to announce them via the Second Life blog [7].

2.4 Introductory Materials (Books, Blogs, Wikis)

Wiley has recently published a book about Second Life [8] that is fairly interesting reading. It is aimed at the beginning user and would be appropriate as a textbook to give some structure to the way students approach their experience in the world.

For classes in 2005, I printed copies of the *Second Life User Handbook* (no longer available) for each student. At the time, this was the only documentation available. In retrospect, I'm not sure how many of them actually read the handbook -- most students preferred to just jump right in and start clicking around. Probably many other users felt similarly, since this User Handbook is no longer available for download.

Since then, the handbook has been replaced on the SL web site by a *Knowledge Base* for issues, *Handy Guides* for doing a few key tasks, and the wiki and forums for community-specific or topic-specific information. There is literally a wealth of information now on the SL web site. The problem for instructors in 2007 will be in sorting through everything.

On the SL education page [4] are also pointers to mailing lists such as the SLED list (education focus) and the SLRL list (research focus). These lists would not be appropriate for most undergraduates, but students performing research might find the archives helpful. Instructors should be aware that these lists are high-volume (SLED is *very* high volume), but there is a digest mode available if you prefer to get only one message per day.

Simteach [9] should be a first stop for educators interested in using Second Life (or second stop if you count Second Life's own web site). The wiki is quite useful, and has numerous helpful links in it. The blog is updated often and has some very good advice. *The Simteach 12* [10] is a 2006 document that many educators have found helpful in getting started understanding what to do inside Second Life. This well-designed, beautifully formatted document lists 12 interesting people/locations/events/tools that stand out as "showcase" educational tools within Second Life.

SLHistory [11] keeps a history of policy changes that pertain to Second Life. This site is very useful both for figuring out when a particular policy changed and why, and also for posing questions to students about the "what ifs" and "whys" of in-world policies.

New World Notes [12] is the blog about Second Life by James Wagner Au. This is my number one recommended site for quickly learning about the vast culture within SL. This

is a must-read for faculty interested in using this software in your classroom. Use the recent posts and archives listings to read a wealth of information. As I am writing version 2.0 of this document, Au has announced that he is coming out with a book about SL culture called *Notes from the New World*. This is scheduled for 2007 release from Harper Collins [13].

Second Life Herald [14], formerly The Alphaville Herald, is a good blog founded by Peter Ludlow in the very early days of Second Life. It covers current issues and interesting happenings within SL, and there is a good links list (blogroll) which will point you to other noteworthy blogs.

Second Life Future Salon [15] is an interesting group that hosts monthly meet-ups within Second Life. Lots of related links on the blogs, in-depth coverage of their monthly meetings and backstory for each one.

Finally, Wikipedia has several excellent collections of references on many aspects of Second Life culture that are applicable to education (including online, offline, and audio). See for example the extensive reference list on this main page [16] and these subpages [17]. This is an excellent source for reference information, because unlike *this* document, if a link is broken on wiki it can be updated by anyone and the change will be propagated immediately!

2.5 The SL Forums

One useful place for information about all aspects of SL is the forum area on the SL web site [18]. However, students should be aware of a few things before posting in the forums:

(1) There is a vast quantity of postings in certain forums: the Technical Support and Scripting forums are helpful but busy. Use the search feature to drill down to your specific information.

(2) Many of the forums have a wealth of personal opinions from users on various aspects of SL culture, but students should be very aware of the negative aspects of forums. Namely, users of the forums tend to be ruthless, and will flame a student's innocent posting without blinking an eye. Warn students about the *possible* negative aspects of posting on the forums, but don't scare them away from this valuable information resource. Encourage them to ask well-formed, polite questions, and not to become overwhelmed by negative reactions.

You can turn forum "flames" into a valuable discussion topic. Clay Shirky has some interesting pieces on the design of social software, and how different designs can encourage or discourage flaming behavior [19]. If a student gets flamed on the forums – or, in-world, though this is less likely – turn this into a "teachable moment". Have the students talk about the aspects of social software that encourage flaming (anonymity, lack of embodied avatar-to-avatar interaction, flat-mode versus threaded mode, volume of new

posts, cliques, etc) and some strategies that could be employed to discourage flaming (meta-moderation systems, i.e. a ratings system just like the one employed in SL for user ratings).

2.6 Orientation

Just like with your students, when your avatar logs into SL for the first time, you will be placed in an orientation area. Inn this area, you will be shown how to experiment with your appearance, how to navigate around, how to pick up things, how to fly, etc.

With respect to appearance, my first inclination was to make my avatar look as much like myself as possible. This was difficult with the style of clothes that comprise the default outfits for the characters. I decided to buy some clothes with some of my small initial stipend. There are hundreds of in-world malls and clothing stores, but I quickly deemed those outfits were likewise "not me".

Eventually (after various amusing experiences asking for conservative clothes from other avatars I met in my travels) I found a suitable pair of jeans and a plain black t-shirt. I also upgraded my hair (for a small fee) and someone gave me a nice Victorian dress and hat that I wear when I am feeling in a 19th-century mood.

My undergraduate students react positively to the appearance-changing activities for the most part. They seem amused by being able to make themselves appear any way they want. As the instructor, this provides ample opportunity for discussion of body image, projections of self, etc. I have given more ideas on similar topics in *Sample Assignments* (Section 4) below.

2.7 Choosing Last Names

Residents in SL choose a last name from a drop-down list of choices when they join. My understanding of the naming process is that as certain names approach a threshold number of residents who have chosen that name, those names drop off the list and new last names are added.

If you are part of the education program, and you opt for "group setup" (there is now a fee for this option), you can choose a new last name for your class. All of your students will share the same last name. If you are not using the group setup option, then you'll just need each student to create their own username and log in separately. (See *Setting Up User Groups* in Section 2.9 below for group management options, since you won't all have the same last name!)

For my class, I chose "Radiks" which was the name from the novel we read in class: *Snow Crash* by Neil Stephenson [20].

2.8 Choosing First Names

Some students will be tempted to choose an IM-sounding first name like "CoolDude1986" or "ElonHottie" and the like. I explain to the students that they are naming an avatar for a semester, not an anonymous chat persona for one-time use, so they should choose something that is more along the lines of a *name* rather than a *handle*.

I also advise students not to choose the same name as their real world email username, for privacy reasons. Students should be advised to remember at all times that they are chatting with strangers. Students should be aware that putting any personal information into their avatar profile is viewable by other avatars.

NOTE: Because the name of the university associated with a given last name is so often published on the Second Life forums, I tell my students to choose a first name that does not resemble their university email username so that it is harder for a stranger to find their "real name" based on their avatar name. For instance, if a student named Jane Smith names her avatar "Jsmith Radiks", it will be fairly easy to track down her identity once a stranger identifies that the entire "Radiks" class is from Elon University.

I usually give students at least overnight to think of a name. Ideally I contact my students over the break in between semesters and tell them some things about the virtual world, and that they will need a name for it. (If I am using the group setup option, I also use this email message to give them a "heads up" as to what our last name will be.) Some students will resist thinking of a name and will just pick something randomly or will ask their peers for help. I encourage these students to write about this experience of naming themselves as part of their "online identity" and "avatar identity" assignment. (See "Sample Assignments" below.)

2.9 Setting Up User Groups

User groups are a nice feature of SL. For a small fee in Linden dollars, you as the professor can set up a "group" for your students, invite all the students to join the group, and then you can control messaging and certain activities (land ownership, editing privileges, etc) to the entire group at once.

When you set up the group, you will need to assign a "term" for the leader (or leaders) of the group and for the members of the group. In our group, called Kourier (again after a group in our book, *Snow Crash*) the leader (professor) was called the "dispatcher" and the members were called "harpooners". It really doesn't matter what you call your leaders and members, but you should be aware of how the group facility works since it might make in-world student management a bit easier.

3. IN-WORLD DYNAMICS

3.1 The Lindens

Sometimes within the SL community, you will hear people refer to "The Lindens". People who work for Linden Lab have avatars with the last name of Linden. They are

often around in-world to help with various events or just to answer questions. The Lindens also set policy (such as abuse policies, research policies, and monetary policies) and dole out punishment. The role of The Lindens in SL has been compared to a *benevolent dictatorship*. I find it interesting to discuss with students this relationship between the Lindens and the residents. Ask students what the pressures are on both parties in the relationship.

3.2 Money & Stipends

As of the 2.0 version of this document, each avatar with higher than a 'basic' account (i.e. a 'Premium' account) gets a weekly stipend in the form of Linden dollars. The amount of the stipend varies based on what type of account the user has (more expensive, feature-laden accounts get a higher stipend). The amount of stipends given to users can be hotly debated within the SL community, especially around the time of a major policy change.

3.3 Unsafe, Mature, PG

There are unsafe, mature, and PG areas ("sims") within SL. (There is also a "teen grid" but access to this is restricted, and this will most likely not be part of your college class.) I chose to build my "home base" for the course on a PG piece of land because I wanted to create a safe space for my students to create/build, and for them to escape if they found themselves in a strange or uncomfortable sim somewhere else in SL.

Students were instructed to use the "set home to here" menu option to automatically set their "home" to our land. That way, they could use the "teleport home" feature to immediately get back to our safe land.

Mature sims do allow nudity and bad language, and some allow violence. Unsafe areas allow violence and your avatar can even die. These things are not allowed on PG sims. Not all mature sims actually include these things, but some do. Students can see the unsafe/mature/PG classification of a sim on the map, or by reading the details of a place on the description. Abusive behavior is handled differently in mature and PG sims. Abusive behavior should be expected in sims marked "unsafe".

The SL community standards document should be read and understood by all students. It prompts interesting discussions too! http://secondlife.com/corporate/cs.php

3.4 Creating a Safe Lab

It was important to me to allow the students to experience SL in class from time to time. However, it was critical that the lab environment maintain a proper balance between "encouraging freedom and exploration" and "not getting out of control". I told the students that they could visit mature sims in the lab in order to do interviews or gather photographs, but that I didn't want to see them looking at anything they wouldn't show to my grandmother. (I told them they can save this stuff for non-lab time if it's really necessary.)

One rule was that if I said they had to leave a particular sim, that they would be held to that and they had to "teleport home" at that instant. I "walked the lab" constantly during these classes, and I was vigilant about what the students were looking at during this time.

3.5 How to Report Abuse

There is an "abuse reporter" tool in the Help menu of the SL client. If a another avatar bumps into your avatar, you may also receive a popup saying "do you want to report this as abuse?" Students should be briefed on how to handle abusive situations. These very rarely happened in my class.

However, there was an incident in which a student stated that he left his SL client open on his computer while he answered a phone call. The student explained to me that his roommate sat down at his computer and began to verbally harass other residents. One of these residents reported my student's avatar as abusive. The student wanted to know what the punishment to his avatar would be for this behavior. He probably also wanted to cover for his actions by telling me rather than me finding out in some other way, i.e. if his account had been canceled. (I told him I didn't know what the punishment was, if any, but that he should definitely research the topic of punishment in virtual worlds, and write about the experience for his homework #4 on "criminal justice issues within SL".)

4. SAMPLE ASSIGNMENTS

4.1 Avatar and Identity

One of the first assignments I had my students do in 2005 and 2006 was an interview-based reflective essay about personal appearance in SL. Because this issue touches on so many other fascinating topics within the world, I thought this exercise would be a good catalyst for discussion and for learning about the world.

> (1) Asking avatars about their personal appearances is good practice for later in-world interviews on more difficult topics.
> (2) Exploring the appearance modification options within the software is a great way to learn how the software works.
> (3) Spending money on personal appearance items (or not!) is a great way to learn about the in-world value of money, how scripting and textures work, and about different in-world business opportunities.
> (4) Contemplating what sorts of appearances would earn positive appearance "ratings" points could be a valuable exercise.

Be sure your students are aware of the SL research ethics policies and the community standards document that they agreed to when joining.

See also the "Avatar and Identity" resources in *Classroom Objectives* (Section 5) below.

4.2 Build a Chair

Building a chair is a simple way to introduce students to the principles of building in-world so that they can appreciate the time and skills that go into making the SL objects.

(1) There is a nice building tutorial located at the Ivory Tower of Primitives. This can be found using the "Search" feature within Second Life.
(2) Building a chair can be easily scaled from simple to complex, depending on the skill level of each individual student. Simple chairs will closely follow the Ivory Tower tutorial. More complex chairs will include scripting, textures, etc.
(3) The students can put some personality into their chairs, and describe the process of building as well as the difficulties with realizing their vision using the software.

Chairs built by my students included everything from a wheelchair (with scripted rolling wheels), a pink toile loveseat, a La-Z-Boy style recliner, and even a giant golden toilet.

4.3 Simple Scripting

The SL web site includes some simple scripting documentation and help pages, as does the Second Life book [8]. These are good places to start for a student interested in scripting objects. There are also special in-world scripting classes (use "Search" to find these) and numerous in-world tutorials that will show your students how to get started.

One project that I would consider doing if I had more time in class is some of the in-world scripting contests. Search for "contest" within the SL client to see if there are any contests that would be appropriate for your students to participate in.

4.4 Compare to *Snow Crash*

In 2005 and 2006, our course focused a bit on the vision of technology presented in contemporary media (games, books, movies) so I was excited to assign Neil Stephenson's novel *Snow Crash* [20] as part of this course. *Snow Crash* is a cyberpunk novel about a future world run by giant corporations. The residents of this world spend large amounts of time inside a virtual reality landscape called The Metaverse. The Metaverse is widely regarded to be (at least part of) the inspiration for virtual communities such as Second Life.

My essay questions to the students ran a little something like this: "Many of you stated in class discussions that the role of The Metaverse in *Snow Crash* may have been to serve as a means of escape for citizens. Does Second Life represent a similar means of escape today? Give examples of dialogue or incidents from both *Snow Crash* and Second Life to support your arguments."

4.5 Scavenger Hunt

I have used Scavenger Hunts in two ways in my classes: first, to acclimate new students into Second Life, and second, to have experienced students design a scavenger hunt for new students. By the end of the semester, each student will have their own lists of "favorite places" to go, so a student-designed scavenger hunt can result in varied and interesting tasks.

Here are some of the tasks my students had on their scavenger hunt. These are fairly generic, since locations change over time.

(1) Take a snapshot of yourself inside a monorail.
(2) Give your avatar a mohawk and take a before and after snapshot.
(3) Find a library in Second Life; take a snapshot of yourself reading a book.
(4) Find a waterfall and swim down it. Extra points if you make a movie!
(5) Get a snapshot of a non-human avatar.
(6) Find the off-road remote control racing course and record your best time.
(7) Find and navigate your way through a maze.
(8) Find an Abe Lincoln avatar and take a snapshot, or buy one!
(9) Take a snapshot of yourself doing at least 3 different dance moves.
(10) Find a car and test drive it.

5. CLASSROOM OBJECTIVES, ISSUE-BY-ISSUE

What follows is a collection of links on various Second Life topics. This list is designed to showcase those topics that intersect with interesting classroom learning objectives in a variety of disciplines. The links and resources here are designed to provoke student discussion, spur reflection in student essays, or to serve as a "first step" in a student research project.

5.1 Cooperation Games

Have students discuss basic cooperation games, i.e. Prisoner's Dilemma, tit-for-tat ([21] is a good start) and the relationship to the SL ratings system. What happens if someone rates you and you run away and don't rate them back? How does the tit-for-tat ratings system change when the cost of ratings goes from $1 to $25? (This actually happened in Winter of 2005. To positively or negatively rate someone in Second Life used to cost $1. Ratings also directly determined how much weekly stipend that person would get. Ratings were raised to $25 and the formula for receiving stipends was changed. How does this affect the online community? Ask your economics majors to sketch before and after plots.)

Have students play an online version of the Prisoner's Dilemma or construct a paper-only version. [22] and [23] are useful for getting started. Discuss the impact of cooperation on the reputation economy and sharing economy in SL. In what ways have the virtual world designers tried to avoid the Tragedy of the Commons?

5.2 Reputation Economy

Stipends based on a ratings system is essentially a reputation economy [24]. Other reputation economies: ebay, digg, amazon marketplace, google pagerank, slashdot meta-moderation, fark, kuro5hin. Has Second Life moved towards or away from a reputation economy as it has matured?

Coverage of Ebay Negs, a tool for assisting in seeing a "totally negative" view of a user in ebay [25]. What are the ramifications to a reputation economy of tools like this? Why do users seem to want them?

Cory Doctorow's novel *Down and Out in the Magic Kingdom* [26] has an interesting concept he calls Whuffie [27] – this is basically a system of capital based solely on reputation.

See also "gift economies". Open source software has been compared to a gift economy (e.g. Eric Raymond's comparison of open source software construction and old-school hacking to a gift economy in *Homesteading the Noosphere* [28].) Second Life has announced that its front-end user interface code will be open sourced. What is (will be?) the impact of this decision on the way that people connect to Second Life servers? What would happen if the server code were also open sourced?

5.3 Sharing Economy

Business Week has a fabulous article covering a variety of "sharing economies" and Second Life is mentioned [29].

Students can notice the emphasis on crafting, building, and sharing immediately upon entrance to SL. One of the easiest ways for "newbies" to get things for their inventory is to ask for them, or to find them lying around on the ground in a public building area.

How is this emphasis on sharing different or similar to other games they've played? How is this emphasis on sharing compare to other areas of life, such as academia or the business world? How would theories of cooperation and cooperative game play impact our understanding of this aspect of SL? How does a community with an emphasis on sharing and crafting reward its members?

5.4 Monetary Policies and Gaming Economies

Second Life has a fairly complete monetary system, including a consumer price index, a market for buying and selling Linden dollars into US dollars. Here is an early article discussing monetary policy in Second Life [30], including reasons for some of the changes during the Winter 2005 timeframe. This interview article gives important insight into the general decision-making behind policy changes and where The Lindens hope to take SL in the future. How has the vision for SL monetary policy in 2005 transformed into reality in 2007 and beyond?

Of interest to students might also be this general comparison of several early virtual economies [31]. Also of interest will be Ted Castronova's book on virtual economies [32], and one of several interviews with the author [33].

Extra links: The *New York Times* covered the phenomenon of gaming economies going legit [34] (registration required at the NYT link; or check blogs for summaries of that article [35]). MMORPG play as economic activity [36]. Julian Dibbell tries to make money for one year in the MMO *Ultima Online* [37]. More discussion of the *Everquest* economy [38].

5.5 Grey Markets

IGE is a company that helps players of online games broker their goods and services online [39]. There is substantial controversy about this practice in the gaming community. For example, in 2005 Sony experienced some backlash over their announcement to incorporate trading of virtual goods / real world money [40].

5.6 Business Simulation

One of the most interesting potential uses of SL is as a business simulation. I chose not to do this in my short (Winter term) course, but I think it would work in a semester-long course. In 2005, the Supernova conference [41] held a contest for business simulation using Second Life (documents are no longer available on their web site). Here is some coverage of a particular invention within SL, and the inventor's search for a viable business plan [42]. Wired magazine coverage of the business models within SL [43].

5.7 Real Estate

There has been a lot of coverage of money-making opportunities in SL, and real estate seems to head the list of popular methods. This article in *USA Today* covers real-life job of making money selling SL real estate [44]. The article is a little dated, but still interesting. (Perhaps students can read critically and help spot ways in which the article is no longer valid?) Joystiq has another one [45]. Another article, "The Unreal Estate Boom", covers *Everquest* real estate with this famous quote:

> "The 79th Richest Nation on Earth doesn't exist. The population is 225,000, the hourly wage $3.42. Welcome to virtual paradise, where a carpenter can live in the castle of his dreams - if he doesn't mind an 80-hour workweek double-clicking pig iron and hoarding digital dung." [46]

5.8 Intellectual Property

Since 2003, Second Life residents have owned their digital creations [47]. Why is this such a significant departure from the norm in MMO play, and how can we expand this difference for discussion in the classroom? The *Alphaville Herald*, later renamed *The Second Life Herald*, had some early commentary on this issue [48], and following the State of Play conference, LawMeme had some interesting commentary on this issue as

well, including a description / comparison of SL to competing product called *There* [49]. An excerpt:

> "Letting players keep copyright in their creations, then, is just another step along this path. It's the classic economic argument for intellectual property rights: if we give people exclusive rights, then they'll have greater incentives to be creative." [50]

How does this description of incentives through exclusive rights meld with our description of a sharing economy or a gift economy above? Can SL be either of these, or can it be both at the same time?

Julian Dibbell's early take on Second Life copyright as an incentive to motivate better design within SL:

> "The more interesting thing is it could really open up a whole space of garage game design. You don't have to go to a game publisher and sell them on your game idea before it becomes a reality. There are already people building an RPG inside the game, they built a whole amusement park inside the game." [51]

See also sections on *Crime and Punishment* (Section 5.17) and *Legal* (Section 5.18).

5.9 Sweatshops

There has been some controversy for a while over the idea that there are game-playing "sweatshops" in developing nations. It is rumored that in these sweatshops, low-paid workers toil at playing MMO-style games making crafts or building up an avatar's value so that the items built or gathered can be sold on the grey market. There is some debate over whether these sweatshops really exist [52] [53]. In addition to being the author of the first of those skeptical articles, Julian Dibbell has the original article on sweatshops too [54] which is required reading for any student who is interested in pursuing this topic.

5.10 Class and Status

Are there separate and distinct classes of users within SL? Builders, chatters, international users, adult users, business people? Are class distinctions obvious right away, or is this something that a casual user might not necessarily notice immediately? What are the residents' views on gaining and losing class and status? How can a resident raise his or her status? What can a resident do (intentionally or unintentionally) to lower his or her current status? How does group membership impact status? How closely are status and money linked? How closely are status and time spent in-world linked? Do residents perceive that status is linked to frequency and durations of logins, or to number of people in a friends list?

5.11 Subcultures

SL has thriving furry and goth subcultures, and many, many others. Students may find this fascinating as a topic area. Steer them towards doing research on the subculture first,

rather than risking annoying residents by showing up to cultural events and asking loud newbie questions. Have your students estimate how many of Second Life residents are involved in one of these subcultures. What is the appeal of a virtual world for exploring cultural alternatives?

5.12 Religion

Sex, Politics, and Religion (all 3 in one article, what a bargain!) [55] and the article *Where Two Or More Are Gathered* [56] introduce early religion in Second Life. An excerpt:

> "...[T]here is, as it turns out, something very much like an authentic Catholic mass already in progress. A man named OmegaX Zapata is at the altar, and he's dressed in priestly garments, and he's reciting the liturgy:
>> 'When supper was ended, he took the cup. Again he gave you thanks and praise, gave the cup to his disciples and said: 'Take this, all of you, and drink from it: this is the cup of my blood, the blood of the new and everlasting covenant...' Someone hands me a liturgical book, when I enter, and it's what Indigo's parishioners are using, to read along with the Mass.'"

5.13 Marriage and Relationships

Students had a very good time with this topic - they found it fascinating and strange, and I got many essays on the so-called "Second Life Wife" and cyber-cheating. This article on private investigators hired to spy on in-world spouses pretty much covers it all [57]. This one also covers private investigators as a breach of privacy issue [58]. Weddings are also enormously popular in-world social events [59].

5.14 Death and Dying

New World notes has a description of a funeral service in SL [60]. Compare death and dying practices and procedures in the *Snow Crash* metaverse to SL. How common are virtual world funerals for real world deaths? In *World of Warcraft*, a guild called Serenity Now crashed a virtual funeral for the death of a real world player in a competing guild [61]. Their action resulted in loud debate in multi-player gaming communities over the propriety of such an action, and to what extent the mores surrounding a real world event should extend into the virtual space.

5.15 Race

Historical overview of race and sexual orientation debates in multiplayer online games [62]. Stereotypes and prejudice in MMOs [63]. Coverage of Martin Luther King, Jr Day (2004) in Second Life:
> "I think Dr. King would be both happy and sad by this place," says Nala Galatea, after Bhodi opens the floor for audience comments and questions. "I think he would be sad because most people I know here are white, with white behaviors

and mannerisms. And things of culture, of any kind, are almost non-existent here. So while the opportunity presents itself to exhibit those things here, they aren't." [64]

5.16 Gender

Difference in price in male and female avatars on the secondary market [65]. Men and women in MMOs, but Everquest-specific [66]. Gender-bending in Second Life [67]. Can the Second Life software actually manipulate behavior differences in male and female avatars? [68]

5.17 Crime and Punishment

Griefing is a behavior common to many multi-player games. (*Griefing* means being "bad" just for the fun of it, or specifically to ruin someone else's game) [69]. Richard Bartle has a classic essay giving an early description of player types, including description of griefers [70]. SL maintains a police blotter [71] showing recent disciplinary infractions. There are HUGE controversies within online communities about how to punish offenders. There are even bigger controversies about how to even define "crimes", and whether "real world" laws can extend to a virtual world, and whether law enforcement should be by the company or by the real world police. See *A Rape In Cyberspac*e (Julian Dibbell) for a historical perspective [72].

5.18 Legal

Do avatars have rights? [73,74,75] Laws of virtual worlds [76], intersection with real-world laws [77, 78, 79, 80, 81]. Legal rights to avatar representation [82].

5.19 Anti-Terrorism and Military Training

The United States Department of Homeland Security and CIA are reported to be using multiplayer games and notion of griefing to study terrorist groups [83, 84]. The latter of these articles introduces the serious games movement (also discussed at *Serious Games* [85] and not limited to military or anti-terrorist training):
> "Video gamemaker Destineer, which created the Beirut-based tactical game Close Combat: First to Fight, used by the Marines for training, is developing game-style 3-D virtual training simulations for the USA's intelligence agencies."[84]

5.20 Avatars and Identity

Fashion in Second Life [86,87,88,89,90,91]. Avatars as alter-ego (Second Life mentioned but not whole focus of article) [92]. Avatar and identity within games as either a description of an existing identity or as an exploration of a new identity [93]. Identity tourism is the term for taking on the identity of another class, race, gender, etc [94,95]. See also the *Avatar and Identity* assignment in Section 4.1above.

5.21 Experiments in Government

The Neualtenberg project describes itself this way:

> "The Neualtenburg Projekt is a nonprofit cooperative and self-governed community, whose purpose is to: enable group ownership of high-quality public, private, and open-space land; create a themed yet expressive community of public and private builds; and implement novel democratic forms of self government within Second Life." [96]

It has raised some controversy in the larger Second Life community [97].

Several real-life political candidates have attempted to host SL campaigns, including Mark Warner (former governor of Virginia, began SL presence for unknown campaign starting in 2006) [98], and John Edwards (former North Carolina senator and 2004 vice presidential candidate, 2008 presidential campaign announced in 2007) [99]. Here is a description of how some residents used Second Life for John Kerry in the 2004 elections [100].

5.22 Disabilities, Illness, Awareness

To teach about schizophrenia, James Cook created an experience of virtual schizophrenic hallucination within SL [2,101,102]. Wilde Cunningham is the name of an avatar controlled by a group of 9 disabled adults in a group home [103,104]. An excerpt:

> "The people of wilde Cunningham are severely disabled physically (but not mentally, not at all), and all but one of them are confined to a wheelchair. They owe their Second Life presence (though not their essence) to Ms. Sandgrain. In her first life, she works with the people of wilde at a care center on the East Coast. The idea of getting her clients a Second Life account sort of evolved over time-- she doesn't remember when it finally hit her, exactly-- spurred on by her own interest in Second Life. (She's been a resident since March of this year.)" [101]

Live2Give [106] is a group for people living with Cerebral Palsy. Brigadoon [107] is a group for people living with Asperger's and Autism. Autistics.org [108] is a web site with a Second Life tie-in for people with autism.

5.23 Gambling

Gambling within SL [109, 110]. How does the *Unlawful Internet Gambling Prohibition and Enforcement Act of 2006* [111] affect Second Life [112]?

5.24 Geography

Second Life is a world made up of land masses that have been divided up into named *sims* or regions. The entire virtual world has been given coordinates, and places can be referred to by their latitude and longitude). For example, in 2005 our class was temporarily given some land in a tiny portion of the Alice sim at the coordinates 146,98.

(This land is now owned by someone else.) To move from place to place, you can walk (slowest), fly, or teleport (fastest). SLMaps [113] hosts regularly updated maps of Second Life main grid and the teen grid.

While using the game software, players can pull up the world map and zoom in and out to get varying levels of detail. There is also a legend for the map tells the meaning of the circles, pink stars, and other special symbols.

5.25 Language and Culture

Interview with Duuya Hurst, a SL resident who is trying to salvage remnants of his Native American culture within SL[114].

Use of SL by non-English speakers [115]. Second Life and globalization [116]. Another person's plans for a German sim and a French sim [117].

5.26 Art, Public Art, and Theater

Re-creation of The Gates (Christo) within Second Life [118]. Second Life's version of Burning Man 2004 [119], 2005 [120], 2006 [121]. Here is some information about a theater arts project that used Second Life as a modelling tool [122]. ArtNet reports [123] on a new magazine [124] devoted entirely to the Second Life arts community.

5.27 Biology

An experiment in scripted biological evolution [125]. The Gene Pool offers simulated genetics experiments [126].

5.28 Mathematics

The entire SL building process is based on the notion of a *prim*, or a primitive geometric shape. In combination, these prims become hair, clothing, houses, cars, jetpacks, sailboats, fog, and animals. Here are some examples of Second Life being used for mathematical models [127,128].

5.29 Programming

Linden Scripting Language (LSL) is a simple programming language that can be learned easily by anyone with rudimentary programming knowledge. It will take a novice slightly longer to learn the language, but with time it is relatively easy to master. The Rymaszewski book [8] has an introduction to LSL that is very accessible. *Dr. Dobb's Journal* also carried an article in 2007 about programming in LSL [129].

5.30 Physics

As with all virtual reality or gaming environments, the physics of game design are important to creating a realistic experience. There are numerous books available on the physics of virtual worlds and games. As of this writing (version 2 of this document), Second Life uses the Havok [130] physics engine.

5.31 Astronomy

This has been a very active area of development recently. Check out Spaceport Alpha and the International Spaceflight Museum [131] and the Scilands complex in Second Life [132].

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7. ACKNOWLEDGEMENTS

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