# HOW TO EASE THE LEARN CURVE IN SECOND LIFE

*Second Life*

*Kai-Ho Jim*

# HOW TO EASE THE LEARN CURVE IN SECOND LIFE

*Second Life*

*How to ease the learning curve of Second Life*

Author: Kai-Ho Jim
Student number: 1144954
Date: December 2007
Study: Mediatechnology, HU
Company: Virtual Business Lab
Company coordinator: Mr. Wim van der Plas
Inspector: Mr. Gibby Koldenhof

## FOREWORD

I started my internship in September 2007 at the company Virtual Business Lab. I found this internship through the database from my study "Mediatechnology" of the Hogeschool Utrecht. When I was looking for an internship, I was very surprised that one can write a bachelor thesis about Second Life. Although Second Life is already beyond the hype when I started writing this thesis it is still very interesting.

It is a chance to look at Second Life from a different angle than usual and there are not a lot of theses about Second Life yet, so it is very challenging to write and research about it.

I had a great time at the Virtual Business Lab, because I had the freedom to research anything I wanted about Second Life. Second Life is not only new to me, but also for the company Virtual Business Lab.

The reason for me to write my thesis in English is because Second Life is international software that is used in many different countries. If I write this thesis in English there is a greater chance that more people could read my graduation assignment. Besides it is more challenging to me and it is a good way to improve my English.

Herewith, I want to thank Gibby Koldenhof, Wim van der Plas, Zina Kinnemans, Jan Klingen and Teja de Groot. They are the ones that supported me writing this thesis during my internship at Virtual Business. I also want to thank the other people who I have forgotten to mention.

Utrecht, December 2007

Kai-Ho Jim

## EXECUTIVE SUMMARY

After the hype of Second Life, the research is starting to see if Second Life really has a potential to replace the web 2.0. It is interesting for the "Faculty of Economy and Management" to know more about Second Life. It is nice to see that the "Faculty of Economy and Management" is interested in Second Life. Together, we want to know more about how we can decrease the learning curve of Second Life.

A lot of people are unaware that Second Life is not a game but a Metaverse. Many of them are making mistakes to compare Second Life with other popular MMPORG games like World of Warcraft, but that will not happen because they are both operating differently and have different purposes.

At this moment Second Life is not the only virtual world, but none of the other virtual worlds is as big or have so many options. The only one that is close to Second Life is the virtual world "Hipihi". There are a lot of other potential virtual worlds, but most of them are not launched yet or still have too many problems.

The reasons why people do not use Second Life another time is because there is no game play, a high learning curve, unstable software, a user unfriendly graphical user interface and low quality of the graphics.

There are a lot of aspects why the graphical user interface of Second Life is unfriendly. It is not clear, not consistent, not simple, not direct, not forgiving, not aesthetic, difficult to get feedback, and there is no control and no affordance. But for all these lack of usability, there are solutions to improve.

We can change the graphical user interface of Second Life, but it is limited to make changes in Second Life itself because the software does not offer the options. Users can only change the size of the text and that is about it. But there are ways to change the graphical user interface. One of the ways is by changing the source code since Linden Labs has open-sourced the viewer's code of Second Life, but is very difficult to make changes, because people need to have experience on programming. Changing the graphical user interface through the LSL language is not possible, since there are no functions available to do so. But there is another way to change the graphical user interface by editing the XML files in the Second Life folder. With the XML files it is possible to (re-)arrange the menus of the viewer.

However there is no need to change the graphical user interface because there is alterative software made by third parties. The OnRez viewer therefore is very good, because the viewer is much more intuitive than the default viewer from Linden Labs. Users that do not have a computer with good performance can also try to use AjaxLife. It is a web based viewer that loads faster since there are no visual appearances. But due to the popularity of AjaxLife it is slower to use than the default viewer. At this moment most of the times, people will drop out or have a connection time-out.

By using a 3D controller like WiiMote and Nunchuck it is an easier way to navigate or control Second Life than using a keyboard with a mouse. Another advantage of 3D controllers is their motion sensing capability, because people can directly point the WiiMote at the display screen.

But there are also other solutions to decrease the learning curve. Communities can use the RegAPI so it is possible to streamline a group of users. By keeping a group of people close together they can bond easier and help each other. By implementing an interactive tutorial, new users can use it in order to get along in Second Life for the first time. With guidance new users will get to know Second Life step by step. Another way is by working together in a group, so people can help each other all the time. Linden Labs should make more standard contents for new users, so there is no need for them to create everything themselves. The last option is by using third party tools instead of the Linden Labs default tools, because these have a higher learning curve and are not user friendly.

# TABLE OF CONTENTS

# 1. INTRODUCTION

## 1.1. Company profile

Virtual Business Lab is a learning company of the Faculty Economy & Management, a division from HU. Virtual Business Lab, in short VBL, has started with the goal to research in the creative industry. The director of the Faculty Economy & Management (FEM) wants to know more about Second Life in how they can link FEM with Second Life. Before this thesis, there are no other projects of HU related to Second Life. The start of Virtual Business Lab has been created with the help of the knowledge centre Inbuss (short for Innovation and business).

**The FEM chooses to setup a knowledge centre with the following business topics:**

- Innovation
- Focus on the region
- Service
- SMEs

InBuss is formed by six lecturers that are corporate with each other so they can offer business support in innovation and to develop useful knowledge. The most important sub-markets are: business and financial service, ICT service, cure and care and the creative industry.

The knowledge centre InBuss works with an incorporated treatment of problem definition, projects and research programs in corporation with external partners, professors and students from (bachelor) education.

## 1.2. Company assignment

Virtual worlds as Second Life can be in particular considered as the possible continuator of Internet. One believes that this could be the possible evolution of web 2.0. Will Second Life be the next step and evolve into web 3.0? However there was a lack of information for HU to answer the question.

**The head questions of the whole project are:**

- What can Second Life mean for HU/FEM as an educational institution?
- Would it be possible for graduates to setup a company in Second Life?
- How can HU help SMEs to commit their businesses in Second Life?

## 2. PROBLEM DEFINITION

## 2.1. Graduation assignment

Together with another intern, I got the opportunity to research more about the technical possibilities of Second Life. I especially want to research in the field of the user interface and the learning curve of Second Life.

With this thesis we want to find out more about why users do not use Second Life more often. It is surprising why users do not use Second Life again after the first time. Does it mean that Second Life is overhyped? How can we solve this situation? We need to research why people quit so fast using Second Life and how we can improve the quality of it.

The hype of Second Life was already over when I started writing this thesis. Last year Second Life was on the news every day but now everything seems to be over. After this phase it is time to look at Second Life more seriously. We can put Second Life in different phases and by putting all the phases together we call this a Hype Cycle[1]. A Hype Cycle is a graphic representation of the maturity, adoption and business application of specific technologies. Second Life is now currently at the fourth phase of the Hype Cycle, which is called the Slope of Enlightenment. In this phase we are trying to experiment with Second Life and by trying also to understand it in the hope to benefit and get practical uses from it.
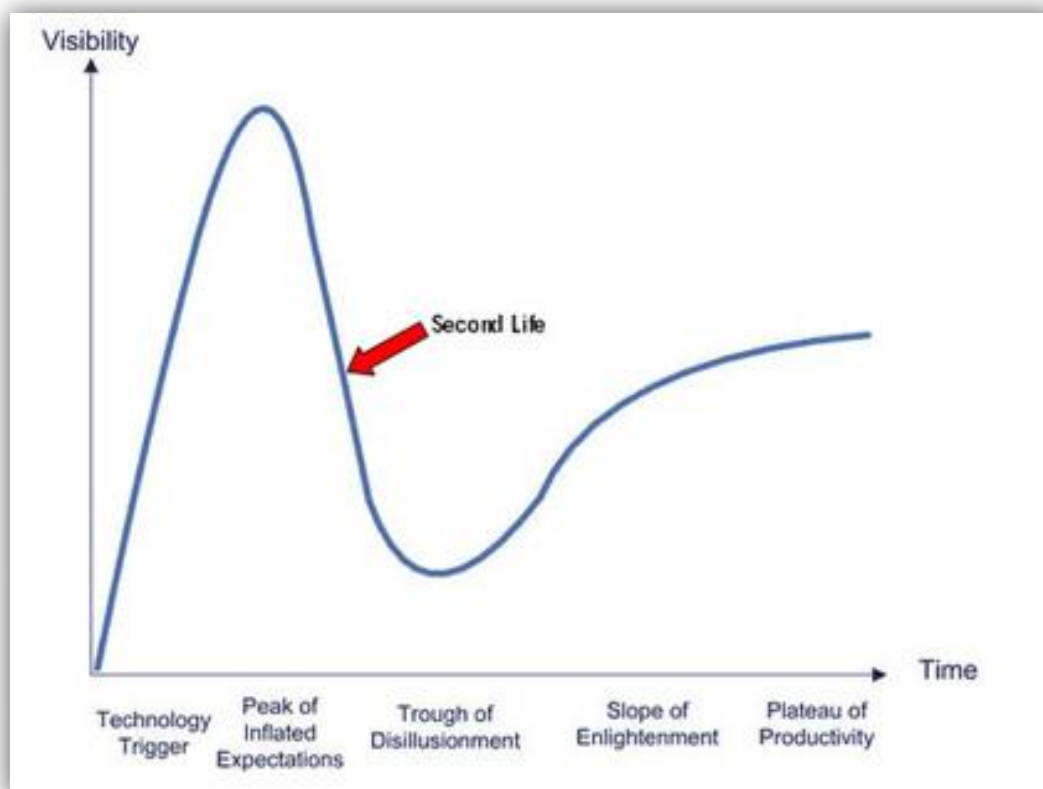


FIGURE 1: HYPE CYCLE OF SECOND LIFE

## 2.2. Project

Thereby I have classified the project into three phases.

**Phase I: Research**

- What is possible?
- Is it complicated for me?
- Why is it complicated?
- Do several target groups need several interfaces?
- How powerful is the scripting of Second Life?

**Phase II: Orienting**

- Are there already other groups that adapt the interface?
- For who is it complicated?
- Can users adapt the interface?
- Research towards possible solutions

**Phase III: Prototype**

- Builds an interface
- Test it

2.2. Project

# 3. ASSIGNMENT

My problem definition for this internship is:

*How can we reduce the learning curve of Second Life*

A lot of users do not enter Second Life again after their first visit and I want to research why they are not coming back.

If users want to know more about Second Life they need to take time and effort to explore Second Life, since these are the only possibilities to know more about Second Life. Thus this is because Second Life can offer users a lot of content and opportunities. I want to examine if there are ways to improve Second Life so people can enjoy Second Life longer and keep coming back.

## 3.1. Sub questions

- Why is the learning curve of Second Life so steep?
- What are the strong points of the interface of Second life?
- What are the weak points of the interface of Second life?
- What kind of Graphical User Interface has Second life?
- Which possibilities does Second life have to adapt the interface?
- How does the Graphical User Interface of other virtual worlds look like?
- What is interaction?
- Which interaction of Second life exists?
- How can the learning curve of Second Life be decreased for FEM students?
- Will other devices decrease the learning curve of Second life?

## 3.2. Objectives

- Reducing the learning curve of Second Life for new users by adapting the interface.
- Making the interface more intuitive.
- Commercial importance: let more users come back in Second Life
- Have an influence on people how they look at Second Life
- FEM/HU students see Second life as a possibility to set up their own company
- Let FEM students know more about Second Life.

## 3.2. Products

- Developed research plan
- Adapted interface for FEM students
- Different prototypes

# 4. PLAN OF APPROACH

## 4.1. Methods

I choose for iterative management because I will use a several researches entities to get answer on my problem definition. Different sources will be used and by experimenting with different interfaces. I will find answers on the sub-questions with the help of different sources. With the answers on the sub-questions I will try to conduct tests to experiment with different interfaces.

## 4.2. Steps to take

**Orienting phase**

- Small study of Second life to test how control works and how the interface looks like
- Study of other interfaces

**Research phase**

- Conducting other sources to answer sub-questions.
- Planning a research on how to edit the interface of Second Life
- Looking for test persons to try the interface / 3D controllers
- Research other interfaces
- Do a research about the interaction of Second Life

**Test phase**

- Testing the interface / 3D controllers with chosen test persons.

**Implementation phase**

- Conclusion from the test results
- Thesis

> *"Second Life may be more important, long-term, than even this much publicity would suggest. That's because what it really may represent is an alternative vision for how to interact with information and communicate over the Internet."*[2]

## 5. SECOND LIFE

Second Life is a 3D virtual world where all the contents are created by the users it selves. Second Life is a platform that offers users for business, education and organization. It is designed by Linden Research, Inc (Linden Lab) and was published on the Internet in 2003. Second Life is based on the novel "Snow Crash"[3] from "Neal Stephenson"[4]. Linden Labs Research, Inc wants to create a Metaverse[5] that has been described by "Neal Stephenson". It is a world where people can interact with each other like in the real world but without the psychical limitations.

Second Life is multiplatform software which means people can use Second Life with different Operation Systems[1]. Second Life supports Microsoft Windows, Apple Mac OS X and Linux.



FIGURE 2: SECOND LIFE

## 5.1. Second Life is not a personal computer game

Most of the media refers to Second Life as a personal computer (PC) game; it is unknown why the media sees Second Life as a PC game. This might be due to the lack of research about it. However, Second Life has a lot of characteristics that fits to a PC game, but it has more characteristics that do not fit in it. For example, in Second Life users do not have a goal, avatars cannot die. But one should know what the definition of a personal computer game is:[6]

*Personal computer games are more commonly referred to as computer games or PC games. They are played on the personal computer with standard computer interface devices such as the keyboard and mouse, or a joystick or gamepad. Video feedback is received by the gamer through the computer screen, and sound through speakers or headphones.*

So, from the description above, Second Life is a game, since all the named criteria's are in Second Life, however the definition is not specified enough. According to the definition, office programs like Microsoft Word or Microsoft Excel are also personal computer games. On the internet there are a lot of misleading sources and that is why the media uses wrong definitions of Second Life. Another definition:[7]

*A game is a structured or semi-structured activity, usually undertaken for enjoyment and sometimes also used as an educational tool. Games are generally distinct from work, which is usually carried out for remuneration, and from art, which is more concerned with the expression of ideas. However, the distinction is not clear-cut, and many games may also be considered work or art.*

*Key components of games are goals, rules, challenge, and interactivity. Games generally involve mental or physical stimulation, and often both. Many games help develop practical skills, serve as a form of exercise, or otherwise perform an educational, situational or psychological role.*

In this definition it is clear that Second Life is not a PC game. However, it is possible to play games in Second Life[8]. But Second Life is more than playing games, it is a Metaverse. So Second Life is not a PC game; instead it is the next evolutionary stage of the internet, again, it is a Metaverse. Second Life is whatever you want it to be.

Second Life is a virtual 3D world in which players can live a "Second Life" in a digital surrounding. Second Life has been described by different terms. Multi-User Virtual Environment (MUVE(S))[9] is a term that fits Second Life. Second Life is a virtual world where different avatars make contact with each other. The other terms that people describe Second Life are "Massively Multiplayer (Role Playing) Online Game" (MMO(RP)G)[10][11]. People also tend to compare Second Life with the most popular MMORPG at this moment, World of Warcraft[12].  But it is difficult to compare them with each other, since Second Life is not a PC game and everything has been set in a virtual world. In MMORPG users mostly play in a fictional world with a large of fantasy influences; Second Life is trying to boost the real world as the world where we now live. Thus, people should not compare them and not use the term MMO(RP)G for Second Life, but describe Second Life as a MUVE.



FIGURE 3: WORLD OF WARCRAFT

FIGURE 4: FLYING IN SECOND LIFE

People can use their fantasy to realize it or even do things that that is not possible in real life, but it possible to make it come true in Second Life. Like there is no difficulty to let the avatar fly, just press the button and the avatar will fly.

## 5.2. Resident

The fictional character that represents the users in Second Life is called "resident". The common term for "resident" in a virtual world is called "avatar". The residents are the people who are designing the world of Second Life. Everything in Second Life has been made by residents. Every resident is free to create whatever he or she wants, as long they have the rights to do it, because some residents also own land in Second Life and they are the people that have the right to say what is allowed there and what is not, since they have bought it to have the rights. The social aspect is really important in Second Life. All these residents have their own avatar and with that they can, entertain, experience and take opportunities what is not possible in the real world.

## 5.3. Virtual Economy

What makes Second Life so unique is that it has an economy similar to our world; it runs 24 hours a day and it works with its own currency, the Linden Dollars (L$). Users can exchange the Linden Dollars for real currencies like the US Dollar or Euro. Linden Dollars are associated with the Dollar and thereby has inflation. It is not necessary to use Linden Dollars, users that do not have enough Linden Dollars or simply do not want to use it, they also can create content by themselves. In Second Life there are a variety of tools to make contents. Users can make everything, as long users have the skill master the tool. However the tools from Linden Labs to create content is not easy and it take some time to gain skills.

**Linden Dollars**

**Total L$ Supply (L$):**   3,839,100,543

**Estimated In World Business Owners**

Unique Users with Positive Monthly Linden Dollar Flow (PMLF) [2]

| USD Equivalent PMLF | May 2007 | June 2007 | July 2007 | August 2007 | September 2007 | October 2007 |
|---|---|---|---|---|---|---|
| < $10 USD | 21,006 | 23,159 | 24,292 | 22,185 | 23,336 | 24,132 |
| $10 to $50 USD | 10,638 | 11,544 | 12,540 | 12,281 | 12,811 | 15,213 |
| $50 to $100 USD | 2,613 | 2,697 | 3,006 | 2,929 | 3,001 | 3,528 |
| $100 to $200 USD | 1,840 | 2,040 | 2,149 | 2,089 | 2,131 | 2,477 |
| $200 to $500 USD | 1,628 | 1,685 | 1,788 | 1,711 | 1,814 | 1,984 |
| $500 to $1,000 USD | 674 | 645 | 727 | 681 | 683 | 872 |
| $1,000 to $2,000 USD | 389 | 422 | 441 | 391 | 432 | 473 |
| $2,000 to $5,000 USD | 288 | 273 | 279 | 295 | 285 | 320 |
| > $5,000 USD | 139 | 132 | 145 | 129 | 138 | 157 |
| Total Unique Users with PMLF | 39,215 | 42,597 | 45,367 | 42,691 | 44,631 | 49,156 |

**Monthly Spending by Amount (2007 October)**

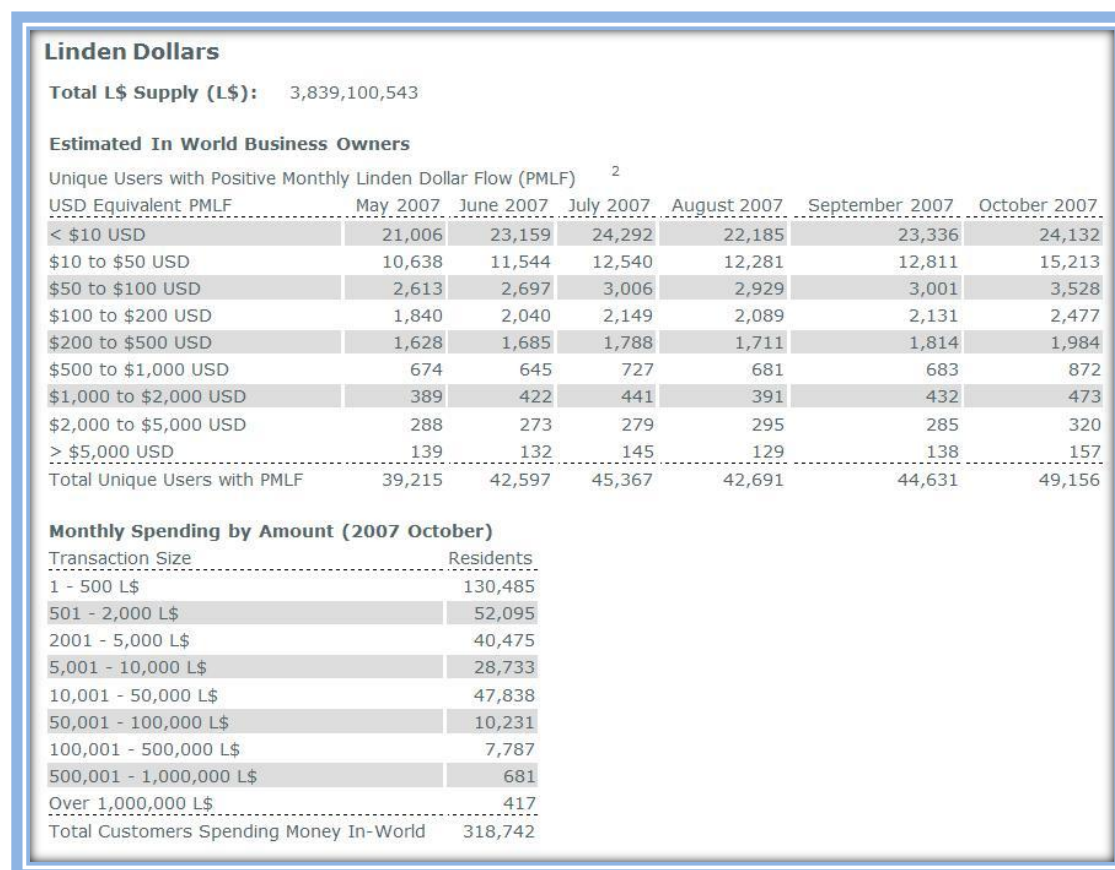| Transaction Size | Residents |
|---|---|
| 1 - 500 L$ | 130,485 |
| 501 - 2,000 L$ | 52,095 |
| 2001 - 5,000 L$ | 40,475 |
| 5,001 - 10,000 L$ | 28,733 |
| 10,001 - 50,000 L$ | 47,838 |
| 50,001 - 100,000 L$ | 10,231 |
| 100,001 - 500,000 L$ | 7,787 |
| 500,001 - 1,000,000 L$ | 681 |
| Over 1,000,000 L$ | 417 |
| Total Customers Spending Money In-World | 318,742 |

FIGURE 5: THE ECONOMY OF SECOND LIFE

## 5.4. Technology behind Second Life

*"The underlying architecture of the Internet and of 'Second Life' is perfectly scalable."[13]*

The technique behind the server architecture of Second Like looks a lot like Google. It is a single server that operates and automatically deploys the system and simulates it.

The world of Second Life is called Grid and is divided into different regions. Unlike earth, the world in Second Life is scalable in any direction. One region is a square of 512 meters and represents a block on the Second Life Grid. Only a maximum of 40 residents or 15.000 objects can be at the same time in a region. If both are exceeding, users will be dealing with lag.

A simulator is the process that runs one region of the Second Life Grid. Each server can run multiple simulators. With the viewer users can have access into Second Life. Users may access all around the world to Second Life as long the computer has the viewer installed on the computer. Some people will use the term client instead of the viewer. The viewer is basically the graphical user interface of Second Life. Not only can users login to Second Life, it is the only way to control the avatar or create content. The viewer is open source software which means everybody can change the viewer by editing the code.
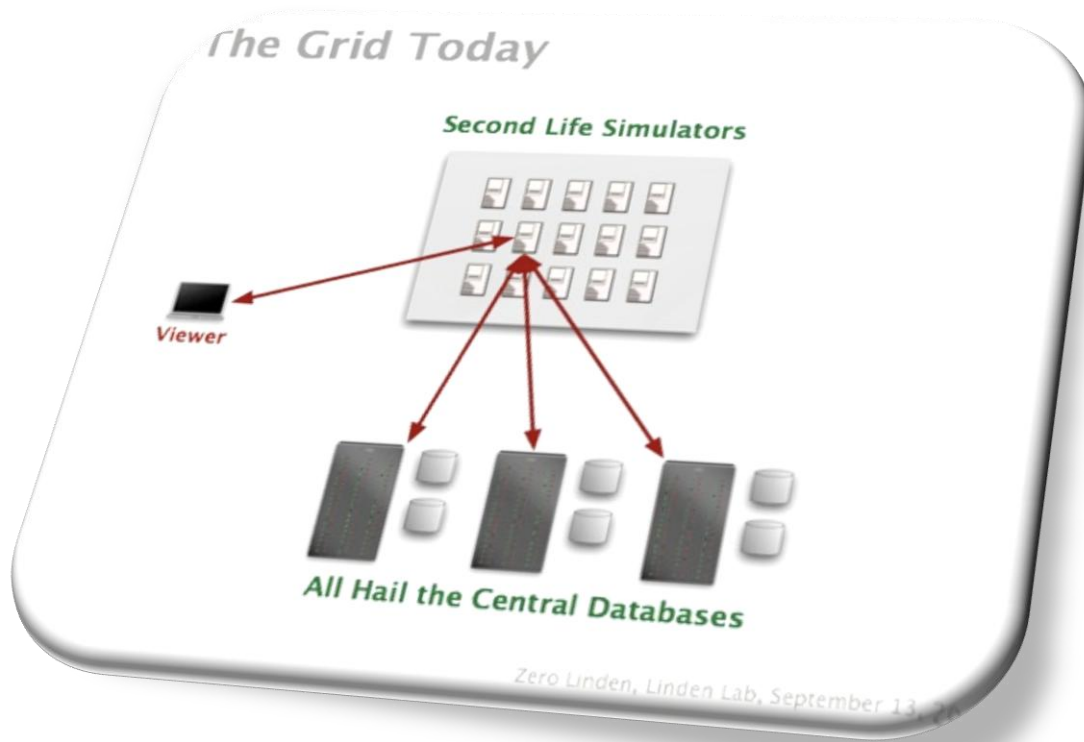
FIGURE 6: SECOND LIFE GRID AND THE DATABASE

# 6. VIRTUAL WORLDS

The definition of virtual world is[14]:

*Virtual worlds are online platforms in which participants are immersed in a three-dimensional representation of a virtual space. They can enable people to create personalities or "avatars" online that can interact with other avatars in the virtual world. These environments enable interactions that can be used by consumers, and ones that can be used internally and externally by organizations for many purposes, such as collaboration and training. Virtual environments can enable commerce and exchange of goods, knowledge and services   both virtual and physical   by the avatar and its owners.*

In the future there will be more virtual worlds; Second Life is at this moment not the only virtual world. Social interactions through virtual worlds will increase and many enterprises or educational intuitions are looking for new ways in how they can use it for their own advantages. If users can interact with their colleagues and customers there will be a whole new market in interaction and communication.

Since there was a hype of Second Life there are a lot people interested in virtual worlds. But virtual worlds are not that new.

## 6.1. Active Worlds

Active Worlds[15] is one of the oldest 3D virtual worlds. Like in Second Life, users have the option to build objects. In many ways Second Life has surpassed Active Worlds when it comes to registered users and graphics, but Active Worlds is still progressing in a closed environment like in a company. It has advantages over Second Life since there are options where groups can have a private environment to develop for different projects. Active Worlds is used by many enterprises to continue for testing in virtual worlds.  A lot of intuitions are still using Active Worlds instead of Second Life because they know more about it. The interface is easier to use than Second Life because they have the same approach like a browser window.
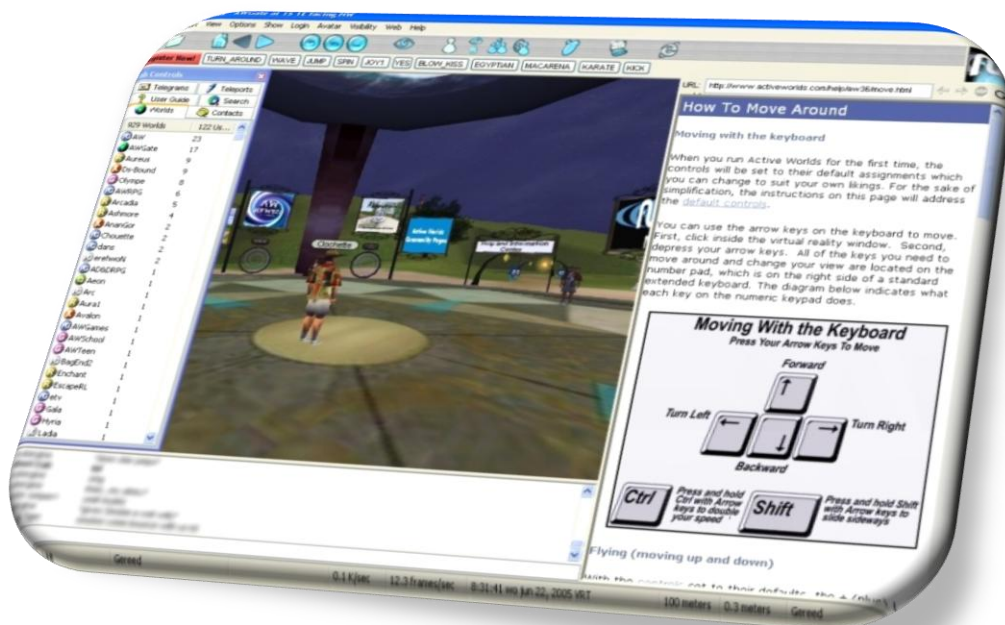
## 6.2. Hipihi

Hipihi is basically a copy of Second Life which was launched after Second Life, but it is targeting the Chinese market since Second Life has been banned from China. The makers are claiming that Hipihi[16] has a better learning curve then Second Life since their graphical user interface are improved to be more user-friendly. The makers of Hipihi have pre-build content so users do not need to make everything. Hipihi has not been launched yet and is in a closed beta phase.



FIGURE 8: HIPIHI

## 6.3. Playstation Home

PlayStation Home[17] is a virtual world where Playstation 3 players can use an avatar to walk around and meet other gamers. Every user has a house where they can invite people to join and share media, like music and video. The house is the only place where the user can change content and all the media content is easy to upload to the server. Playstation Home is not a competitor of Second Life, since only Playstation 3 users can only have access to Home. Playstation Home is not about creating content, but more about an easy way to make social contacts with other Playstation 3 users and identify oneself. User friendliness is very important to Sony, the maker of the virtual world Playstation Home. Everybody can feel comfortable and navigation is easy. Playstation Home is not out yet, but from screenshots, the graphics (Figure 9) look very promising.

## 6.4. Moove

Moove[18] is a virtual world where users make contact with each other in a room called "romancer" (Figure 10). Outside the room there is nothing. Moove is aiming at people that want some romance on internet. And with Moove it is possible. Other options are minimal. Moove offers a lot of templates to make it easy for new users. With the templates it is possible to design the individual room.



FIGURE 10: A CHAT ROOM OF MOOVE

## 6.5. vSide

vSide[19] is a small virtual world that targets the Latino group. Users can create their own avatar and buy clothes from real-life stores. vSide is targeting itself as a virtual city where users can always find each other and invite each other to interact, like dancing or singing. The graphics differ a lot from other virtual worlds, since they use a cell-shaded rendering for the virtual world (Figure 11). vSide is not working properly since it keeps crashing and was previously not possible to login.
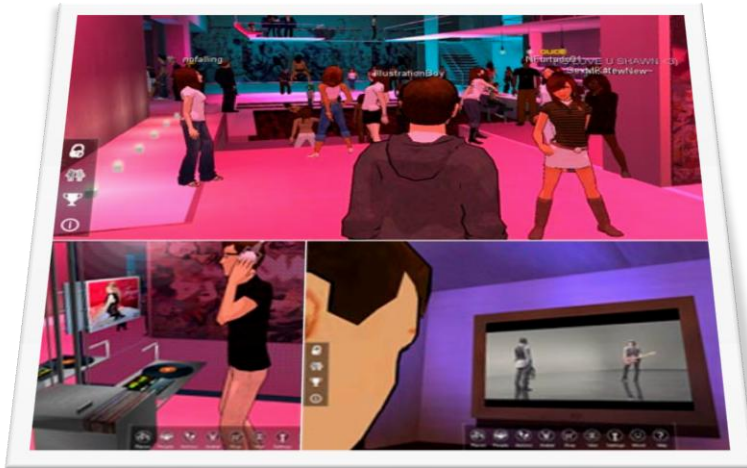


**FIGURE 11: VSIDE[20]**

## 6.6. There

There[21] is a virtual world that is targeting to have fun and keep in touch with friends. There is to socialize (Figure 12), but it also has small possibilities to create objects and to sell it. It does not have an economy like Second Life, but it has his own currency called the Therebucks (Tbuxs). The virtual worlds of MTV[22] like Virtual Laguna Beach or Virtual MTV are based from the source code of There. There is aiming for a younger audience than Second Life but there are still some places in There with restrictions. There has an easier use of the graphical user interface than Second Life. There gives users the feeling that this virtual world is about having fun. The graphics look catchier with a lot of color pallets. The interface is simple and users get used to it very fast. The accesses are direct and fast and there are not too many options that users need to worry about. The only disadvantage of There over Second Life is that there are no tools to create content, like animation or objects. There is for sure much more fun than Second Life, but this fun misses the approach of Second Life for other purposes like education. But for marketing purposes it could be interesting, because it is targeting a younger audience than Second Life and that is one of the reasons why MTV uses There over Second Life.

FIGURE 12: AVATARS CHATTING WITH EACH OTHER IN THERE
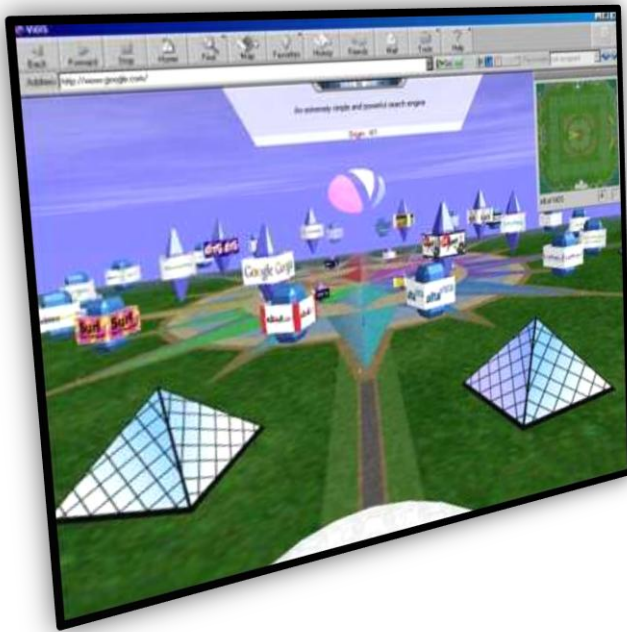


FIGURE 13: VIRTUAL LAGUNA BEACH

## 6.7. ViOS



FIGURE 14: THE VIOS INTERFACE

ViOS[23] is a 3D virtual world browser. The idea of the founders is to create a world where users can interact with each other and share information in a 3D world. They think that it is a better idea to share information than by using a 2D web page. Basically it is an idea to put the web into a 3D world, but like Second Life, the problem is that finding content or information in a 3D world is not easy.

## 6.8. WhyVille



FIGURE 15: WHYVILLE CHAT ROOM

WhyVille[24] is created for children with the purpose of education. WhyVille is the first virtual world that worked with its own currency. In WhyVille there are separated areas where users can learn different topics. This virtual world is supposed to be one of the most popular with a player base of 2.9 million users. WhyVille is not a typical virtual world, since everything happens in a classroom and the graphics are not in 3D. In WhyVille it is not possible to create content, but changing the appearance of the avatar is possible.

## 6.9. Redlight center

Utherverse[25] is a company that has created the virtual world Redlight center. It is based on the red life district of Amsterdam. This virtual world contains mainly adult content and thus it is not interesting for the FEM/HU.



**FIGURE 16: A CREATION OF UTHERVERSE**

## 6.10. Entropia Universe

Entropia Universe[26] is known to be a competitor of Second Life. Entropia Universe has a lot of game influences where users can find games to join and play. Users can fight monsters by joining guild or taking quest with a group to fight next to each other. But there are no strict levels and each avatar can have unique skills and abilities.  It is not possible to build objects or create content. Entropia Universe is quite successful, because unlike Second Life there are goals that user can achieve. It is easier to have goals due the game influences. Entropia Universe also has an economic model, and it has a fixed exchange rate to US dollar unlike Second Life.



**FIGURE 17: VIRTUAL WORLD ENTROPIA**

## 6.11. Conclusion

Active World is a competitor of Second Life because it has the ability to create a closed environment for enterprises or institutions. And people know much more about Active World since it already exists more than ten years.

Other virtual worlds are not that big or missing some elements to compete with Second Life. But most are not made to compete with Second Life, the idea of a virtual world is really interesting and other companies want to create their own virtual world for their own purposes. Sony, for instance, has created the virtual world Playstation Home for Playstation 3 users. But it is not that bad that some virtual worlds cut the immense options that Second Life has.

So in the end there are a lot of virtual worlds, but none of them are that big or have so many options like Second Life. The only virtual world that comes close to Second Life is Hipihi, because they are trying to create another Second Life, it has the same immense options, but it is not officially launched yet.

## 7. WHY DO PEOPLE NOT USE SECOND LIFE AGAIN?

Since virtual worlds are still developing, Second Life still has many problems that need be solved. When users do not feel satisfied after trying Second Life for the first time, they will most likely not use it again.

The facts do not lie, according to Figure 18 there are more than 11 million registered residents, but less than 1 million residents have logged into Second Life for the last month, so the retention is not more than 10%.

## Last Updated: Monday, December 3, 2007
Reflects data through midnight, December 2.

## Population

| | |
|---|---|
| Residents Logged-In During Last 7 Days | 332,904 |
| Residents Logged-In During Last 14 Days | 499,277 |
| Residents Logged-In During Last 30 Days | 874,839 |
| Residents Logged-In During Last 60 Days | 1,373,679 |
| Total Residents [1] | 11,236,951 |

FIGURE 18: OVER 11 MILLION REGISTERED USERS, BUT LESS 1 MILLION USERS HAS LOGGED IN FOR THE LAST MONTH

On the forum of Second Life there was a poll with the question "Why has population growth been so stagnant?"[27] Regarding to Figure 19; people do not like to use Second Life mainly because of the unstable software, poor customer service and the steep learning curve. Second Life already exists for a few years but it is still not stable enough. To find help in Second Life is not easy. Although the poll does not have the option to choose an unfriendly graphical user interface, it is for sure related to the steep learning curve since a lot of users are complaining about the complexity of the graphical user interface and that leads to a high learning curve.
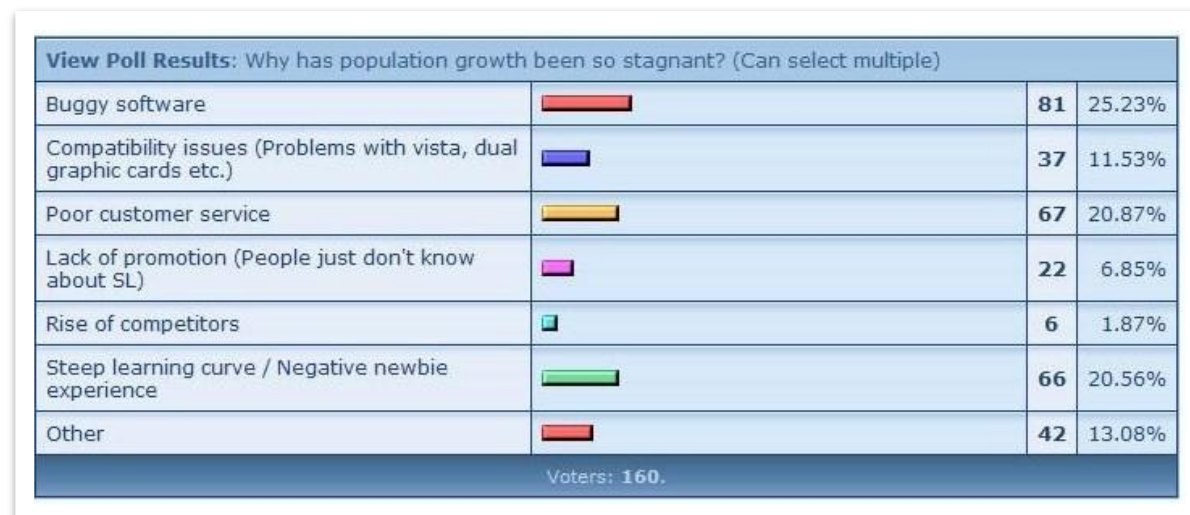
| View Poll Results: Why has population growth been so stagnant? (Can select multiple) | | | |
|---|---|---|---|
| Buggy software | | 81 | 25.23% |
| Compatibility issues (Problems with vista, dual graphic cards etc.) | | 37 | 11.53% |
| Poor customer service | | 67 | 20.87% |
| Lack of promotion (People just don't know about SL) | | 22 | 6.85% |
| Rise of competitors | | 6 | 1.87% |
| Steep learning curve / Negative newbie experience | | 66 | 20.56% |
| Other | | 42 | 13.08% |
| Voters: 160. | | | |

FIGURE 19: POLL RESULTS

**There are a few reasons why people quit playing Second Life after a short time:**

- ℘ Game play
- ℘ Software
- ℘ Graphics
- ℘ Interface
- ℘ Steep learning curve

## 7.1. Game Play

First of all, the game play of Second Life has been known for its constant dropping frame rate. It means that everything in Second Life is not going smoothly; it is difficult to move the avatar because the control is not direct. This problem will increase if the region is filled with other avatars and objects. This problem is particularly caused by residents that have build their own object without realizing that objects cost a lot of data to download. With professionals builders this problem would not be that big since they will take that into the building process. The more objects there is in a region, the more data, computers have to download. The only solution is to lower the quality of the users screen image so it will reduce the data that a user has to download, but this will also lower the visual quality of Second Life.

A lot of contents contain program glitches, due to the high learning curve of scripting, so a lot of users are not used to it and it create a lot of objects with scripting faults.

Second Life is known for the aspect of socializing with other residents in the virtual world. Second Life is a competitor for networking websites, where people can network with friends, meet new people, explore common interests, express political beliefs and even find love, on platforms like Hyves, Facebook, MySpace and Friendster. Second Life has a few more interesting options like creating user's own digital image, the avatar and creating objects or content. But not everybody needs so many options. On the other hand, the social influence in Second Life is minimal. Users can chat real-time with other users, but that is about it. When it comes to options to give information about oneself or sharing media, other networking platforms are more superior to Second Life. Socializing at this moment is better and much easier with networking platforms.

Another problem is that it takes time to find something to do in Second Life if the user does not set a goal for him- or herself. And even if the user has a goal, it is not easy to start from scratch. Users always have to find goals by themselves. In real life, people will always find something to do, because they know where to find it, but Second Life is new and it takes time to get along, without goals it is very difficult. The problem is, a goal will not come to oneself, the user always has to find it by him or herself, some people like to go explore and find it by one self, but a lot of people just do not know where to start. There are countless options and there is no help in how to find goals.

While the subscription is free, one still needs money in Second Life and there are three possibilities to get Linden Dollars. The simplest way is to exchange some real money, like US Dollars or Euro in Linden Dollars, which will of course costs real money, but the user self decides how much he or she wants to spend.

The second way is to find a job in Second Life to earn money. The downside of this opportunity is that most of the jobs in Second Life are hard to find and mostly users will not get much Linden dollars. And while the avatar is working, the user can not use it for other purposes. It is better to work in real life and transfer that money into Linden Dollars.

The last alternative is not using money at all, but build everything oneself. This is the most difficult way and not a good option for starters. Users have to learn how to build in a 3D-enviroment, learn how to use LSL scripting language to make objects interactive. It is not wrong to try, but the learning curve is very steep.

When money is available, there is no need to learn difficult things like building a house, because with money the user cuts the learning curve. Instead of building a house or making virtual clothes, he or she can just buy it from another user, so money saves time and makes life easier, just like in the real world. There are people who

are happy to convert money into Linden Dollars, there are also many people who work to get things they like, but what does not happen is just sitting in a chair and doing nothing like in the real world.

However, there is one other option, and that is to try getting the objects (goodies) for free. There are a lot of goodies if users take the time to search for it, although it is not easy.
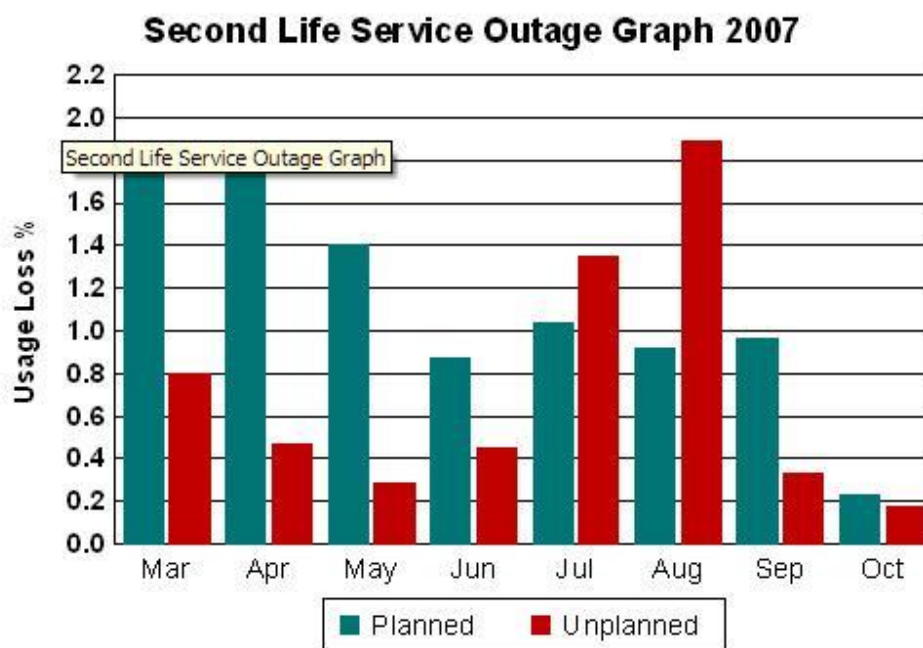
## 7.2. Software

The viewer of Second Life is not beta software anymore, but there a lot of known bugs and issues that are not fixed. Several crashes at the same day happens a lot and problems. Other problems are lag[28] and inventory loss. Lag means that input/output is not direct. When users pressed the button to fly, user's avatar would not fly immediately, but it takes some time to see it on the computer screen to see it fly.

Second Life can be taken offline for maintenance and testing and this will be announced by Linden Labs, but there are times that Linden Labs will take Second Life down without warning.

Linden Labs has published the Second Life Grid Quality Metrics to give users an indication of stability and performance of Second Life.

**The indications are:**

- Service Outage Graph shows the planned and unplanned usage loss. It means how much the grid goes offline with or without warning. The graph shows a significant improving of the usage loss.



- Percentage of viewer session crashed is a graph that shows how many viewers are crashed if they are logged into Second Life.  The graph shows the software is not stable and crashes a lot.

## Percentage of Viewer Sessions Crashed
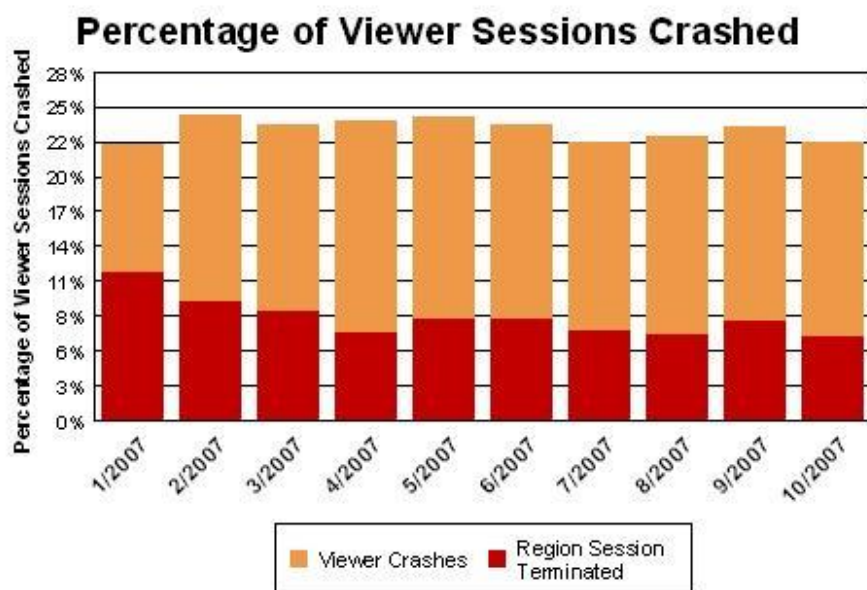


- Second Life viewer frame rates graph shows the average frames per second (FPS) for the viewer. Lower frame rates means that there is lag.

### 2007 Average Viewer Frame Rates
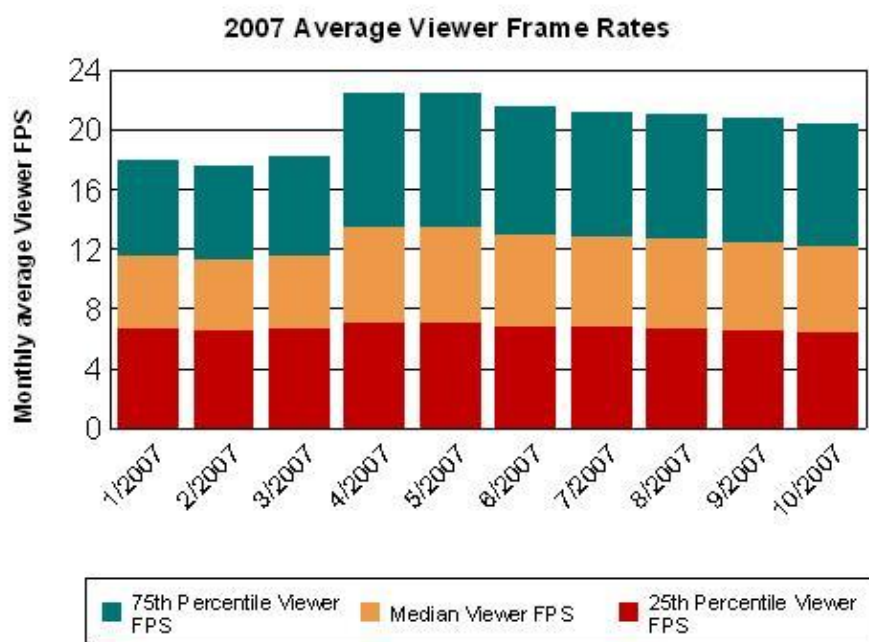


- The Second Life monthly % Time below Region FPS threshold graph is basically like the same graph the Second Life viewer frame rates graph but it concentrates on the regions.

## Monthly % Time below Region FPS Thresholds
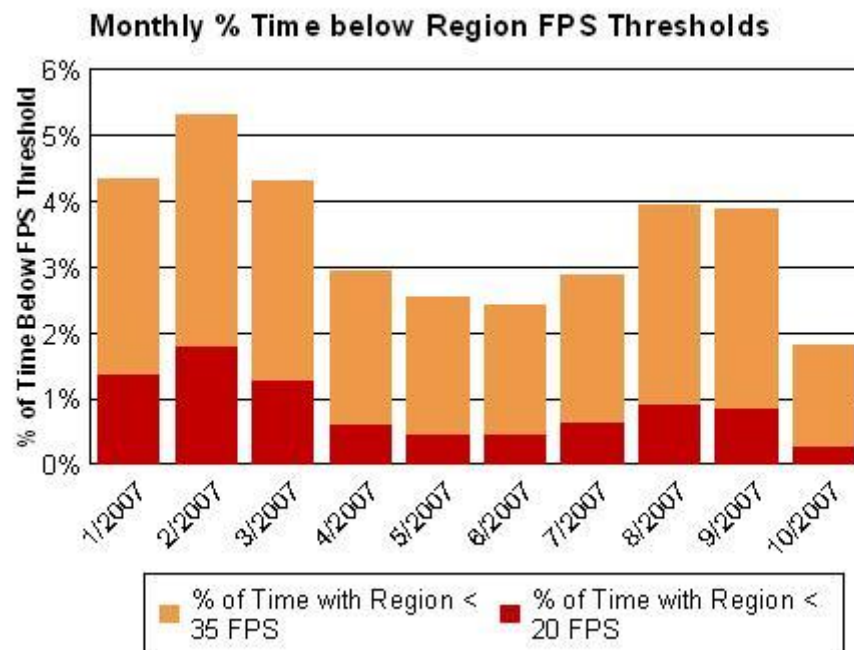


## 7.3. Learning curve

Fluent performance is an important element for the interface, since one prefers direct feedback in order to know what one is doing. New users have to know what they are doing. Second Life can be a big step for new users, especially when they do not have the experience to move in a 3D world. Inexperienced users need time to feel comfortable in Second Life. It is a frustrating and difficult experience. For instance, movement in Second Life is awkward and jerky and requiring lots of corrections with the keyboard. It takes a lot of time to get used to it.

Residents try to guide new users by making (video) tutorials, so new users can make an easy start with Second Life. While it is a nice idea to help new users, but new users do not know where they can find the tutorials. There is not an easy way to provide web-based training or tours in Second Life, users have to load and access the virtual environment through Second Life.

Joey Sanchez has done an Interactive Qualitative Analysis of Second. The results of the research show that students feel anger after playing Second Life. Other results are that students having trouble with the interface and technical difficulties.
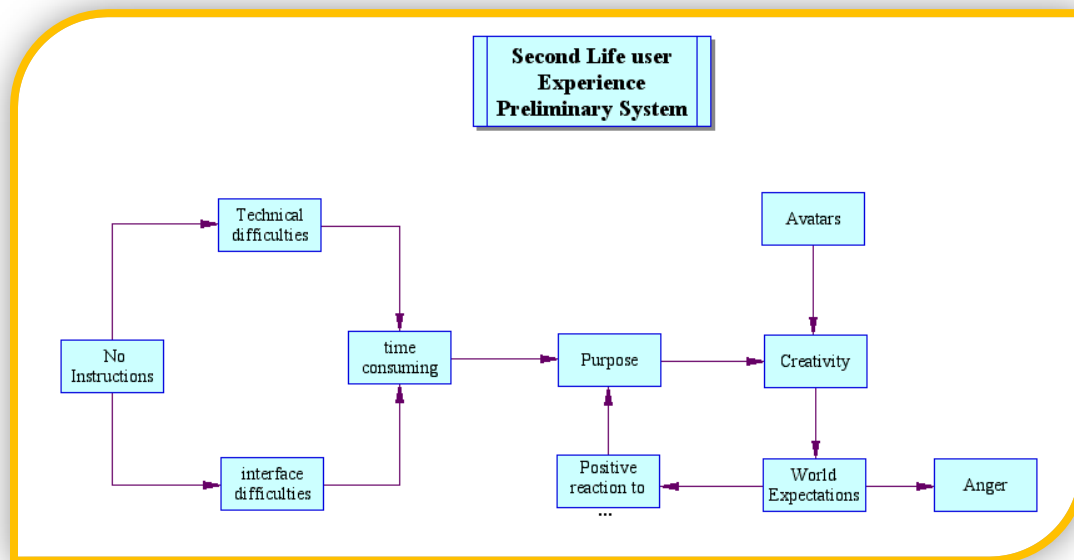
**FIGURE 20: THE INTERACTIVE QUALITATIVE ANALYSIS OF SECOND LIFE**

## 7.4. Graphical user interface

When users start to use Second Life for the first time, users can be overwhelmed by the Graphical User Interface of Second Life. The current graphical user interface is not user-friendly at all. Second Life takes the Windows approach to its own graphical user interface; there are a lot of different menus, variety of buttons, a taskbar to access popular actions and a lot of option to customize. Help function is not working properly and the search function is not intelligent enough.

When user has the feeling that it takes too much effort to understand the software, they will not have fun with it. The controller is not intuitive since it requires different combination of controls to have access into different menus. All the storage of user's personal data like, photos, sounds, videos, textures are stored in one directory tree. If users do not manage it right from the beginning it will become chaotic.

Second life's problem is having too much options and finding all those options is not easy because they are hidden into different windows. Designing a good user interface is very important where all the options are categorized into a logical structure so users can find content back easily. If users are struggling on the graphical user interface, it will be frustrating for them and do not want to waste more time on Second Life. In this case the learning curve and the graphical user interface are related to each other. If the graphical user interface has a better usability, it would assist a user going into Second Life, but at this moment, users are fighting more with the graphical user interface at that leads to a higher learning curve. Graphical user interface should make everything easier in Second Life, but at this moment that is so.
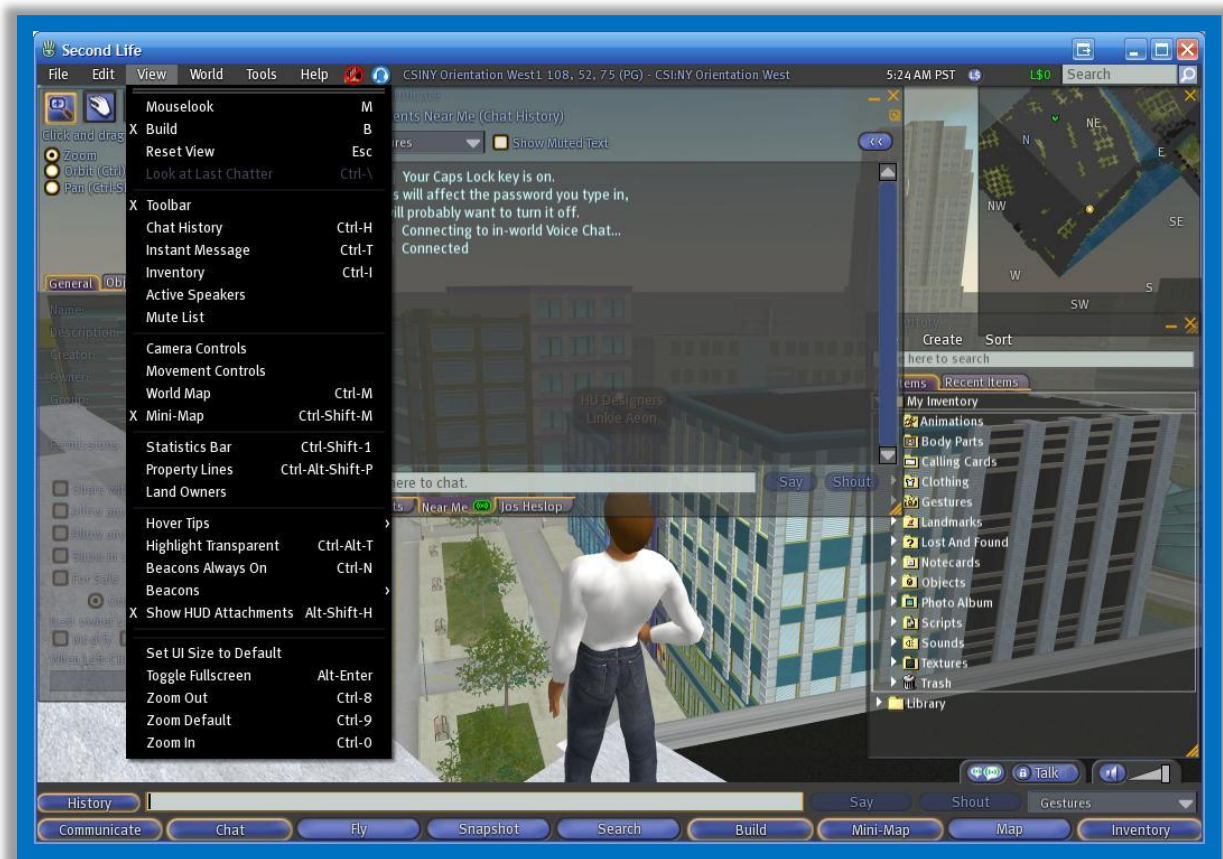
FIGURE 21: LOT OF WINDOWS WITH A LOT OF OPTIONS

## 7.5. Graphics

Second Life's visual aspect is not bad, but not good either. Second Life does not offer the next-gen graphics what we can find in other games. The animation is not smooth and the objects in Second Life do not look realistic. Users that have never played games before will not think this as an issue, but experienced users think that they are playing a game from a few years ago. Second Life needs those kinds of advanced users, since they are the key to create content or objects. With their experiences, they do not have a steep learning curve and can build a better world for Linden Labs.

Linden Labs is trying to improve the visual appearance and the physics engine of Second Life. Second Life uses a Havok1 engine for physics, but it is testing the Havok4 engine to improve the psychics. Physic engine is specialized software that simulates and predicts effects using variables like mass, velocity, friction that what would happens in real life.

**Advantages by upgrading the psychic engine to Havok4:**

- Reduced simulator crashes
- Less lag in the physics engine
- More reliable prim linkage
- Stacked dynamic objects react when supporting objects are removed
- Improved collision management
- Penetrating dynamic objects will be automatically pushed apart by Havok4's collision solver
- Vertical simulation extent has been increased to 1024 meters
- Dynamic changes like more realistic avatar movements.

Linden Labs is trying to improve the visual appearance in Second Life with implanting the WindLight. WindLight is a new atmospheric lighting and rendering system. It makes the environment in Second Life more realistic.



FIGURE 22: SECOND LIFE WITH WINDLIGHT

## 7.6. Conclusion

So, there are several reasons why people quit so fast with Second Life. Second Life has a lot of to offer, but it is overwhelming for new users. It is necessarily to bring the options step by step to them. Offering too much at the beginning leads to a steeper learning curve and it costs new users too much effort. Second Life requires from users to research the software before they try to use it. Expertise is needed to use Second Life and not everybody wants to spend time on it.

The graphical user interface is not intuitive and not user friendly and that leads to a steep learning curve. It does not offer guidance to help users, but users have to fight with the graphical user interface.

The software from Second Life is at its current state still not stable and it frustrates a lot users.

The graphics from Second Life does not come above the average, but Linden Labs is trying to change that by adding the new engines, WindLight and Havok4. WindLight should make the world of Second Life looks more photo realistic.

With the Havok4 psychical engine, Linden Labs not only hopes that it will improve the stability of the software but also a more realistic animation and collision detection.

# 8. WHAT IS AN INTERFACE?

An interface is a device or a system where two unrelated entities can interact with each other.  We do not understand the computer language, they only work with combination of the numbers zero and one, but the computer also cannot understand our language. The classic example is the interface between humans and computers. Computers can only understand information that exists of 0 and 1, thus we humans need more than 0 and 1 to pick up the information. With an interface between computer and human, they can communicate with each other, the interface changes the information that is understandable for both entities. One can see the interface as a tool, so people can use a device or system easier. Through the interface the user can give instructions to the software that are then translated into instructions that the computer can interpret.

## 8.1. User Interface

We give input through our keyboard and mouse to our avatar in Second Life and the computer gives us feedback through the monitor. This is what we called a user interface (UI), because the interface is between the computer and the person behind it. In the past we also called this as Human Machine Interface in short, HMI. With the user interface, users will have an input and output. At the input there is always a human that interacts and at the output there is a system that produces the effect of what the user has interact with it.



FIGURE 23: GRAPHICAL USER INTERFACE

A Graphical User Interface is a type of user interface where we use the computer graphics to make a computer program easier to use. A good designed graphical user interface does not have a steep learning curve since users do not have to learn complex command languages. There are different computer graphics that makes it easier for us, like a mouse pointer or icons on the display to help users move around on the display screen. Icons are small pictures that represent commands. Graphical User Interface use computer hardware like the mouse and keyboard so that the user can give input to the computer and gives us the information in a form of output on the display screen or through our computer speakers.

The next generation user interface is virtual user interface. It also uses the computer graphics to give output to the user, not only two dimensionally, but also three dimensionally.

**Here is a list of common components or widgets found in Graphical User Interface:**

- Window - an area on the screen that displays information.
- Pointer - a graphical image on the screen that indicates the location of a pointing device.
- Text-box - A box to enter information.
- Button - a push-button.
- Hyper-link – an indication that guide to something else.
- Drop-down list - A list of items to select from.
- Check-box – select number of options.
- Radio button - allows the user to choose a predefined set of options.
- Icon – a small picture that represent anything the user want.
- Tab - a tab is a navigational widget for switching between documents

## 8.2. Usability

When we are talking about usability it means how a person can use a system through an interface that makes it easy in the psychology and physiology of the users. Is the system efficient, effective, comfortable and satisfying to perform a task? To be short, how user friendly is the system for a user? While we go further in this paper we will see that Second Life's usability is very poor. It is very clear that the makers did not spend enough time to improve the usability. Because of the lack of usability many people do not want to spend so much time on Second Life. Most people only play Second Life for a few hours, but after that they will not play Second Life again.

We can use usability testing to see if the usability is good or not. With usability testing, we can measure how people use the interface to get tasks done. Most usability testing areas are time, accuracy, recall and emotional responses.

Time: how long does it take a person to finish its tasks?

Accuracy: how many missteps does a person make before he can finish its tasks?

Recall: will the tester be able to perform the same actions after a while?

Emotional response: how does the user feel after completing its tasks?

The GOMS is a model to measure the usability of an interface. GOMS stands for Goal, Operations, Methods and Selection rules. With the GOMS model people can predict how long it takes for a user to achieve its goal with a user interface. Operators are actions that need to be performed to achieve the goal. Methods are different ways of operators to accomplish the goal. If there are different methods to accomplish the goal, selection rules are used to explain why users use some certain methods.

## 8.3. Second Life Interface

We know that Second Life is a virtual place where users can walk in a three dimensional world. But do we also know what kind of interface Second Life is using? People would think that Second Life uses a virtual user interface, but that is only half true. Second Life's user interface is based on graphical and virtual user interface. The avatar is walking in a three dimensional world where it interacts with other objects and avatars, but one guides his or avatar with a two dimensional interface. Around Second Life users see different buttons, menus and they are all two dimensional, and that is still a graphical user interface.

## 8.4. Does Second Life have a user friendly interface?

A user friendly interface is where users can use a simple handling that the computer understands immediately. So the usability of the system is good. Any user can easily understand the interface and what they need to do in order to perform it tasks. A clean communication between the user and the computer is the work of good user interface (UI) design, but the interface should also understand the capabilities of the user and if the user does not have that quality, it will support the user to perform its tasks.

Linden Labs, the founder of Second life recognized that Second Life has a high learning curve. The interface of Second Life has been known for their immense options. Second Life approach to the graphical user interface is called "creeping featurism" or suffering the "designed by engineers". The Second Life viewer is a complex, multi-layered application, consisting of many sub-windows (such as Inventory, Building and Scripting). The current user interface is intimidating to new users and cumbersome for experienced users.

There is a lot to improve for the graphical user interface of Second Life[29]. Not only the Graphical User Interface is difficult to use or has a high learning curve, but there are also problems with the virtual user interface. Although the virtual world is a copy of our real world, navigating in a virtual world is very different.

We can describe a user friendly interface as follow[30]:

### 8.4.1. Clear

*If the interface is clear and neat, it will prevent users from making errors and one will know what information is important. Also it is easier for the user to navigate the interface and enables to learn while using.*

New users have difficulties getting along in Second Life for the first time, which is due to the unclearness of the graphical user interface that does not provide enough information on the actions. There is too much text on the screen and it takes time to hide the unnecessary information. Study has shown that people only can multitask if other task has become automatically for users. For its way, it is more important to have fun with Second Life instead of clicking through a lot of options to find users way through the user interface. The user gets a lot of different information (popup) windows in Second Life and not all of them are useful or important. Linden Labs is trying to assist the users by giving a lot of information, but it would be more helpful to get those step by step. There is simply too much information and there is a chance that users will not read but ignore it because the amount time that there is needed to read.

Opening two or three windows at the same time makes it already unable to see Second Life; since some of them are transparent and some are not. It is confusing for the user and he or she might close the wrong window, but the beginner probably will make a lot of errors due the chaos of the graphical user interface.

And there are times when users open a window; the window is actually bigger than users screen. Users have to manually fix the size and or even drag it to a position where users can see everything. The graphical user interface should be smart enough to resize it automatic.

### 8.4.2. Consistent

*When the user interface is consistent the user can easily adapt new tasks from previously learned knowledge.*

Like I described in the previously paragraph, there is not always consistency in the interface of Second Life. This is because there are different options to handle the windows in Second Life. In Second Life, handling the avatar is not easy: walking forward is for most of the times not uncomplicated, it looks like users are walking, but on the road, the avatar looks like jumping or walking a little bit differently. Other difficulties are how to handle different windows in Second Life. Sometimes users can close them by pressing the [X] button like in Windows, but others have to close them by pressing the button again that users activate the windows.

The graphical user interface does take some approach like operating with OS Windows XP, like users can get help by pressing "F1" or to cut and copy, users can use the shortcut commands "Control + C" and "Control + V" or like some games, press "ENTER" opens the Chat function.

### 8.4.3. Simple

*A simple design of the interface is a good way to help users to knowing the interface better. But making a simple interface is not easy; because there must be a balance between maximizing functionality and maintaining simplicity.*

If all the windows in Second Life are closed, the interface is quite clean and neat, but in Second Life users always have to open a few windows for information. Some of the windows are very big and it is blocking the screen where the interaction of the avatar is happening. Users can get confusing since all the windows can be placed over each other and it looks disorganized.

A big problem is that there is too much text, both in the virtual world and the graphical user interface. The user has to read a lot before they can make a decision.

The interface can be simplified since not all the functions are needed, but Linden Labs did not make a difference from an inexperienced user or an experienced user.

Instead of using the keyboard, users can also activate options through the right button of the mouse. By right-clicking the mouse button users activate a menu called the Pie Menu. One will get a series of different options and that means one does not have to memorize all the shortcut keys of the keyboard or going all the way into the dropdown menu. Some of the options require clicking a few times more, so the fast access to some commands is lost. But it is still an easy way to navigate because there is some guidance in there. While this is convenient, it violates the aesthetic appeal of Second Life.

Other problems are that Second Life lacks of different buttons or icons and they tend to use text over graphics. There is also not enough sound to provide feedback. Second Life uses the OS-native graphical controls or widgets. It is uninteresting to always see the same buttons and text boxes, so it would be wise to use a few alternatives.

### 8.4.4. User-Controlled

*The user should always be the person that is controlling all the action that need to be made and not the computer. The computer should always only assist users so the action that users make can be fast and accurate.*

In Second Life, the user has absolute control on every aspect, the appearance of the avatar; movements of the camera, object behavior or even the land, there are always some options where users can make changes in it.

### 8.4.5. Direct

*When users make an action there should be an immediately visible cause-and-effect, so the user knows what is happening and knowing that he or she controlling it. This also helps to learn faster.*

Most of the commands are not direct but lying under different sub-menus. A way to have quick access is using keyboard shortcuts, but Linden Labs did not make for every command a keyboard shortcut.

But navigating in Second Life is not that easy, since there is a lot of indirect response because of difference reasons, like slow computer, slows connection, too much objects in a area. All those can lead to an indirect action. Most used term is "lag", it means that there is a delay between the action users have made before it actually will shown it on the computer screen. The network code from Second Life is rather poor and needs some fine-tune to make it better.

Other problems are the time that needs to load different information. Teleporting, images, sounds, almost everything, there is a delay. When you enter into a region, it takes times before you actually can see the whole region

### 8.4.6. Forgiving

*Users make mistakes, so it would be useful if there is an option to cancel the action or go back to the previous step. It is important that a user can undo his action so he can learn from its mistakes. A forgiving interface let users know what goes wrong and how to do it right, it is learning of trial and error.*

If users accidentally delete something from his or her inventory, it can always be brought back, because Linden Labs have a trashcan just like in operating system where users can find their content before it is actually deleted.  If users have deleted something by mistake, it is not deleted immediately, but it will stay in the trashcan.

But it is not that fortunate if Second Life crashes while the user is building an object, the user will lose the object because there is no automatically saving and it means that users have to start over.

The camera is not intelligent enough, if users are standing very close to an object. Sometimes the camera is in the object what will block itself to see the avatar. Users need to manually move the camera out of the object

### 8.4.7. Provide feedback

*Let the user know what the action means when it has been activated. It is important so the user know what is going.*

Second Life uses terms that users may never have heard about it. Although the messages are very detailed and maybe too long, users will not always understand what it means. All the error messages looks like the same and has the same warning sounds. More differences in each warning would be appreciated.

### 8.4.8. Aesthetic

*Use visual elements with ease that help the user know if it has a meaning or not.*

Second Life uses text to represent information instead of icon or graphics. This makes Second Life harder to use. Icons that are being used on the interface are either too small or not representative.

### 8.4.9. Affordance

*An element on the interface that helps users to understand what is stands for and what the use is. The function will be explained based on the shape of an object or icon.*

While almost all the software uses the cursor shape as an affordance, Second Life hardly use it, or it is too small to see the differences. This inconsistency can cause a difficulty for users, since with a simple affordance like a 3D recess around objects would help to clear things up.

### 8.4.10. Conclusion

It is clear that the graphical user interface from Second Life is far from user friendly. Users of Second Life need informative feedback; give plenty of visual cues to function, and provide knowledge that users need to know when perform an action and prevent them to memorize too much command sequences. This is all needed because Second Life has a complex graphical user interface due the immense of options. But the current graphical user interface is far from that. The interface of second life is known as creeping featurism where the creators did not think about the usability of the graphical user interface. Instead of having so many options, Linden Labs should make plug-in architecture so users can manually turn the abilities on or off. It is not only the problem of the graphical user interface but we there are also problem related to the mass of information that users get, there is need to strip information away.

So, by improving the usability it would be sure to help to decrease the learning curve, since user do not have to fight with the graphical user interface because the graphical user interface is a part that help the user to get into the world of Second Life. Not only it will guide them, but without troubles or fighting, it is a pleasant way to use Second Life.

## 8.5. Description to improve second life usability

What are the options to improve the user interface so it becomes more users friendly? These are a few things that I recommend.

### 8.5.1. Personalization (workspace)

There should be an option to save the interface for different users. Since in Second Life there are some changes that you can make on the user interface, for example, all the windows are drag able, that means, you can place them on your favorite's places.

The graphical user interface should be smart enough to resize windows to fit the size screen.

### 8.5.2. Multitasking

Multitasking should be integrated better, since residents can do many things at the same time. So, in Second Life, different windows should be intelligent to know when to popup and when not. When users are doing one active task, the user interface should know that and not disturb the user.

### 8.5.3. Forgiving operations

New users of Second Life makes a lot of mistakes, they want to be redirected rather than rejected; they also want any context or prior actions to be redirected with them. There should be an easy way to re-navigate to previous place. And there should be more way to undo the options.

### 8.5.4. Mini-map

The mini-map is not always clear; there should be more differences in color.

### 8.5.5. Improved search system

A Google approached search system would be better. Although they have renewed the search function, it takes a lot of time before the search results will show.

Unlike other window, the search window is not resizable, so when the screen gets smaller, the search window will not.

### 8.5.6. Simplified editor

The biggest problem is the difficulty to edit or create content. When we are dealing with 3D building object it would be good to see the objects from different angles, an approach like a 3D modeling program 3D max.

The appearance editor should be more simplified or at least, make a simplified editor for new users. There is too much option to edit the appearance of the avatar. It cost users a lot of time to change the avatar.

### 8.5.7. Improved affordance

Use more affordance, the mouse cursor of Second Life is too statically and it is almost at anytime the same. It would be easier to navigate if Second Life let the user know what the function is when it is placed on something. Like when you move the mouse over another avatar, it will be changed into a human. Specified icons on objects would be preferable, like touching, clicking, driving. All those small affordance would help user easier to navigate in Second Life.

### 8.5.8. Difference interface

Make sure there is an example between beginners and more advanced users. Hide them when they are unnecessary. Do not use too much difference buttons for one handling.

The toolbar of Second Life should not be used since user can approach them through the down list menu and power users can access it through keyboard shortcuts.

### 8.5.9. Dock able windows (tab)

A possibility to dock windows into each like other like in Photoshop CS3 is a real space saver and users still can access to the windows very fast.

### 8.5.10. Easy to understand

Second Life use sometimes a lot of terms that cannot be understand by users. By making it easier users know what is going wrong.

## 8.6. How to change the user interface

*One of the problems with our current UI system is that it is all hardcoded to some degree and is very difficult for even us to change... time consuming. So we really want to make it easier on ourselves. And, in the process, open up the ability to skin and modify the UI by the residents. The plan is to make the UI more data driven so it loads some config files (XML) and builds the UI based on what they say. If it was totally data driven, then much of what you want could be done. But not all... like detachable windows would be extra stuff, and would have to come later[31]*

### 8.6.1. In Second Life

In Second Life users can move the windows into different positions. Widows can overlap each other. Not only can users drag them into different positions but most of them are resizable too. And when the windows are not needed users can close them.

The problem is that the windows position or windows size will not be saved and that means that user have to rearrange the windows every time when they log into Second Life.

#### 8.6.1.1. UI Size

If the user interface looks too small, which may happen if you're running Second Life at a high resolution, you can move this slider to the right to enlarge windows, text, buttons, menus, etc. It not only a helpful for high resolution, but for the overall usability, users does not have to point that exactly if the buttons are bigger.

#### 8.6.1.2. Chat Font Size

This changes the size of the text that appears in the Chat Console. Different from the UI size, this has only affect on the chat window.

#### 8.6.1.3. Chat Color

These settings change the colors of different kinds of text in your Chat Console and Chat History. If users do not like the color of the chat users can change it although the choices are not that much.

### 8.6.2. XML

A way to change the graphical user interface is by editing the XML files in the Second Life folder. There is no documentation published by Linden Labs that users can use the XML files to change the interface. This is a new feature for future viewers where users can change the graphical user interface by themselves. It is at this moment not easy to change it since users have to know about how the structure of XML works. In the future there should be a tool made by Linden Labs or a third party to edit the XML files easier.

In the XML files there are several options to tweak, it is even possible to assign keys to different commandos from the menu. It is also possible to strip and rearrange the drop down menu or windows. There is too much option that is not used by new users so removing some options it not a bad idea. Also by rearranging the menu list it should be easier to find some options. For advanced users it is possible to assign keyboard shortcuts with it.

**Advantage:**

- Users can see immediately the results by login to Second Life
- No need to have experience on programming

**Disadvantage:**

- No documentation, users have to find everything by them self.
- Users need to know how a structure of a XML files work
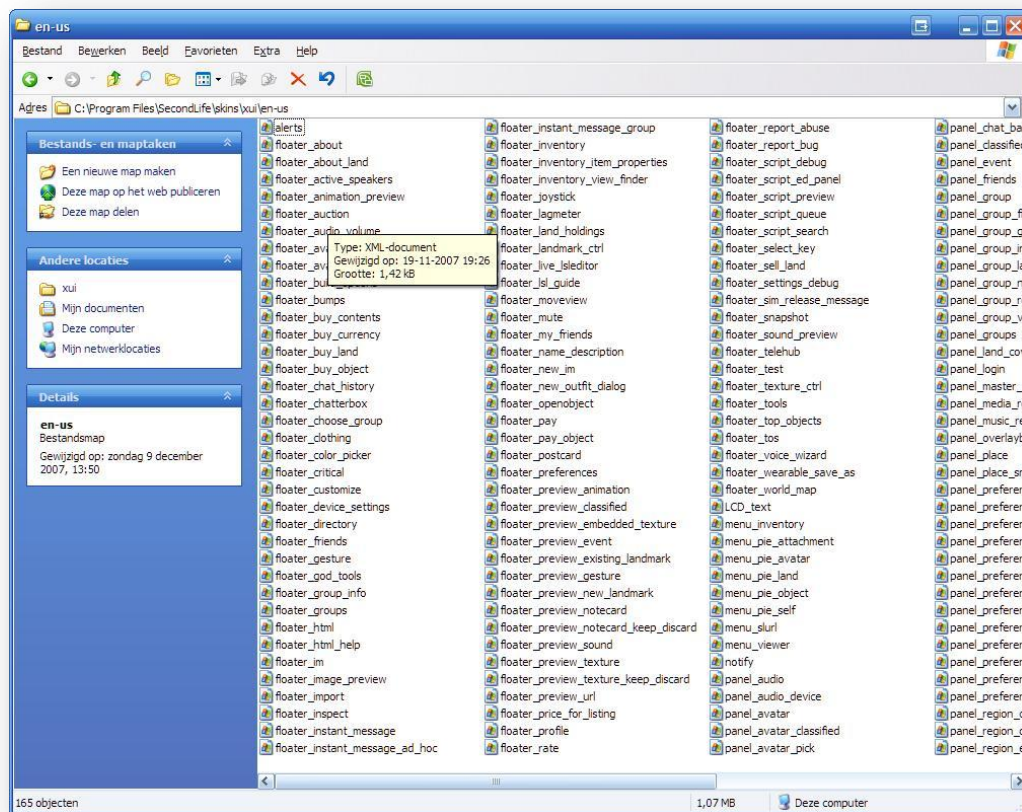
**FIGURE 25: DIFFERENT XML FILES TO CHANGE DIFFERENT WINDOWS**



**FIGURE 26: CODES FROM A XML FILE**
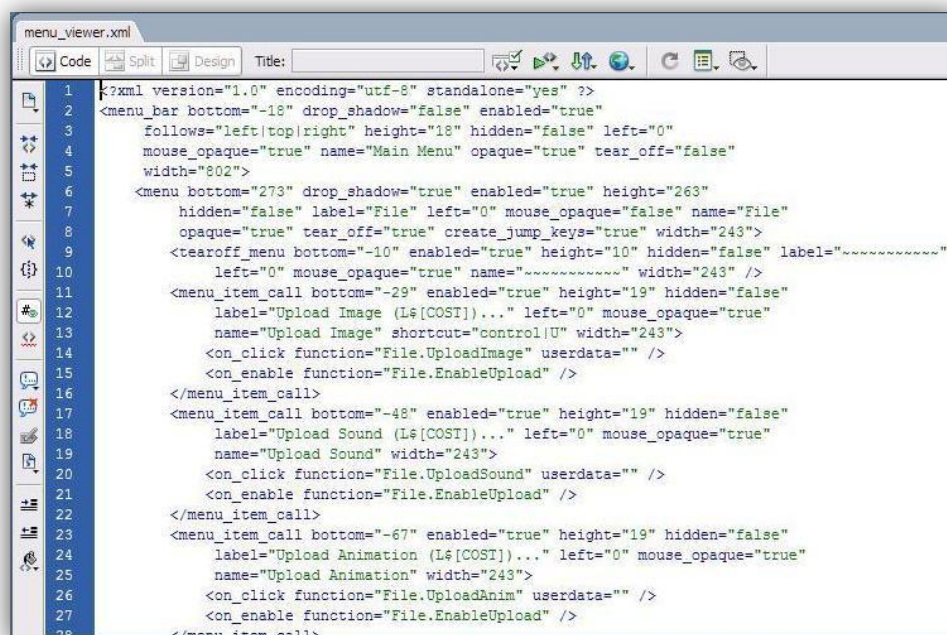
## 8.6.3. Scripting

LSL is the Linden Scripting Language; its structure is like Java and C++. Scripts are sets of instruction that can be placed inside any object of Second Life.

It turned out to be a disappointment because LSL does not have functions to control the graphical user interface. With LSL it is possible to create Head-Up display on the graphical user interface, but it is not what needed since it only will use more of the display screen.  Head-Up display is still useful since they are intended to allow scripter to create user interface elements, such as speedometers or game buttons. Scripting is not easy to learn, like everything else in Second Life it has a steep learning curve.

Using LSL is possible by using the default tool to create LSL script.

**Advantages:**

- LSL has similar syntax like C or like Java so it easy for users to learn if they have experience on those language.
- Lot of sources on the internet for tutorials about LSL.
- There are a lot of residents that have skills on LSL and willing to help others.

**Disadvantages:**

- The high learning curve is users have never used scripting.
- LSL only can handle common widgets.
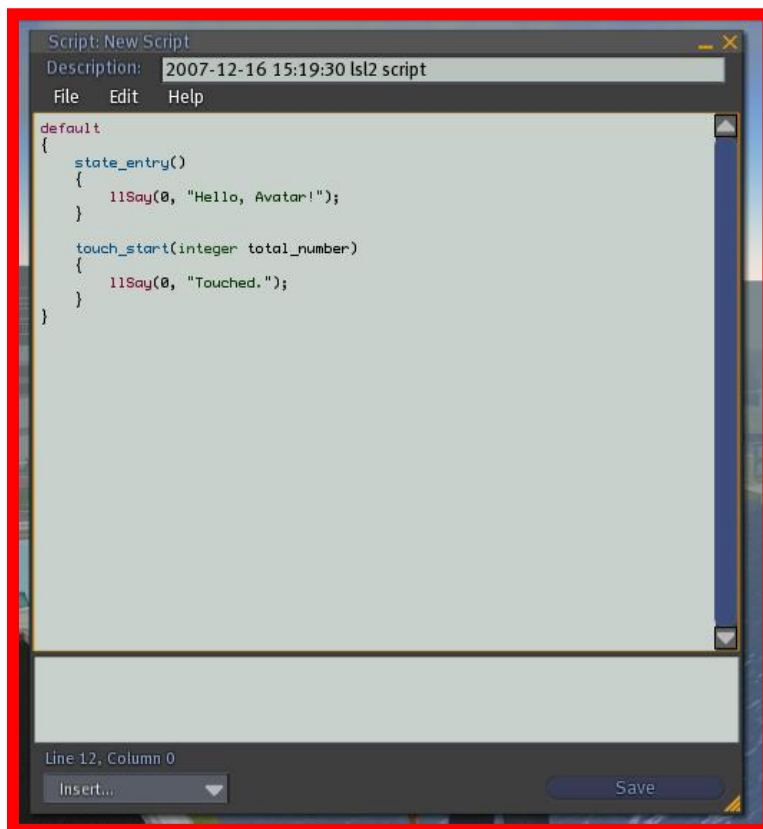


FIGURE 27: SIMPLE SCRIPT WINDOW WITH SCRIPTS

## 8.6.4. Source code

The reason for Linden Labs to make the source code of is the hope that there are other third parties willing to change the user interface so not all the load will be on them. Although the source code is spread around for a year there are not that many improvements of the interface, only the OnRez viewer of the Electronic Sheep Company has been launched so far. And that is actually not what Linden Labs had in mind; they hope that more parties would willing to take this chance to improve the user interface to be more useable. There are some same alternate viewers but they are only less buggy then the default client. It also cost some difficulty to use them since users have to download some extra files.

The problem with changing the graphical user interface or adding new features to the viewer by third party is that each upgrade to the viewer by Linden Labs. The code for changing the graphical user interface needs to be redesigned again to the new releases.

The source code of Second Life is written in C++ language. Users may use the code, they can download the code freely from Linden Labs and compile it use the code.

However, users need to use Visual Studio or similar application to compile the code. After installing Visual Studio users also need to download additional development tools. After that users also need to download third parties libraries like QuickTime libraries. This is for example needed since the viewer require QuickTime libraries to play movies or music in Second Life.

It requires a lot of time and knowledge to using the source code and not everybody has that. Not everybody has experience with programming and users need to have experience on the code C++. C++ is a object-orientated language (OOP), so if users have experience on that it does not requires much too know more about C++. C++ is an object-oriented version of C. C++ programs are fast and efficient which helped make C an extremely popular programming language. Object-Orientated programming is a way to program the code with more structure so it looks more synoptic. Using the viewer code is not that easy because there are a lot of resources that needs to be done, so only one person is difficult to change viewer in a short time. There is a group of expertise programmer needed to change the whole graphical user interface.

By open sourcing the client, Linden Lab has provided the source code to the viewer of Second Life. None of the server code has been open sourced.

**What is open-sourced?**

- User interface
- Creation of primitives
- Playing of media
- Menus
- Your interface to your own inventory
- Windows, or as Linden Lab calls them, "Floaters"

**What is not open-sourced?**

- Object storage
- Any simulator code
- Physics
- Linden scripting language
- Permissions on objects

**Advantage:**

- User have the control on every aspect of the viewer

**Disadvantage:**

- Difficult, learning curve is high
- No tutorials
- Need compiler
- Lot of codes

Most of residents expect that there will be alternative graphical user interfaces. However, it is almost a year and there are still not that much alternative viewers released. But there is enormous potential to improve and it is one of the most requested features from the residents. Other possibilities are a light Second Life viewer, so users can use it for other devices like maybe a mobile phone. But a lighter client for the personal computer is also a good idea so users do not need to have a good computer with good video card.

But not only can we change the graphical user interface with the source code, but it also improve the stability of the client. We should not forget that a lot of people find it frustrating that Second Life is so unstable and that is also a reason why they quit using Second Life. If we can improve the quality of the viewer more users will not get frustrated by it so there is not another reason not to use Second Life.

## 8.6.5. Conclusion

There are three ways to change the graphical user interface. There are advantages and disadvantages of each way to change the interface.

In Second Life itself users can move all the windows in the way they want and they also can change the text size and that it.

The only groups users that can change the graphical user interface are by using the code of the viewer are programmers that have experience with the C++ language script. People need to do a lot of effort before they actually can look at the viewer. By publishing the source code of the client software (viewer) they hope that third parties are willing to take the job to improve the graphical user interface. It is the most flexible way to change the graphical user interface since programmers can have influences on the whole viewer. Not only can they change the graphical user interface, but they also can try to improve the stability of the viewer.

Another way to change the graphical user interface is by editing the XML files in the Second Life directory. However, this is also not something that everybody can do and currently, we miss a tool where users can edit it very easily. Users need to know how a structure of XML works, but it is the easiest way to change the graphical user interface.

# 9. ALTERNATE VIEWERS

Since Second Life has published the source code of the viewer of Second Life. Everybody is allowed to make a Viewer of Second Life. A viewer is client software that makes contact with the Second Life servers where users can enter in the world of Second Life. Users can say the graphical user interface is the viewer of second life. Users use the viewer to enter the world so users can see everything, but also, with the viewer users can make actions that has meaning in Second Life. In January, Linden Lab released the source code for the viewer software, which displays Second Life on users' computers. At the time the company said the release would lead to user interface improvements and new "skins" for the software.

## 9.1. OnRez Viewer

A viewer made by a third party name, the electric sheep company is called OnRez Viewer. The OnRez viewer seems to have been thoughtfully designed. Unlike the Dazzle project by Linden Labs, they have changed the whole Graphical User Interface of Second Life in the hope it will be more user friendly for new users, but there are also new features implanted what is not yet available for the viewer of Second Life. It appears similar to a web-browser, giving new users a familiar interface structure; complex options such as the "Build" button have been hidden or stripped away; disorienting options such as "Fly" have also been tucked out of sight. In all, the viewer appears to be idiot-proof. A very good move from OnRez is that they have implanted some extra functionality to their advance, like a few buttons that are related to OnRez products, like shopping, currency exchange system. They did made an improvement when it comes to user friendly interface comparing to the quirks of the Linden Labs Viewer client software.
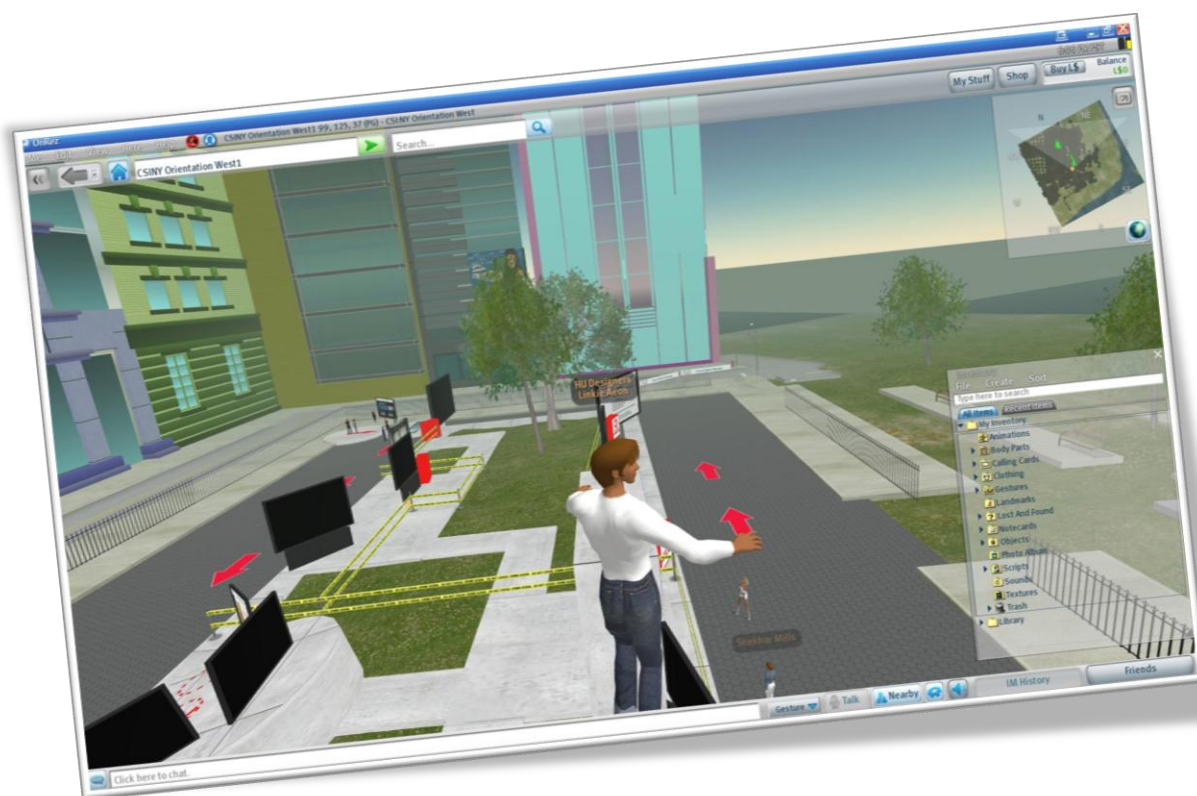


FIGURE 28: ONREZ VIEWER

Most of the changes users will notice are at the top level of the Viewer: the UI and menus. All the core features that current residents use such as building tools, client and debug menus, taking snapshots, etc, are all in there. In this way more there are fewer button options and the categories are more logical.

Other than redesign and simplification, the two new features are the back/history button for SL locations, and the ability to navigate the web inside the Viewer. There is also a Shop button that pops open the embedded browser and takes you to Shop OnRez.

Although they do not have did make other optionally windows more user friendly, in the future they hope to realize that. The Electronic Sheep Company does not have unlike Linden Labs a webpage where they keep their status on the track so we can see what features they will implant into the client.

**Some key features of the OnRez Viewer:**

- Redesigned interface to improve the user's experience
- Integration with the OnRez suite of services
- Improved virtual world navigation tools
- Integrated web browsing

## 9.2. AjaxLife

> *Due to some combination of boredom, wanting to talk to people in SL, and inspiration from a vague memory of something Interfect Sonic did, I decided to start work on an AJAX based SL client.*
>
> *It's still under heavy development, but the result so far is an application/page/site called AjaxLife.*

This is a quote from Katherina Berry. She has created an in-browser AJAX application that allows users to login to Second Life without the graphics. People can consider this as a Second Life light client. Users now can access to Second Life as long they have a browser and internet connection. There is no need to have a good computer with a good graphics card because there are no 3D graphics. While users cannot yet initiate new sessions to chat or use the Search functions, but it is possible to reply on incoming messages and also participate in local chat where the avatar is. While it is not possible to see or controlling the avatar it is possible to teleport to other places.
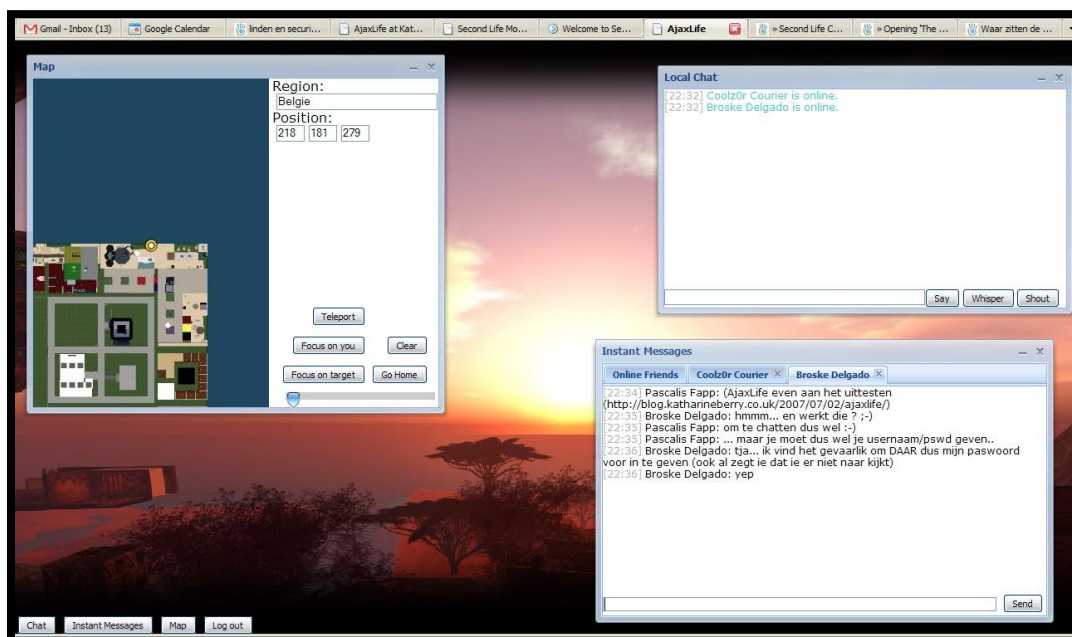
It is a huge step for a friendly interface, since users do not have to download viewers or update it. Just login by using the default browser of users favorite and users can access the virtual world. It is not more than a simplified version of other IM messengers, since the user cannot see its own avatar or everything in the virtual world. But, up to now, accessing Second Life requires a separate client and a powerful graphics card but with AjaxLife it is not needed.

Due the amount of users using AjaxLife it is going slower and slower. There are a lot of slowness and downtime. The code of AjaxLife has been published online and the creator hopes that there will be more type like AjaxLife client.

## 9.3. Conclusion

Currently, the only improvement made to change the interface has been done by OnRez viewer; there software is currently the most stable en can be used by anyone else. It is recommended to use the OnRez viewer instead of the default viewer from Linden Labs. Not only has the visual appearance improved but also making the graphical user interface more user-friendly. There are not that much alternative viewers, but OnRez viewer has made a very strong viewer so users do not miss much. And it is not needed to change the graphical user interface by itself.

The AjaxLife client is a potential although there are others things that need to be change to be accept by other residents, but it is a easy way to start with Second Life. However, due the popularity of the AjaxLife it is very difficult to login to Second Life through AjaxLife. Mostly people will drop out because of the connection time out or it takes a lot of time to login, so at this moment it is not faster than using the default viewer.

But the most disappointing is that Linden Labs did not have made improvements so far with its own viewer. They keep saying that the default viewer of Second Life is not user friendly and that it needs to be changed but at this moment they did not do anything about it. Instead, they are looking at implanting other features like WindLight.

It is almost a year but the only company that is working on the viewer is the Electric Sheep Company. There are no other viewers yet and there are no sign of other third parties is publishing new client in short time.

It is still not a bad case to open source the code of the viewer, because more people have a chance to look at the code of the viewer. Linden Labs can concentrate on other projects, but it is still needed that Linden Labs keep improving the core of the viewer. It is even recommended that they improve the code of the core viewer by making the code easier or implant new features so it is easy to change the viewer. The reason why there is not that much alternate viewers is because the difficulty to operate with the source code of the viewer.

## 10. CONTROLLER

Second Life default configuration to control the avatar is using the keyboard and the mouse. Lot users are not common with and this especially counts for new users. On the forum there was a small poll if users want to have an alternative control and most of them are interest in it.
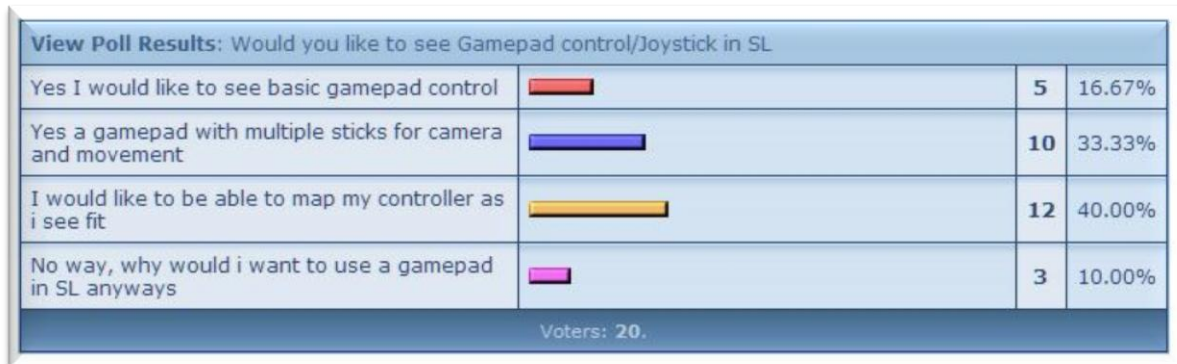


**View Poll Results:** Would you like to see Gamepad control/Joystick in SL

| | | | |
|---|---|---|---|
| Yes I would like to see basic gamepad control | | 5 | 16.67% |
| Yes a gamepad with multiple sticks for camera and movement | | 10 | 33.33% |
| I would like to be able to map my controller as i see fit | | 12 | 40.00% |
| No way, why would i want to use a gamepad in SL anyways | | 3 | 10.00% |
| | Voters: 20. | | |

FIGURE 30: POLL RESULTS OF USERS WOULD LIKE TO USE A GAMEPAD / JOYSTICK IN SECOND LIFE

Since Nintendo has launched their console Wii it has been hugely widely accepted and like it because of the low threshold to learn to use the Nintendo Wii so it is not only having gaming experiences.

Nintendo has been said that there controller the Wii Remote is even easier to use then normal gaming console controller. It means that if we can use the Wii Remote (WiiMote) instead of the keyboard or mouse it would be improvement on using Second Life and that means lowering the learning curve.

## 10.1. WiiMote & Nunchuck

The main feature of the WiiMote and the  is its motion sensing capability, this would allow users to interact or manipulate items on screen via movements or point through the use of accelerometer and optical sensing. With the motion sensitivity it should more intuitive than a traditional gamepad / controller. With its remote design it is fitted for perfectly pointing to control since has been used a remote before.

THE WIIMOTE AND NUNCHUCK HAVE 6 DEGREES OF FREEDOM (

Figure 32). The sensor uses a right-handed coordinate system with the positive X-axis to the left, and the positive Z-axis pointing upward, when the remote is held horizontally.  The motion chip is ADXL330 and manufactured by Analog Devices.  This device is physically rated to measure accelerations over a range of at least +/- 3g with 10% sensitivity.

The WiiMote communicates through Bluetooth with the Wii console so it is also possible to use Bluetooth to connect with a PC. The PC needs to also have a Bluetooth with drivers to connect with the WiiMote. The Bluetooth controller is a Broadcom 2042 chip, which is designed to be used with devices which follow the Bluetooth Human Interface Device (HID) standard, such as keyboards and mice. The Bluetooth HID is directly based upon the USB HID standard. The WiiMote contains 12 buttons.

At the bottom there a 4 LEDs so it can indicate different status when using the WiiMote. The WiiMote also have a rumble function so it makes the WiiMote possible to vibrate. And the last output of the WiiMote that can produce sound. Inside the WiiMote there is a small low quality speaker to use for short sound effects.
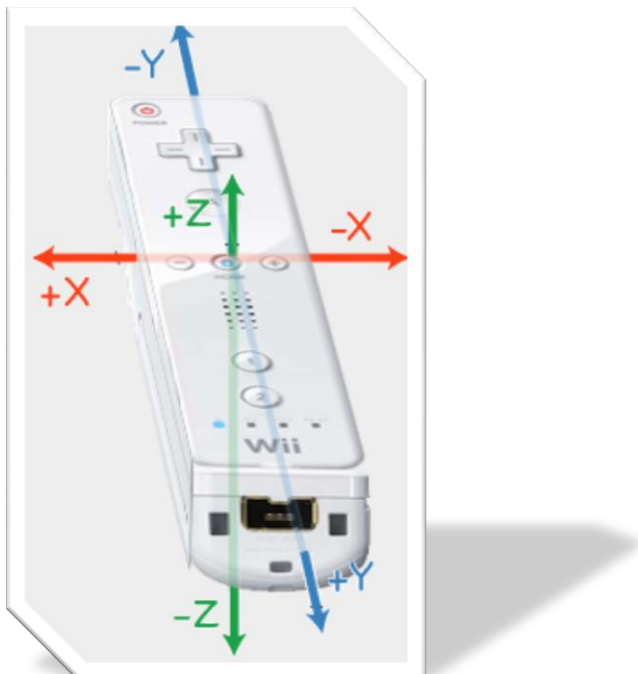
FIGURE 31: THE WIIMOTE AND THE NUNCHUCK



FIGURE 32: 6 DEGREES OF FREEDOM OF THE WIIMOTE.

## 10.2. IR sensor bar

Only with using the motion sensor it is not accurate enough to use the WiiMote as a remote to control the on-screen cursor. To improve the accuracy they augmented the WiiMote with an infrared image sensor on the front designed to locate two IR beacons within the WiiMote field of view. The IR beacons are implanted in the bar on what we called the IR sensor bar.

The IR will always send light and it will be tracked by the infrared image, the PixArt sensor. By tracking the location of the two IR light in the sensors 2D field of view, the WiiMote can have better accuracy.



FIGURE 33: WII SENSOR BAR

## 10.3. Software

Wii developers are having a huge advantage since AiLive have made software for the WiiMote called LiveMove. With the software it is possible to train the system to recognize different motions by physically moving the WiiMote in the desired pattern. Therefore it is not need to scripting and developers just have to train the WiiMote. It is very easy to use and users do not need to learn to script or do anything difficult, just moving the controller for a few times and the gestures will be learned and can be used. The problem is that it is only available for Wii and not for the PC.

Through the software GlovePIE developers can program the WiiMote so it is possible to emulate joystick, keyboard or other devices inputs. The combination of GlovePIE and WiiMote on the computer is a strong tool. There are a lot of developers making scripts for PC so users can use the WiiMote with ease for different program.

## 10.4. Conclusion

The huge success is a big part of the WiiMote because the low threshold to use it and it is for sure if we can develop the WiiMote to use for Second Life it would be easy to navigate for everyone. There will be a combination of WiiMote and Nunchuck to control the avatar in Second Life. Afterwards there will be a usability test to see if using a WiiMote is actually friendlier than a combination of keyboard and mouse.

## 11. WHAT IS INTERACTION?

When there is an effect of one or more variables on another variable, it is called it interaction. In Second Life there is only interaction, a simple example is like when chatting with another resident. There is a two-way communication so it means one is interacting with each other. But it is not only communication, but also interaction and building in Second Life is also interaction. Interaction in Second Life is also called 3D-interaction, since one is interacting in a three dimensional world.

When there is an effect of one or more variable on another variable, we called it interaction. In Second Life there is only interaction, a simple example is like when users are chatting with another resident. There is a two-way communication so it means users are interacting with each other. But it not only communication with each other is interaction, but when users are building in Second Life, users are also interacting.

### 11.1. Interaction in second life

Second Life is a world with only interaction. Every handling that has been made is an interaction.

There are 4 different categories:

**Interaction with avatar:**

- Body
- Head
- Eyes
- Ears
- Nose
- Mouth
- Chin
- Torso
- Legs
- Skin color
- Face detail
- Make up
- Body detail
- Hair color
- Hair style
- Eyebrows
- Facial
- Eye
- Shirt
- Pants
- Shoes
- Socks
- Jacket
- Gloves
- Undershirt
- Underpants
- Skirt
- User Profile
- Inventory
- Landmarks
- Sit
- Fly
- Animation

- Snapshot
- Video
- Teleport
- Vehicles
- Walk
- Run
- Fly
- SLURL

**Interaction with other avatar:**

- Chat
- Animation
- Instant message
- Private
- Group
- Email
- Voice
- Note cards
- Sound Clips
- User Profile
- Mute
- Pay
- Give
- Sell
- Track Friends

**Interaction with objects:**

- Create
- Select
- Edit
- Linking
- Lights
- Physical
- Materials
- Streaming Media
- Textures
- Delete
- Scripting
- Interaction with GUI
- Inventory
- World Map
- Search
- Camera Control
- Menu
- Keyboard & Mouse navigation

**Interaction with the world:**

- Zoom
- Touch
- Move
- Push

- Pie Menu
- Buy
- Sell
- Search

## 12. SOLUTION

Except improving the graphical user interface or using a 3D controller like WiiMote, there are other solutions to decrease the learning curve.

## 12.1. RegAPI

By using RegAPI (Registration API) it is possible to create a community that makes connection with servers of Second Life. RegAPI is a tool that makes it possible for third parties to register their avatar outside secondlife.com. It is very hard for new residents specifically to get involved in the experience of Second Life. They need to learn how to use the user interface, how to search or even how to navigate the avatar. With the RegAPI it is easier to streamline that.

This would be a great start for FEM students, not only can they keep easy in touch with other students, but through the website users can also find events or put stories onto it.

See it as a portal website where FEM students can start to Second Life and through the portal they can have access to all kind of information like events. Searching in Second Life is still not easy enough and with a portal website it is easier.

The RegAPI is still in beta and future versions will allow new default avatar appearances, custom starting inventories, and pre-assigned group memberships and roles.

**The RegAPI allows:**

- Register Residents for Second Life from your own website
- Track people registering from your site
- Send them to a location of your choice when they first enter Second Life

**The RegAPI does not currently allow you to:**

- Assign new Residents to groups
- Provide inventory
- Creating attachments
- Alter the appearance of the Viewer
- Alter or control the Resident's outfit
- Restrict where you can place people upon log-in (please make sure that the owner of the landing location agrees to have the new Residents arrive there if you don't own that land)
- Provide load balancing (it is advised to use the RegAPI to selectively set the starting location based on data sent from an LSL script in each location)

## 12.2. Interactive Tutorial

Together with making the RegAPI available they have launched a few orientation islands where new users will launched to it when they are in going into Second Life for the first time. At the orientation island is island with an interactive tutorials where users have to fulfill a few goals before they can leave the island. Most of the goals are very basic. It is an approach to known about a virtual world more in how to navigate or how to edit the avatars appearance and how to find help if the user gets stuck. Interactive tutorial is a good guidance since the users has goals that they can achieved while learning it.

But there are problems too like the tutorial is very big and it cost a new user more than a hour to complete all the goals or the interactive tutorial did not save all the goals that the user have archived so users have to do a task again.

Overall, it is a good way to help new users to get started with Second Life.

## 12.3. Working together

For VBL there was a group student that was following a seminar about Second Life. VBL wants us to give a workshop about Second Life so students can know more about Second Life and also want them to spend a day in Second Life to get more feeling about Second Life.

This assignment was interesting for me because I want to know if users are working together would it be helpful. So for VBL we have created a workshop for students and afterwards they have a few assignments that they have to fulfill. The assignments are not only about navigation since there is already an interactive tutorial from Linden Labs itself, but also trying to get known about the graphical user interface more. See appendix B for the assignments but it is in Dutch.

By giving a workshop users can already known about the basics and giving them a few goals they know what to do and they are actually having fun with it. It was a surprise how fast the students get used to how Second Life works and they also do not need help from me. By working together they were able to support each other and try to find solutions with each other. There are of course sometimes problems, but most of them are user interface related. Most of these options are in different options window so it is not easy to find. We have though that to complete the whole assignment it would took around 5 a 6 hours to complete it but most of them complete it within 3 hours. Most of them were quit surprise and actually liked Second Life, but the graphical user interface is something they did not like.

From this workshop it is clearly a case that the graphical user interface is not user friendly and finding options is not easy but working together is a very helpful medium.

## 12.4. Standard contents

Linden Labs have put at the start of Second Life contents in the inventory, like textures, pictures, clothes, etc. And out in Second Life there are a lot of other contents that is free and everybody is allowed to have it for its own use, but the drawback is, users need to find it first. And that is a problem for new users since they do not know about it and when they know about it, they do not know where to find it. It can be fun for people if they know that there is possibility to get the content like textures, objects, script, clothes for free, but not everybody knows that and it cost too much effort to find the goodies.

Linden Labs should have more contents available for new users so they can start immediately instead of searching for it. Besides not needing to search for it there is also no need to make contents for itself, because creating objects requires a steep learning curve and starting immediately with building objects is not needed.

## 12.5. Alternative editors

Within Second Life it is possible to create anything users want, but all the editors in Second Life are not easy to use. The learning curve of the editors is very steep. When it comes to scripting or building objects users will known it from that it is not going to be easy, but even editing the appearance of the avatar is not easy. And created contents are not possible to save it on users own hard disk, users have to trust their content to Linden Labs and that is not always going good. Users sometimes complain about lost content from their inventory. And we should not forget that using the camera in Second Life is not easy, so using alternative programs to create different content is not a bad idea. It is possible to save on users own hard disk. And the editors are specified for its purpose. There are a lot of offline alternative editors for Second Life but not everybody knows it and it would be good if Linden Labs made more publicity about alternative editors / software. Alterative editors tend to also have a lower learning curve and that is the most important purpose.

Here are a few editors that I recommend to use it:

### 12.5.1. PloppSL

PloppSL is a simple tool to create sculpted prims[32] for Second Life. Sculpted prims are three dimensional meshes created from textures. It is very easy to create objects by just a few simple clicking, since the software is actually made for kids. The software is very easy to use since the interface is very intuitive and it has standard

a few pre build objects in it. There are not that many options but for starters it is great to use it, since it is possible to create sculpted prims in a few minutes and it is actually a lot of fun to play with it and then import it to Second Life.

## 12.5.2. Moment of Inspiration

Moments of Inspiration (MoI) is a tool to create sculpted prims like PloppSL, but it is more advanced and has a lot options while it still has a friendly user interface. This is especially recommended for users if they are interested in creating objects with an easier tool than from Second Life. The graphical user interface is very clear and users will find it through the user interface very fast.
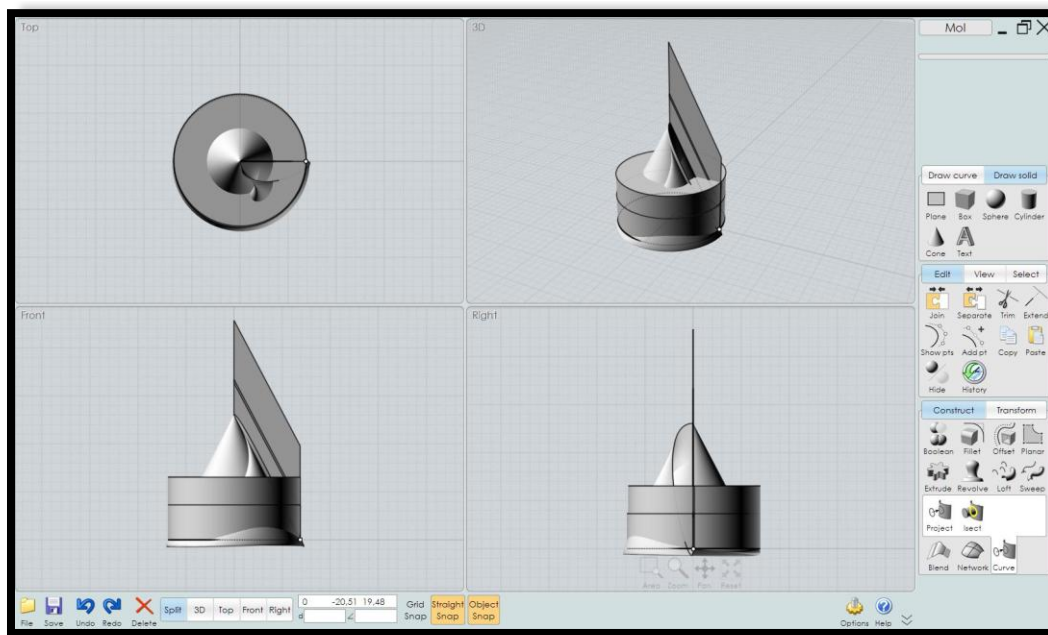
FIGURE 35: CLEAN AND CLEAR USER INTERFACE OF MOI

## 12.5.3. LSL-Editor

LSL-Editor is an alternative editor to create LSL scripts for Second Life. Although the editor of Second Life is very easy to it misses guidance to help users making script. LSL-editor is more advanced than the standard editor and it can help users to create script.
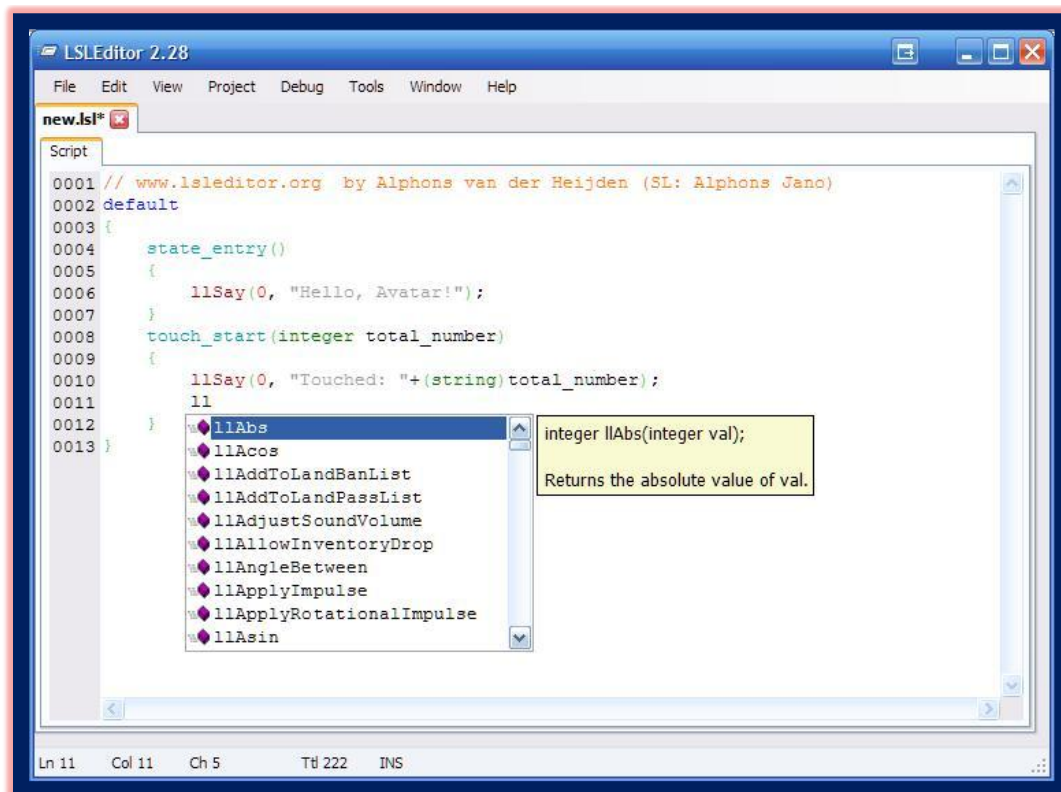


FIGURE 36: LSL EDITOR INTERFACE WITH AUTO INSERTS EVENTS

## 12.5.4. Auto Script

Auto Script is not a tool but a website that is trying to help users to create script by using a few pre –build options. It is not advanced but really easy to use since there is no need to know anything about scripting. J
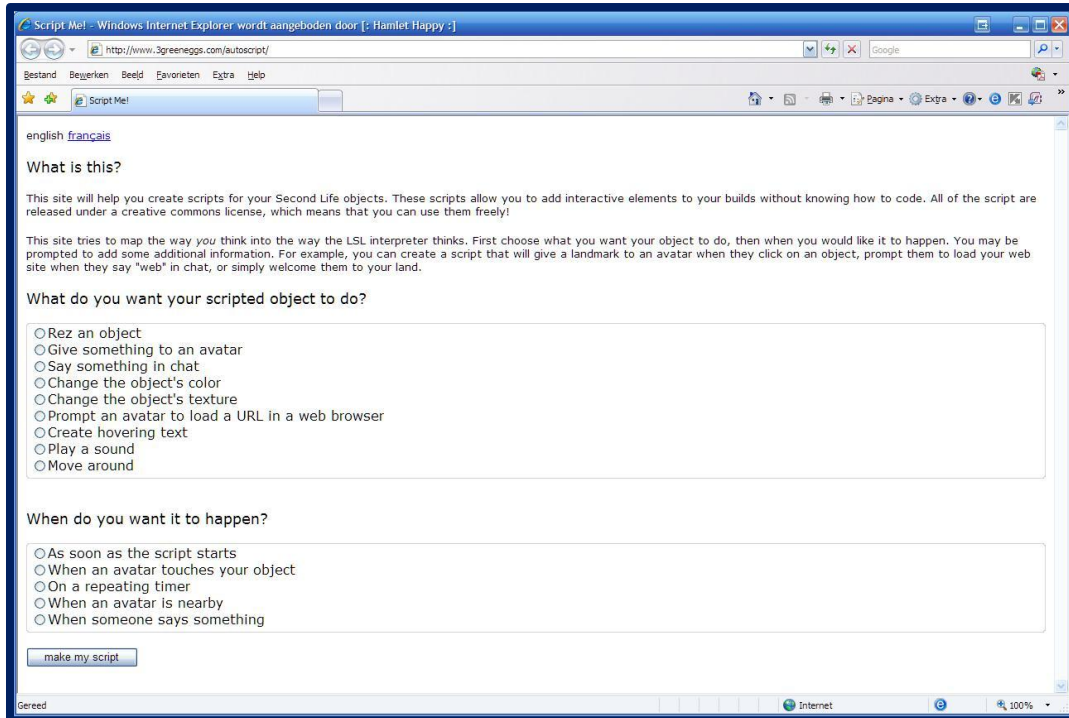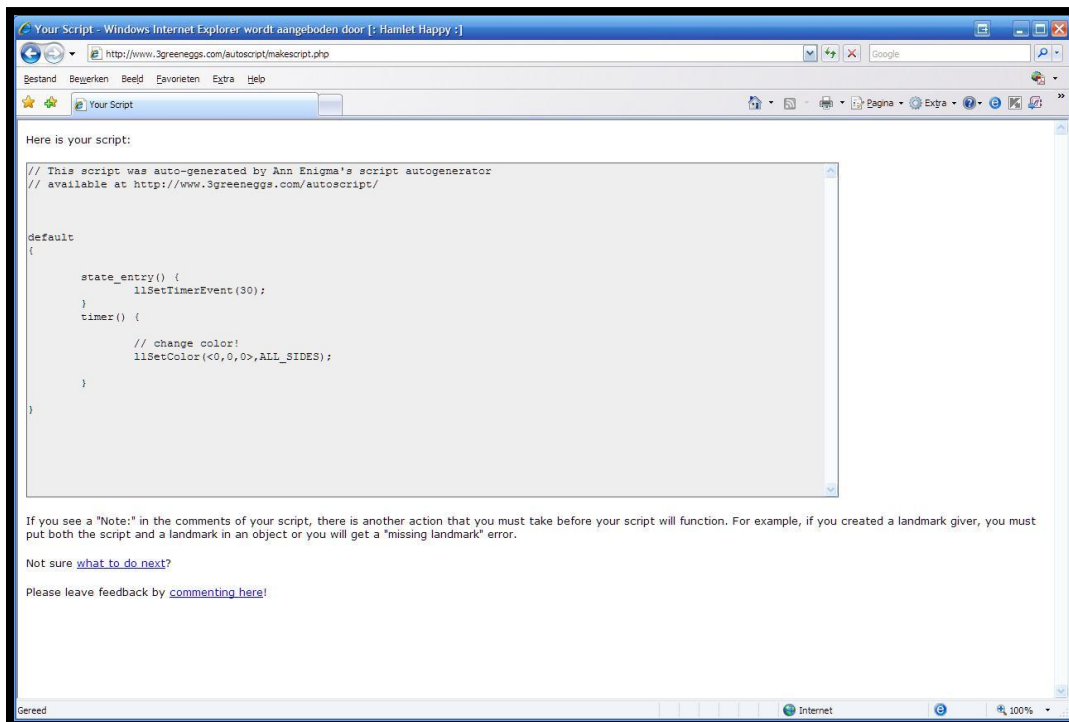
### 12.5.5. Conclusion

This is only a small recommendation of the available tools that are made for Second Life. There are on the internet for sure other tools that could be useful for different types of users.

Not only the graphical user interface is a problem, but the tools from Linden Labs could use some improvements too. Most of the third parties tools are better than the standard tools from Linden Labs. Not only have they more functions, they are also more user-friendly.

All the tools / website from above are much more easier to use then Second Life, so it is not only recommended to use it but it is also very clear that Second Life did not did a good job and there is a lot to improve.

# 13. CONCLUSIONS AND RECOMMENDATIONS

After having researched the learning curve of Second Life it is clear why it is steep. Not only changing the graphical user interface is a way to decrease the learning curve but there other solutions too.

Working together with people to get to know about Second Life is very good reason, because users can backup on each other. If they are stuck they can find a solution together. The workshop on getting to know about Second Life for the first time for FEM students shows us that when a group of users work together they can achieve their goals fast and easy. But if users have to work on their own, they need more time to accomplish their goals.

Interactive tutorial is useful when people are operating alone. The guidance and help can assist the user when they are having difficulties.

Linden Labs should make more standard contents due to the sharp learning curve so that the users can concentrate on using Second Life instead of learning the tools.

Navigation in a virtual world can be difficult particularly for new users, but the graphical user interface of Second Life does not support users, but makes it even more challenging. The navigation of Second Life requires two hands most of the times and it would be better to have a control for a 3D environment where navigation is intuitive and fun. With the WiiMote (and Nunchuck) it is possible to make that happen. Although the WiiMote in combination with the Nunchuck still requires two hands, it will not make it difficult to handle the control. Every FEM student who has used a remote before should feel comfortable with the WiiMote.

There are two ways to change the graphical user interface. That is by editing the XML or the source code of the viewer. Changing the source code is not recommended because users need expertise on object-orientated programming with C++ program language. Editing the XML files is an easier way and it is possible to improve the chaos of the graphical user interface. By removing some of the options through XML the graphical user interface would be less chaotic and so finding options in the menu is easier. If users do not have the expertise in changing the graphical user interface they can still use an alternative viewer from the Electric Sheep Company. The OnRez viewer has a user friendly graphical user interface with added features. Not only should people not use the default viewer, but also use different tools.

Users can use the tool, PloppSL to make objects instead of the building tool by Linden Labs. PloppSL is easier to use and it is user friendlier, just like the tool Moment of Inspiration, which is also very intuitive and offers more options. Creating scripts is easiest with the LSL editor instead of the default editor of Linden Labs. For users with no experience on scripting they can always try to use Auto Script that generates scripts with a few pre-defined options.

So there are different ways to decrease the learning curve of Second Life, while probably the best method is by using the WiiMote in combination with edited XML files, because herewith the difficulty to move in Second Life is gone and using the graphical user interface is faster, because it is more structured. But since every user has a specific preference, there are solutions that are suitable for everybody.

## 14. EVALUATION

This internship at the Virtual Business Lab is really different from my previous internship, since I worked alone for the most of the time. It means that I am responsible for myself, because there is nobody who controls my research.

Although I had the opportunity to give workshops for FEM students a couple of times, I missed the corporation with other people; because the workshops were the only times that I could interact with other people. Sometimes it was boring working on my own, but an advantage of this was that I could concentrate better on my thesis and research. Hence, finding help was not easy, since nobody in VBL has knowledge about Second Life. So with every problem that I faced, I had to find a solution by myself, which also made me proud of.

When I started writing the plan of approach, I was not sure where it could lead to and I was even afraid that it was difficult to find interesting topics to research about. There were a lot of subjects that I wanted to know more about it, but due to the time limit I was only able to research a specific area. Therefore, I could not write more about the end product in the thesis since there was a lack of time. At the end, it was not easy for me to put an end on my research, since I kept finding interesting information that I wanted to know more about and include into my thesis.

None of the problems were as huge as writing this thesis in English. It was a big challenge for me to write this thesis without making spelling and grammar mistakes. But it has certainly improved my English and I became more fluent in writing and even thinking in English. Although, to be honest, if I had the chance to choose again, I would probably write the thesis in Dutch, because it was really frustrating to struggle with the grammar instead of just popping words out of my head. It is a little bit ironic, since users want to apply Second Life without fighting the graphical user interface, while I want to write my thesis in English without struggling with the English grammar.

Even if I am disappointed that it was not possible for me to change the graphical user interface, the way I wanted to, since the only way to do that is by editing the source code of the viewer and scripting is not my strongest point. But I was very glad that I could found out that it is possible to change the graphical user interface by editing the XML files. Not everybody knows that yet since there are documentations published by Linden Labs and that is something that makes me really happy. I was able to find a solution to change the graphical user interface without using the source code of the viewer.

In the end, I think I could fulfill my goal in how to reduce the learning curve of Second Life. I am especially proud of using the WiiMote to work with Second Life. To me, it opens a whole new way in controlling my avatar in Second Life. It is not only fun, but it gives you more freedom. I am sure that this would be interesting for others to try using Second Life in combination with the WiiMote.

I hope that my thesis could help other people in finding solutions to decrease the learning curve in Second Life.

# 15. BIBLIOGRAPHY

Ben Schneiderman, C. P. (2005). *Designing the user interface.* United States of America: Pearson Education Inc.

*Eep.* (n.d.). Retrieved from Eep: www.tnlc.com/eep/sl

Krieger, D. (2001, April 1). *Gamespy*. Retrieved from Gamespy.

*Libsecondlife*. (n.d.). Retrieved from www.libsecondlife.org/wiki/Getting_Started

Lori Bell, K. P. (2007, April). *Digital Libraries on the MUVE: A Virtual Adventure*. Retrieved from Asis & t.

Michael Rymaszewski, Wagner James Au, Mark Wallace, Catherine Winters, Cory Ondrejka, Benjamin Batstone-Cunningham, and Second Life residents from around the world. (2007). *second life the official guide.* Indianapolis, Indiana: Wiley Publishing.

Raskin, J. (2000). *Een nieuwe visie op interfaceontwerp.* New York: ACM Press.

Reuters, E. (2007). Linden to outsource Second Life orientation.

Sanchez, J. (2007, September 21). *Breaking the Second Life Learning Curve*. Retrieved from Educators Coop.

SCO. (n.d.). *What makes a good user interface?* Retrieved from What makes a good user interface?: ou800doc.caldera.com/en/SDK_vtcl/vtclgN.style_goodui.html

*Second Life Forum.* (n.d.). Retrieved from Second Life Forum: forums.secondlife.com

Simons, J. (2002). *Interface en cyberspace.* Amsterdam: Amsterdam University Press.

Wiki. (n.d.). *Wiili.* Retrieved from Wiili: www.wiili.org/index.php/Main_Page

*Wikipedia*. (n.d.). Retrieved from Wikipedia: www.wikipedia.com

Wikipedia; Second Life; Linden Labs. (n.d.). *Second Life Wiki*. Retrieved from Second Life Wiki: wiki.secondlife.com/wiki/Main_Page

# APPENDIX

## Figures

## Workshop Second Life

Donderdag 6 december 2007-11-22

**Uitgangspunt: SL is op je PC geïnstalleerd, en je hebt een account dat bij de begeleiders bekend is.**

Zina en Kai ho zijn bereikbaar via SL:　　　　**Kai: Hamlet Meili**
　　　　　　　　　　　　　　　　　　　　　　**Zina: Elvina Ewing**
　　　　　　　　　　　　　　　　　　　　　　**Gerlach: Lobo Gardiner**

**Start opdracht: Aanmelden**

Log in en meld je via Instant Messaging bij Zina of Kai zodat je kunt worden toegevoegd aan de HU-groep en je toegang krijgt tot HU eiland. Meld ook even wat je echte naam is.

**Opdracht 1 Verzamelen**

Log in, ga naar HU-eiland, sluit je aan bij de groep die zich daar verzamelt en volg de instructies/training die Zina en Kai-Ho jullie ter plekke zullen geven.

Via IM kun je steeds in contact blijven met Zina en Kai-Ho zodat ze je aanwijzingen kunnen geven hoe opdrachten uit te voeren.

Een goed manier is ook altijd om omstanders aan te spreken en hulp te vragen.

**Opdracht 2 Hulp**

Ga naar **Help Island Public** en maak dit als je Home locatie aan. Mocht je later ergens in de problemen komen kun je altijd weer naar je Home terug om hulp te halen.

**Opdracht 3: Avatar**

Haal iets uit je eigen inventory zodat je avatar een ander uiterlijk kan krijgen. Voorbeeld hoed, pet, jas.

Verander je eigen uiterlijk van je avatar. Het moet een uiterlijk kenmerk zijn wat duidelijk zichtbaar is. Voorbeeld, huidskleur, omvang van je romp.

Vervolgens moet je een avatar een pet laten dragen als je een man bent en als je een vrouw bent moet de vrouw een hoed dragen.

**Draai jezelf nu met je gezicht naar de kijker en druk op Print screen en plak het beeld vervolgens b.v. in Paint en sla het plaatje op. Deze lever je later in bij de begeleiders. Bewaar de foto goed, deze lever je in als je klaar bent met de opdrachten.**

**Opdracht 3: Goodie**

In second life zijn er heel veel plaatsen waar ze je gratis spullen weggeven, zoals horloges, schoenen en andere zoeken. Kijk eens rond in second life en probeer eens een gratis goodie te vinden die geschikt is voor je avatar. (ga bijv. naar **New Citiziens Incorporated**)

**Opdracht 4: Camera**

Draai de camera weer en maak een snapshot van jezelf (dit doe je met de ingebouwde fotocamara van SL), nu met Goodie. Zie je nu het verschil van je avatar met het begin? Bewaar de foto weer.

**Opdracht 5: Communications**

Probeer elkaar toe te voegen in de **Friends List**. Hiermee kun je nog steeds met elkaar communiceren binnen second life. Zorg ervoor dat je elkaar online kunt zien. Nu heb je ook een friends list opgebouwd die je later makkelijk kunt uitbreiden.

**Opdracht 6: Landmarker**

Het maakt niet uit waar, maar misschien heb je een favoriete plek in Second Life gevonden waar je de volgende keer weer naar toe wilt gaan. Probeer nu uit te zoeken hoe je een landmarker kunt maken en maak die dan ook ergens.

**Opdracht 7: Video afspelen**

Ga naar de IBM Business Centre en ga vervolgens naar de meeting area. Daar zie je een paar schermen. Probeer uit te zoeken hoe je die films kunt afspelen.

**Opdracht 8: Bouwen**

Ga naar **New Citiziens Incorporated**. Zoek de sandbox en bouw daar vervolgens een shape. Het maakt niet uit wat, maar het gaat erom dat je iets probeert te creëren. Wees creatief ;) Als je klaar bent maak vervolgens een snapshot van je shape.

**Opdracht 9: Handig**

Ga naar ABN Amro Island en probeer uit te vinden hoe je er achter kunt komen hoe groot het eiland is.

**Opdracht 10: Landmarker**

Ga nu terug naar de plek waar jij eerder een landmarker hebt gemaakt.

**Opdracht 11: Interactie**

Zoek vervolgens het eiland van Peugeot op. Op dat eiland bieden ze de mogelijkheid om in een sportauto van hun te gaan rijden. Probeer uit te vinden waar de auto is, zoek dan uit hoe je in de auto kunt zitten en maak vervolgens met de auto een rondje om het eiland. Maak tot slot een foto van je zelf in de auto.

**Opdracht 12: Problemen**

Mocht je in problemen zitten, ga dan naar de Help Island Public en probeer daar vragen te stellen aan andere second life gebruikers en dan bekijken of ze je willen gaan helpen. Je zult zien dat de meeste mensen heel erg vriendelijk zijn.

Als je alle opdrachten hebt gemaakt, hopen we dat je hebt geleerd hoe je in second life rond kan komen.

**Tot slot: meld je af bij Kai-Ho en Zina en stuur hun de foto's die je hebt gemaakt (4 stuks)**

[1] prblog.typepad.com/strategic_public_relation/2006/12/second_lifes_ri.html

[2] David Kirkpatrick, Fortune Magazine, 11/10/06

[3] en.wikipedia.org/wiki/Snow_Crash

[4] www.nealstephenson.com

[5] en.wikipedia.org/wiki/Metaverse

[6] webopedia.com/TERM/P/personal_computer_game.html

[7] en.wikipedia.org/wiki/Game

[8] slgames.wordpress.com

[9] en.wikipedia.org/wiki/MUVE

[10] en.wikipedia.org/wiki/MMOG

[11] en.wikipedia.org/wiki/Mmorpg

[12] www.worldofwarcraft.com

[13] Linden Lab CEO Philip Rosedale, Second Life website

[14] www.webopedia.com/TERM/V/virtual_reality.html

[15] www.activeworlds.com

[16] www.hipihi.com

[17] www.homebetatrial.com

[18] www.moove.com

[19] www.vside.com

[20] www.voyplaza.com/vpv.html

[21] www.there.com

[22] www.vmtv.com

[23] www.howstuffworks.com/vios.htm

[24] www.whyville.net

[25] www.utherverse.net

[26] www.entropiauniverse.com

[27] forums.secondlife.com/showthread.php?t=197606

[28] en.wikipedia.org/wiki/Lag

[29] www.secretlair.com/index.php?/clickableculture/entry/electric_sheep_improve_second_life_interface/

[30] http://ou800doc.caldera.com/en/SDK_vtcl/vtclgN.style_goodui.html

[31] Andrew Linden, 9/18/05

[32] wiki.secondlife.com/wiki/Sculpted_Prims:_Technical_Explanation