Algerien Republic and Democtratic

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Faculty of Science

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1. WHAT IS SECOND LIFE?

Few online social networking sites get as much attention as Second Life (SL), the three-dimensional virtual world where users, called residents, can pretend to be whomever -- or whatever -- they want to be. Although it's an online environment, its influence reaches into the real world -- including a virtual economy that's dependent upon actual money. In reality, or perhaps virtual reality, Second Life is a complex environment filled with potential risks and rewards.

A virtual world on the Internet from Linden Research, Inc., San Francisco, CA (www.lindenlab.com), in which "residents" create an identity, meet people, buy land and build their own environment or purchase an existing one. It is a "massively multiplayer online role playing game" (MMORPG), but one that offers users total freedom to create and interact as if they were living another life.

For one thing, they can contribute to the world around them, creating buildings, objects or even animations. Resident additions to the virtual world are called user-generated content, and this content is one of the factors that makes Second Life such a unique online environment. Some residents design short programs, called scripts (LSL) , which give avatars or objects new abilities, including special animations or the ability to generate copies of other objects.

Figure 1-seconde life

1.1- Avatars and Residents :

-**Avatar** : an avatar (also known as a profile picture or userpic) is a graphical representation of a user or the user's character or persona.

-**resident**: a resident is the user who is in charge in create the avatars and use the second life environment.

Avatars may take any form users choose (human, animal, vegetable, mineral, or a combination thereof) or residents may choose to resemble themselves as they are in real life.

Figure 2-avatars in sl environnement

2. MEMBERSHIP HAS ITS PRIVILEGES:

If you just want to explore Second Life, you can do it for free. A basic membership costs nothing and allows you to create an avatar and look around the world. If you want to buy land, you'll need to upgrade to a premium membership, which costs $9.95 a month. Concierge members are those who spend more than $125 a month on land-use fees. These users have access to an extensive support network.

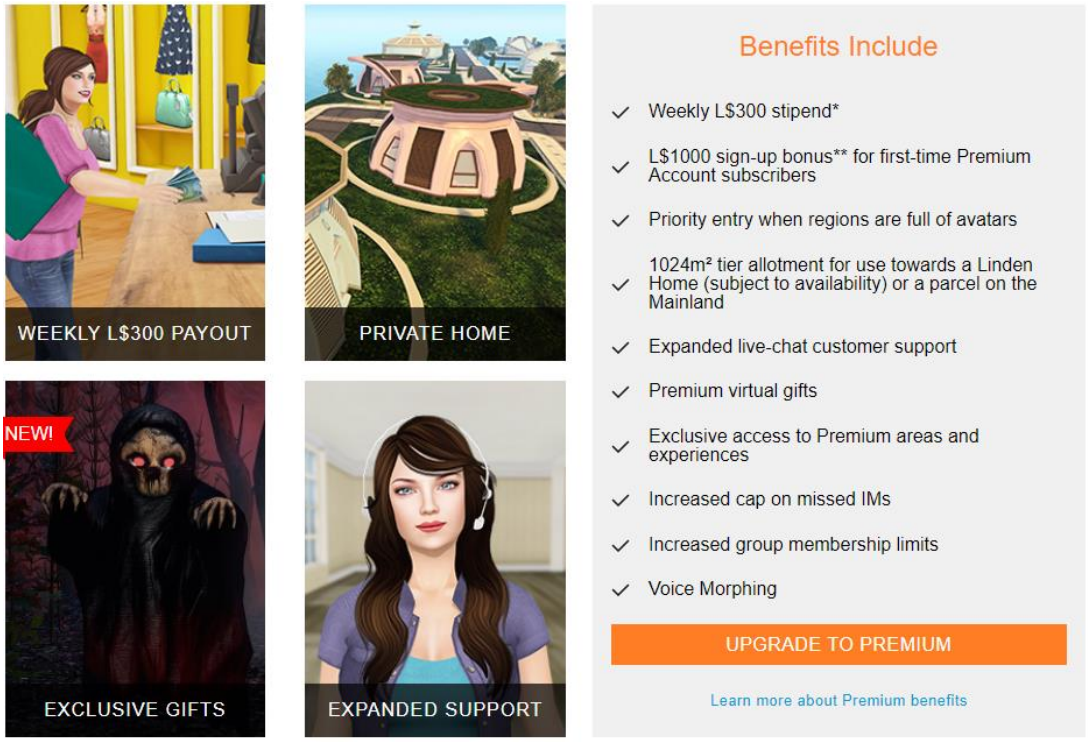

Figure 3-SL Memberships

3. LSL - LINDEN SCRIPTING LANGUAGE

LSL stands for "Linden Scripting Language" and is used to script the objects you will encounter and make in Second Life.

LSL is the Linden Scripting Language. This is the language all scripts in Second Life are written in. The structure of LSL is largely based on Java and C, both of which are widely used programming languages in the real world

NOTE: LSL is interpreted and executed on the Second Life servers (sims), not the client (Viewer). Although the script editor is part of the SL Viewer, the script itself runs on the server, which sends the results over the network to the Viewer, where you can see them.

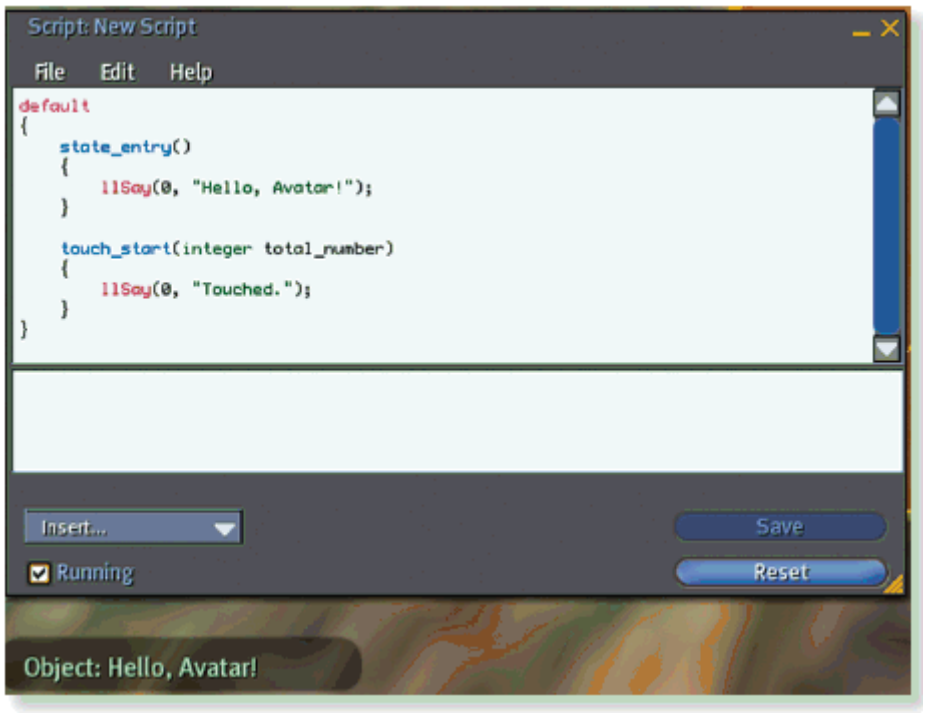

Figure 4-LSL

4. SECOND LIFE API AND FRAMEWORKS:

An API (Application Programming Interface) is a set of functions that allows applications to access data and interact with external software components, operating systems, or microservices. To simplify, an API delivers a user response to a system and sends the system's response back to a user.

The Second Life API allows Users to:

- Register : Enables you to register Second Life residents from your web page.
- Embed Maps: Enables you to embed Second Life Maps onto your web pages.
- Create custom plugins : API used by Second Life Viewer media rendering plugins.

4.1- Opensimulator:

Figure 5-OpenSimulator

OpenSimulator is an open-source multi-platform, multi-user 3D application server. It can be used to create a virtual environment (or world) which can be accessed through a variety of clients, on multiple protocols, see Connecting. Optional Hypergrid allow users to visit other OpenSimulator installations across the web from their 'home' installation or grid. In this way, it is the basis of a nascent distributed Metaverse.

OpenSimulator allows virtual world developers to customize their worlds using the technologies they feel work best - we've designed the framework to be easily extensible. OpenSimulator is written in C#, running both on Windows over the .NET Framework and on Unix-like machines over the Mono framework. The source code is released under a BSD License, a commercially friendly license to embed OpenSimulator in products. If you want to know about our development history, see History.

OpenSimulator can be used to simulate virtual environments similar to Second Life™. However, OpenSimulator does not aim to become a clone of the Second Life server platform. Rather, the project aims to enable innovative feature development for virtual environments and the Metaverse at large.

OpenSimulator is getting more stable over time but is still a high complex software system that can suffer various bugs and quirks; handle with care!

5. SECOND LIFE IN REAL LIFE:

Figure 6-avatar and resident in real life

Major tech corporations have used Second Life to market products or services to a niche tech-savvy audience. IBM for instance, has purchased 12 islands within Second Life for virtual training and simulations of key businesses processes. Musicians, podcasters and news organizations, including NPR's "The Infinite Mind," the BBC, CNet and the Reuters news agency, have all established a presence within Second Life

Science is no exception and many exhibits in Second Life can be found depicting scientific content.

Chemistry presents some special challenges and opportunities for a platform like Second Life. Full use of 3D space is a real asset, since an understanding of the shape of molecules and orbitals is essential for chemists. We will show how such representations can be made in Second Life and how these have been applied to educational activities

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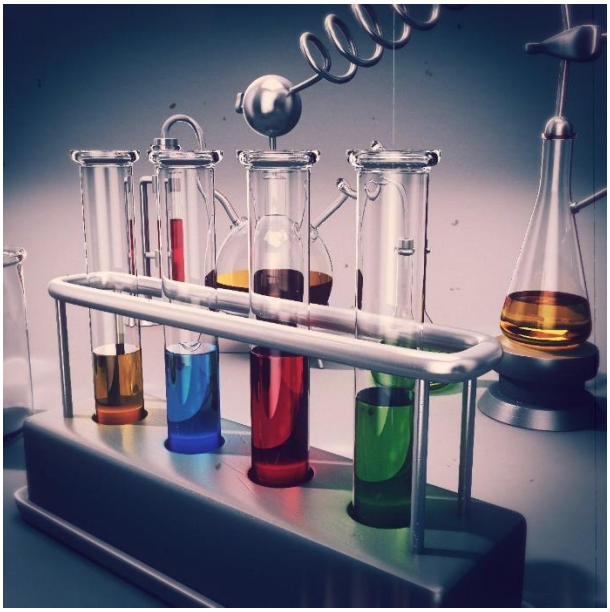

Figure 7-test tubes.

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Several universities worldwide are grappling with the challenges of medical education in the context of reduced access to preoperative patients . This is especially important given that most would accept that "the single most important function of 'modern' academic surgical units relates to the provision of a well-structured and imaginative educational programme for undergraduates" .

Educational tools that offer engaging modes of interaction were identified as absolute necessary to attract not only candidates to surgical training programs, but students to medical programs in general. One solution that could theoretically address both of these needs simultaneously involves the use of computer-simulated or "virtual" patients.
Sweden and Estonia both have virtual embassies in Second Life. The embassies provide information to residents about the countries, including how to apply for visas
Even John Edwards, hopeful Democratic Presidential candidate, has a campaign site in Second Life. His virtual campaign building made headlines after a group of griefers defaced it with obscenities and surreal drawings.

For the latest news in virtual politics, CNN has plans to open a Second Life news network called the I-Report hub. Residents can submit reports about the virtual world, and

CNN will use streaming video and audio to broadcast select stories within Second Life [source: CNN].

Some people believe that the future of the Internet is in three-dimensional virtual worlds like Second Life, where users will navigate through creative landscapes in search of information and entertainment. As a result, some organizations have jumped into Second Life with hopes that they can get in on the ground floor before the community's popularity explodes.

6. Deference between second life (virtual world) and virtual reality:

Figure 8-SL vs VR

Actually there's a lot of confusing between these two terms but there's nothing particularly wrong with that immersive virtual worlds are a natural fit for virtual reality.

But virtual reality is more than just virtual worlds with extra immersion. "Immersion squared" or — with audio — "immersion cubed."

There are some key differences that experience designers need to be aware of.

6.1- The 3d effect is natural:

The user doesn't just come to identify with their avatar on a screen — the user actually is inside that avatar, inside the virtual world. No extra cognitive leap is required to think of the virtual world as a real place.

6.2- Forced first person view:

The camera can't loiter around the avatar's shoulders, or fly around, or zoom in on in-world objects or displays, or hold still for pre-made animated scenes. Any unnatural camera movement not only destroys immersion, but increases vertigo and could make users nauseous.

The forced first person view also makes the entire virtual experience far more subjective, since the user is right in the middle of it. Things are flying at you, not at the avatar.

6.3- No distractions:

With a traditional viewer, a virtual world is only a click away — or a flick of the eyes away — from a Web browser, or an email inbox, or whatever is on the user's desk or elsewhere in their surrounding physical environment.

While wearing a virtual reality headset, you cant look away, or have the physical world distract you. There is no break to the "flow" of being in the immersive environment.

6.4- Isolation:

What this lack of distraction can also lead to is isolation. You feel as though it's just you and the virtual world — and the things in it — and it's harder to ask for help, except to someone else who is also in the world.

6.5- Vulnerability:

When playing a scary video game or watching a movie, you can always glance away from the screen to the living room around you to reassure yourself that you're not in any actual danger from the on-screen monsters. The same applies to traditional virtual worlds.

The intelligent, modern part of your brain knows that the virtual environment is just that — virtual — but the primitive part your brain where your fear responses live isn't smart enough to tell the difference.

With virtual reality the safety net of the external visual cues gets removed. It's just you and the virtual space.

For training sims where a sense of risk or unease are important, whether something literal like street policing or more nuanced such as a night-time ward round, this removal of safety can step the whole experience up into a higher gear — and is probably also why horror-VR experiences will be one of the big sellers.

7. ARCHITECTURE OF SECOND LIF:

Second Life uses a decentralized server architecture to meet the demands of thousands of users who may be online simultaneously. Rosedale designed the architecture of Second Life to mirror that of the Internet, spreading the virtual environment over thousands of servers in what he describes as a "tiled network." Those who wish to enter Second Life must first download a freely available client program from Linden Labs. As we mentioned earlier Each user, described as a "resident" creates an avatar to represent themselves. Residents can travel through the virtual world by walking, flying or teleporting. Residents can link to specific locations within Second Life from Web pages outside of the environment by using specially formatted hyperlinks called SLURLs.

8. CHALLENGES AND PITFALLS:

Second Life faced a significant challenge to potential viability of its virtual economy when a resident released CopyBot, software that allowed the unpaid copying of objects within the MMU. While Second Life took steps to neutralize the issue, the threat of unlimited copies of the intellectual property residents create has been likened to the unlicensed distribution of online content that musicians and filmmakers face.

9. Second Life In Education systems:

Second Life is used as a platform for education by many institutions, such as colleges, universities, libraries and government entities.

9.1- SLOODLE:

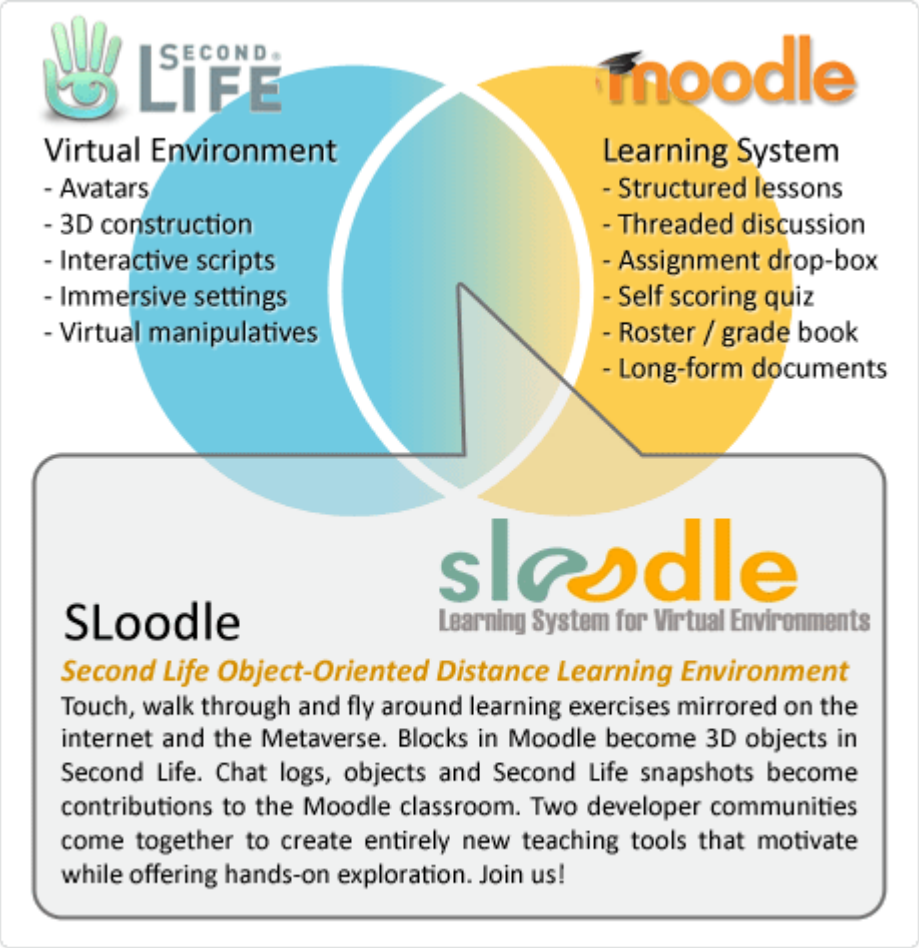

Figure 9-SLOODLE

Sloodle is a combination of Moodle (Learning Management System) and Second Life (virtual world) to create a virtual classroom. Surprisingly, this brilliant tool didn't make it.

Sloodle's users can attend a virtual classroom where they can meet “face-to-face” with their virtual classmates in their avatar form. The trainer can create a learning environment to fit the training on hand. With unlimited possibilities, the students can participate in chats (audio and text) using the accessible Moodle chat room. Discussions can be archived securely in the Moodle database. Slides and documents can be viewed in-world as part of a live presentation on virtual boards and can be quickly uploaded to Moodle in a variety of formats to be viewed asynchronously.

Other features include:

- Assignment Drop-Box.
- Review grades quickly and easily in the standard Moodle gradebook.
- Link identities of Moodle users and avatars.
- Take quizzes in-world with the in-world Quiz Chair, integrated with the Moodle gradebook.
- Track points in in-world quizzes and games with the Scoreboard.
- Manage scenes of different objects with the Rezzer.

9.2- Benefits of second life in education systems:

It might look strange but the fact is undeniable that you may visit to other countries without leaving your classroom while using SL. Of course, you feel at home while use SL especially once learn about other's cultures besides acquiring newer skills, engaging yourself in the entirely new forms of communication to interact with others and so do you increase 'people's skills' further. You have an entirely new way to solve the problems that might not been possible to perform in the 'real world' scenario. Other advantages include connecting to other online communities, forging new links and friendships and last but not the least finding new opportunities to collaborate and go for social interactions while you are at self-paced learning route to suit all possible learning styles. You have best opportunities to create, comment and share contents with other users through SL and in the meanwhile there is an opportunity to integrate within the blended learning system to avail maximum benefits. SL therefore offers range of opportunities for researchers because of collaboration and connection between the users. You are exposed to whole range of possibilities which you might not have utilized on the previous occasions.

10. Characteristics of Second Life

10.1- Immersive

Immersion, particularly spatial immersion, occurs when a player feels the simulated world is perceptually convincing; where a player feels a sense of presence in a simulated environment which feels real [4]. MUVEs are characterized by the provision of just such an immersive environment, and while Second Life is not unique in this, the level of customization of the SL environment, including the use of individualized and unique objects,

textures, ambient sounds, media and video streams helps to create a greater depth of immersion than other more constrained and pre-fabricated worlds.

It is not only the surroundings that can be personalized. Good quality avatar skins, shapes and hair styles are highly desirable and while relatively expensive by SL standards, most people either create or buy such things eventually. An extensive and often free collection of clothes and accessories from sunglasses to wheelchairs are available together with a large selection of animations and gestures. In addition, the software provides a sophisticated interface for adjusting an avatar's appearance, from the size of their feet to the height of their cheekbones and consequently, any avatar more than a few days old will have their own unique appearance. For many residents, the ability to individualize their avatar seems to encourage a very close identification between the real and the virtual person. Chris Collins, from the University of Cincanatti specifically states on her blog "I am Fleep and Fleep is me" and it is clear from the accompanying photographs that she has made a definite attempt to create an avatar that captures her real appearance [5]. This author, has a similar relationship with her avatar, Arwenna Stardust, and uses that identity to blog about Second Life [6].

An interesting phenomenon, testament to the power of the immersive nature of Second Life is reported, often with self-deprecating humor, by many SL residents. In a reverse of the psychological immersion that occurs when a user confuses a virtual environment with real life, residents often relate their attempts to transfer useful Second Life capabilities to real life. For example, in SL the 360º and zooming camera view is often used to inspect objects; one common experience appears to be the attempt to do the same in real life, particularly when viewing videos or photographs on a computer screen. Similarly, the ability to click on an avatar to bring up their profile and therefore learn more about them without asking questions, is an action that some have reported attempting thoughtlessly in real life! It would certainly seem that at some level and for some residents the conscious mind is happy to accept a very blurred distinction between the two worlds.

10.2- Interactive

Second Life provides a real-time interactive environment which includes voice and text communication and also the facility to watch or listen to streaming media or construct objects collaboratively. This ability to share an experience adds significantly both to the level of engagement with the environment and to the opportunities for discussing and sharing that experience. Any audio or video feed streamed via the inter-net can be captured in SL and this facility has been utilized to bring together global communities to inworld conferences, live music

performances and to provide an adjunct to real life meetings. For example, the 2007 Digital Strategy Summit in Auckland was streamed live into Second Life where it attracted people from elsewhere in New Zealand and from overseas – all watching the live video stream, some sending questions to the summit presenters and often discussing amongst themselves, the issues being raised.

All changes made to the environment are also relayed in real time. A tree is removed, a door is closed, a slide is changed on a viewer – all will be immediately apparent to all avatars in the surrounding space, as will the movement of other avatars into and out of that space. A simple mouse click can transport an avatar to a new location where again all current objects will be visible. On a good day these changes appear with no delay and are a natural part of the SL landscape: they also explain the necessity for a reasonably high specification computer and a fast broadband connection.

10.3- Customizable

One of the first impressions of Second Life is the diversity of the surroundings. Natural landscapes range from fantasy self-generating eco-systems, to snow-covered mountains, wild elven forests and undersea ‘gardens’ of coral and marine life. Likewise, architecture may range from classical to science fiction, urban punk to medieval; avatars from business tycoons to monarch butterflies and mermaids to robots; vehicles from dragons to Porches and surfboards to horses – the diversity is stunning if sometimes confusing and occasionally, deliberating disorienting. This diversity is the result of a collective, creative human imagination from which individual efforts combine to create a world that changes, evolves and sometimes disappears in real time.

Most importantly, almost everything in the world is generated by the residents, for the SL software in general provides the capability for building and terra-forming, not the actual constructs themselves.

Not only do residents have the means to build their own artifacts but they also retain the intellectual property on any such items. Once built, such items can be protected from unauthorized copying or modification, given away freely (often under the terms of a Creative Commons or GNU license) or sold for Linden dollars (L$) which can be bought and sold for US$ on the LindeX currency exchange. The exchange rate fluctuates with demand and allows residents to trade inworld and to convert any profit from their trading into the ‘real world' as US currency.

This active and thriving economy is unexpectedly an important enabler of education. While it clearly provides stimulating cases for trialing and evaluating a number of

business skills, it also provides a set of free or easily affordable education tools for those who have neither the skills, the time or the inclination to build their own. The learning curve for the creation of Second Life objects is quite steep but a vast amount of free instruction and information is provided often by 'early adopters' who delight in sharing both their discoveries and their creations with others. Consequently, everything from 'hands-up' chairs to fully equipped 'holo-deck rezzers' for specific activi-

ties are available, together with a large community of developers who very generous with their time and knowledge.

10.4- Accessibility

Another important aspect of Second Life is that it is freely available to anyone over the age of 18 years. Many other virtual environments require either a subscription or a payment to download or, like most educational and training virtual environments, they are privately owned and operated and not open to casual visits. In the author's opinion it is this open and accessible nature of Second Life that makes it exciting as an educational tool. Although it is possible for the 'landowner' to totally restrict access to any area of Second Life that they control, the public are usually encouraged to visit the majority of educational sites and educators, across disciplines and across the world, will sometimes collaborate in creating unique learning experiences for students which they then freely share. In the same way, institutions such as art galleries, museums, libraries and science centers allow open and generally free access to their informative 'builds'.

This accessibility to free learning activities is currently promoting much discussion as to the place and value of real world learning institutions. Harvard University already allows free access to much of its online learning materials and here in New Zealand, Otago Polytechnic has signed up to the sharing of much of its material on WikiEducator under a Creative Commons license. In a world where access to information and knowledge is essentially free, learning institutions may well need to rethink the business model by which they operate.

10.5- Programmable

Michael Callaghan from the University of Ulster's Intelligent Systems Research Centre commented, "At the recent game developers conference in San Francisco the main deficiency (from a gamer's perspective) of environments like Second Life was the lack of "structured interaction". They don't seem overly comfortable with not giving

the user something to do (or kill)" [3]. What some from the gamer community have failed to see, is that Second Life is not a game – rather it is a game engine. It has no rules systems, no points to score, no dragons to kill or ranks to achieve, unless they have been 'imagined and created' and usually programmed by an SL resident.
Such role playing areas do exist and often represent some of the most incredibly detailed and beautiful creations to be found in Second Life [7] and many are intentionally both entertaining and educational. Riding a plane through a hurricane, experiencing, in a highly immersive environment, the visual and aural distortions reported by sufferers of schizophrenia, exploring a human testis from the inside, walking through the seven levels of Dante's Inferno reading the thoughts and nominations from earlier visitors or listening to an improvised real-time debate between Anne Boleyn and Catherine of Aragon, brings a new understanding of the value of 'serious games'. ICCMSN - 2008, Dunedin, New Zealand The Linden Scripting Language (LSL), a state-event driven language based on C, has a library of over 300 functions and user defined functions can also be created. An LSL script is tightly bound to a virtual object, which may be invisible, and a number of scripts can be contained in any one object. All residents may create objects and write scripts for them and both classes and textual support is available in the use of LSL.
This relatively rich scripting language allows for the creation of a wide range of interactive objects from drop-boxes to screen displays (HUDs).
In its commitment to open source development, Linden Research, Inc. has also released the Second Life client software and a number of new client browsers are now available, including a text only web based connection to Second Life. In addition, Samsung announced in April 2008 that it was adding a Second Life client, compatible with Windows Mobile devices, to its mobile handsets.

11. Conclusion:

As a conclusion of this research we come to confirm that technologies in general and in special way the new technologies such as virtual worlds and virtual reality and because of projects like the Second Life project, our life has been affected with these technologies which start playing a huge role in every

single human in the world and in different domains such as economic systems and health care systems and mostly all life domains and in a special way the educations systems which had our focus.

Virtual world will be the most effective arm for universities in the near future to support all sorts of distance learning systems. It is a latest technology 3D (MUVE) which supports education system in an attractive manner. Right now, SL fulfils most of the facilities and function which educational institutions require to make best use of their e-Learning applications on the basis of several comparative studies. Various types of 3D (MUEVs) are present in the market these days but SL dominates in almost all leading universities worldwide due to its unique features and functions.

References:

[1] Second Life official website.
[2] IETC 2014, Interactive e-learning through second life with blackboard Technology, Dr.Ahmed Maajoon Alenezi.
[3] DOI: 10.1111/j.1471-1842.2007.00733.x,Second Life: an overview of the potential of 3-D virtual worlds in medical and health education, Maged N. Kamel Boulos*, Lee Hetherington† & Steve Wheeler‡.
[4] Azzara, M. (2007): Virtual Worlds, Second Life & Live Events. Kézirat. Letöltve:2010.augusztus19.9:56 http://strom.files.wordpress.com/2007/11/virtual-worlds-and- second-life.pdf
[5] Bailenson, J.N., & Blascovich, J. (2004): Avatars. In W.S. Bainbridge (Ed.), Encyclopedia of human-computer interaction. Great Barrington, MA: Berkshire.