

“The impact of student engagement in a 3D virtual world on course outcomes”

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The impact of student engagement in a 3D virtual world on course outcomes

Abstract

The traditional (seated) education offers the opportunity for a face-to-face (F2F) interaction among students and their instructors. However, this F2F interaction is typically absent in online education since the participants are separated by time and space. The three dimensional (3D) virtual world (VW) offers an opportunity to enhance interaction among students and their instructors by allowing their agents or avatars to meet F2F in a 3D VW so this should somewhat compensate for the lack of a physical F2F interaction. The purpose of this project was to utilize a 3D VW technology to engage students in online (OL) courses to enhance their learning and performance. We present several different types of 3D VW platforms and utilize Second Life (SL) by Linden Lab in this study. This paper presents the lead author's experience in utilizing SL to enhance students' learning at two different campuses. The lead author utilized SL and Blackboard Course Management System (CMS) to enhance two online marketing courses in summer 2010 at a public southeastern university in the USA. During the following years, this co-author/instructor utilized SL and Moodle CMS at a private southeastern university in the USA to enhance students' learning.

Keywords: 3D virtual world, Second Life, OpenSim, SLOODLE, student engagement, online education.

Introduction

Many educational institutions have been offering online (OL) courses, certificates and degree programs for some time. There appears to be an increasing emphasis on offering OL degree programs at many educational institutions, especially now that budget cuts and cost-cutting measures, sometimes along with enrollment decline, have affected many institutions across the United States. These OL programs utilize a Course Management System (CMS) like Blackboard or Moodle and do not require the traditional classrooms, so there is no face-to-face (F2F) interaction among students and their instructors. The CMS do not typically offer a F2F interaction among students and their instructors so there are likely to be some difficulties in student engagement in these OL programs. Student engagement in learning is very important for effective teaching. Higher student engagement should lead to better learning of course content: better student performance; fewer D, W, and F grades; better student retention; and higher graduation rates. All of these goals are very desirable.

Students' preferences for course delivery formats. Some students prefer a seated F2F course with CMS while others prefer an OL course with CMS, and still others prefer an OL course with CMS and a 3D virtual world (VW). A student's preference for the course delivery format may vary by the semester and by the course as well. A student may prefer a seated course in fall or spring but an OL course in summer. A student may prefer one course in a seated F2F format and another in an OL format. In addition, it is reasonable to assume that if the most

preferred course delivery format is not available then a particular student may enroll in a course with a less preferred delivery format but is likely to be somewhat dissatisfied due to this limited choice.

Students' self-selection of course delivery formats. In the absence of random assignment, students self-select the course delivery format that they most prefer. So, if possible, those who prefer the seated format would enroll in a seated section and those who prefer an OL format would join the OL section. In this study, the students were not randomly assigned to the various courses by the delivery format. In a true experiment, students would be randomly assigned to various course sections by the course delivery format. However, such a random assignment is not recommended since it would increase student dissatisfaction by putting many students in courses with their least preferred delivery formats. Also, if only one section of a course is offered then students do not have any choice of course delivery format and random assignment is not possible either. Clearly some students would be dissatisfied with the course delivery format if their most preferred delivery format was not available.

Purpose and scope. These are the main goals of this study:

1. Discuss the role of course setting (or delivery format) in determining course outcomes. Here we discuss three types of course delivery formats: (1) traditional face-to-face (F2F) with CMS, (2) OL with CMS, and (3) OL with CMS and Second Life (SL).
2. Discuss use of 3D VW tools for student engagement to enhance their course participation in an OL course. Here we discuss several different types of 3D virtual world tools.

3. Utilize 3D VW technology to engage students to enhance their learning and course performance.
4. Compare students' course evaluations across three types of course delivery formats to identify the importance of traditional F2F interaction and the role of 3D VW course setting for F2F interaction among avatars.

Contributions to literature. This study makes these main contributions to the literature:

1. Discusses the possibility and effectiveness of F2F interaction among the avatars of students and their instructors in 3D VW.
2. Discusses the various types of software tools for 3D virtual worlds.
3. Some empirical findings regarding the impact of course delivery format on course outcomes.

1. Various 3D virtual world platforms

Several 3D VW platforms are available to individuals and organizations. One of the oldest and well developed such platform is SL. The online VW of SL has been utilized by numerous organizations including governments, for-profit businesses, and non-profit organizations – this includes all types of educational institutions as well. The 3D VW SL platform was developed by Linden Research Inc. (Linden Lab) in San Francisco, California on June 23, 2003. Since then, it has grown significantly to a registered user base of over 37 million, and at any given time there are over 50,000 users in SL (Second Life Grid Survey as of April 28, 2014). It is a free platform that allows its users to participate using avatars, text, speech, voice, and display. The SL VW exists within Linden Lab's servers and can be accessed through an SL viewer. Linden Lab offers two official viewers – SL Viewer and Snowglobe. There are dozens of third party viewers that can be utilized to visit, travel through, and conduct business or study/teach courses in SL. Linden Lab (2013) presented an Infographic to celebrate its 10 Years of Second Life and reported that it had 36 million registered users, and more than one million users visited from around the world monthly. Voyager (2014) reported that as of April 13, 2014, there were 37.6+ million registered users of SL.

OpenSimulator (or OpenSim) is an open-source 3D VW platform that was started in January 2007. Its website is at <http://opensimulator.org>. It can be used as standalone, grid, or hypergrid. OpenSim is designed to be compatible with SL, so people can use the SL viewer, interface, building tools and scripting language. Korolov (2013) noted that OpenSim had an estimated 1,200 bugs that had to be fixed before OpenSim could get to a stable, reliable version 1.0 release and get out of its "alpha" version

0.7.6.1. One problem was a lack of funding for paid development to fix critical issues with OpenSim. Korolov (2011) compared OpenSim and SL and noted that, in 2011, SL had around a million users logging in each month, while the most active OpenSim-based grid, Avination, had just 9,000. There were an average of 50,000 SL users on at any one time while there were a couple of hundred users in Avination. Korolov (2014a) noted that the biggest OpenSim world, the InWorldz grid, had less than 10,000 active users a month. By comparison, Second Life had around a million. In 2014, OpenSim had a total of 338,945 registered users and 18,957 active users (Korolov, 2014b).

Whether an educational organization starts with SL or OpenSim, it can utilize Simulation Linked Object Oriented Dynamic Learning Environment (SLOODLE), a free and open source project, which integrates the multi-user virtual environments of SL and/or OpenSim with the Moodle CMS. SLOODLE provides numerous tools and features to support learning and teaching in the immersive VW (www.sloodle.org):

- ◆ Web Intercom - Allows students to participate in chats in SL using the Moodle chat room. Discussions can be archived securely in a Moodle database.
- ◆ Presenter – Allows slides to be quickly uploaded to Moodle in a variety of formats, then viewed in-world as part of a live presentation or asynchronously in Moodle.
- ◆ Choice – Helps in gathering feedback.
- ◆ Assignment drop-box – Allows management of in-world assignments and review of grades quickly and easily in the Moodle gradebook.
- ◆ Vendor – Helps to distribute inventory to users.
- ◆ Reg-enrol booth – Links the identities of Moodle users and avatars.
- ◆ Quiz chair – Allows taking quizzes in-world with real-time feedback and it is integrated with the Moodle gradebook.
- ◆ Scoreboard – Allows tracking points in in-world quizzes and games.
- ◆ Rezzer – Makes it possible to arrange, save and recreate 3D objects and activities with ease.

A 3D VW platform is a tool that facilitates a 3D VW platform is a tool that facilitates enriching OL education while technological development and competition among vendors changes the 3D VW platforms overtime. So future researchers should evaluate various 3D VW platforms before selecting one for their needs. Korolov (2013) discusses several 3D immersive environments for the enterprise. These are browser-based platforms, traditional proprietary platforms, and open-source platforms.

1. *Browser-based platforms:* Several vendors provide virtual worlds in a browser. Though these platforms have some limitation, they are easier for the users who do not have to install and learn complex VW viewer software. Some of these environments run on a mobile device. Vendors include VenueGen, AvayaLive Engage, 3Dxplorer, Reaction Grid's Jibe, Second Places' Unifier, and TPLD. Their virtual environments are good for quick meetings, sales training, and simulation games. These vendors typically charge \$50 or more per month and the fees increase with the number of users.
2. *Traditional proprietary platforms:* These platforms require companies to download and install server software, hire 3D modelers and designers to create the environments, and install special viewer software so that users can access the worlds. They also offer maximum features and security since they are behind the enterprise firewall. Vendors include Protosphere, VastPark, SAIC's Olive, 3D ICC, and vAcademia. These environments are suitable for corporate training programs, simulations, and 3D modeling. The deployment costs would be in five to six figures. In the summer of 2010, Linden Lab discontinued its SL Enterprise, the behind-the-fire-wall version for corporations, to focus on its main platform for all users (Ravensoft, 2012).
3. *OpenSim enterprise platforms:* OpenSim uses SL-compatible viewers and SL building tools and has a vast array of low-cost, or free, pre-made content available for setting up new grids. Various vendors host private grids for OpenSim and provide behind the firewall OpenSim deployment: Dreamland Metaverse, SimHost, 3D Hosting, Virtyou, Talent Rasper, Kitley, and Zetamex.

2. Uses of Second Life 3D virtual world

Starting to use SL is quite easy. Much of the necessary information is available at www.secondlife.com. Au et al. (2010) walk the beginners through getting started in SL and customizing their avatars; provide information about where to go, what to see, and how to define their virtual existence and experiences. Moore and Thome (2008) provide information about SL scripting and provide more than 50 previously unpublished ready-to-use scripts. To search for various places in SL, go to www.secondlife.com, select Search, and then type the required words. For example, typing "University" after Search reveals addresses of numerous universities that have a presence in SL. For example, Texas A&M University SL campus is located at this address: <http://maps.secondlife.com/secondlife/Aggieland/169/127/27>.

The first Scandinavian project to experiment with the design and testing of teaching platforms for lifelong learning in SL started in 2007 with the creation of a virtual island in SL called 'Kamimo Education Island'. Molka-Danielsen and Deutschmann (2009) discuss the instructional design, learner modeling, and simulations in education on this island. Wood (2011) introduces the fundamental concepts of SL and presents many exercises that could be adopted in a marketing class that utilizes SL. Robbins and Bell (2011) provide help in setting up an account, creating and customizing an avatar, meeting other people, chatting with other residents, starting a business, making real money, and utilizing learning opportunities and resources.

Rufer-Bach (2009) discuss technical and social issues of participating in SL, such as marketing techniques and conducting real-world business in SL. Mahar and Mahar (2009) help entrepreneurs to assess potential opportunities and conduct business in SL and provide many lists of dos and don'ts. Hundreds of large and small businesses have a presence in SL as well. These companies include IBM, Walmart, CNN, Coca-Cola and Intel. IBM had over 50 islands in SL where it hosted many virtual conferences and held meetings between its sales force and their clients.

During the Great Recession, which officially lasted from December 2007 to June 2009 in the United States, companies cut back on travel and increased their use of virtual meetings. Boorstin (2009) notes that hundreds of companies like Cisco, Dell, Xerox, Intel, Unilever, and British Telecom had held meetings in the virtual world of SL and some companies, like Accenture, hosted virtual recruiting events in SL. "A virtual meeting is far more sophisticated than a conference call. Companies can hold speeches, seminars, breakout sessions and high tech demonstrations.... You can do many of the things in the virtual world that you can in real life – from showing slides for a presentation to the equivalent of water cooler talk after a meeting" (Boorstin, 2009).

Linden Lab (2009), notes that IBM held its three-day meeting of over 200 members in its Academy of Technology's Virtual Worlds conference in SL and saved about \$250,000 in terms of travel and venue costs and another \$150,000 in productivity gains since the employees did not travel and were already at their computers and could quickly return to work. However, since the summer of 2010 when Linden Lab discontinued its support for the SL Enterprise, IBM has moved many of its facilities elsewhere since it prefers to keep its servers behind firewalls denying public access.

Many institutions have established virtual campuses in SL and some institutions exist only within SL.

The 3D VW environment that offers F2F meetings among avatars can compensate, to some extent, for the missing F2F synchronized meetings in traditional classes. In addition, the SL environment offers some opportunities that a traditional classroom setting would not offer. For example, classes in SL can be held anywhere there is space available, unconfined within the walls of a classroom. Travel through SL is almost instantaneous and not affected by weather, road conditions, or physical distance among or between participants. Similarly, guest speakers could be located anywhere in the world but could meet with a class in the 3D VW without a physical travel to a traditional, or seated classroom.

There are many conferences on education in virtual worlds. For example, The Virtual Worlds' Best Practices in Online Education conference information is available here: <http://www.vwbpe.org/>. In addition to Information Technology and Management Information Systems journals, some journals have emerged that focus on SL or other 3D virtual worlds, for example, the *Journal of Virtual Studies* is archived at <http://ejournal.urockcliffe.com/index.php/JOVS/issue/archive>.

Reahard (2013) notes that Linden Lab's VW celebrated its 10th anniversary on June 23, 2003 with over 36 million registered users, more than 400,000 new accounts per month, and a million monthly active users that "typically rack up 1.2 million virtual goods transactions per day and have accounted for cumulative \$3.2 billion worth of transactions." Linden Lab (Korolov, 2010), however, announced in 2010 that they will discontinue support and development for the SL Enterprise platform and also for the SL Teen platform and instead would focus on the development of their Main Island for their general user base. Dubas and Hill (2013) present guidelines for meetings and presentations in SL. They note that 2D worlds of Course/Learning Management Systems (C/LMS) like Blackboard/WebCT, Sakai, Desire2Learn (D2L), and Moodle provide good resources for online education. The interaction among the participants, however, is limited since the participants do not jointly experience the presence of others that is possible in a 3D VW through avatars.

2.1. Some resources on Second Life. What is Second Life? <http://www.youtube.com/watch?v=Zt5YVG4n2bA&NR=1>.

Second Life Destination Guide <http://secondlife.com/whatis/destinationguide/>.

Education and Nonprofits <http://secondlife.com/destinations/learning>.

Second Life Tutorial: Beginner Guide-Create Account & Get Started in Second Life <http://www.youtube.com/watch?v=2zAb4XxnVMM>.

Education in Second Life: Explore the Possibilities <https://www.youtube.com/watch?v=TMGR9q43dag>.

Educational Uses of Second Life <http://www.youtube.com/watch?v=qOFU9oUF2HA&feature=related>.

Poole College of Management, NCSU, Raleigh, NC <http://maps.secondlife.com/secondlife/NC%20State%20Management/197/186/52>.

Duke University School of Nursing (<http://nursing.duke.edu/>) in Second Life <https://www.youtube.com/watch?v=sL3D-59Mbny>.

IBM dives into Second Life <http://www.ibm.com/developerworks/opensource/library/os-social-secondlife/index.html?ca=drs->.

IBM to Staff Virtual Business Center 24 Hours Five Days a Week With Addition of Live Sales Avatars From Australia, Singapore and Malaysia <http://www-03.ibm.com/press/us/en/pressrelease/22212.wss>.

2.2. Taxonomies of educational objectives, learning, teaching, and assessing. Bloom (1956) classifies six main categories of educational objectives as follows:

1. Knowledge – “the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting.”
2. Comprehension – “the individual knows what is being communicated and can make use of the material or idea being communicated...”
3. Application – “use of abstractions in particular and concrete situations.”
4. Analysis – “breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between ideas expressed are made explicit.”
5. Synthesis – “putting together of elements and parts so as to form a whole.”
6. Evaluation – “judgments about the value of material and methods for given purposes.”

While Bloom's taxonomy (1956) uses nouns to classify educational objectives of the cognitive domain, Anderson et al. (2001) present six categories of learning, teaching, and assessing that are involved in cognitive processes. Instead of “static” nouns, the new classification used “action” verbs to label the categories of cognitive processes. The revised taxonomy of learning is presented here from lower to higher order:

1. Remembering – recognizing, recalling.
2. Understanding – interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining.
3. Applying – executing, implementing.
4. Analyzing – differentiating, organizing, attributing.

5. Evaluating – checking, critiquing.
6. Creating – generating, planning, producing.

These six categories are very useful in understanding the various levels and types of learning processes. In this project we tried to use as many of these levels as possible through various assignments. Students were required to work individually and in groups to not only remember and understand course content but also to apply these concepts; they attended an online event hosted by IBM, they evaluated the FSU Cyber Campus in SL, and communicated with other students and their instructor as needed.

2.3. Student engagement in Second life: F2F communication in 3D VW. One co-author/instructor (Alpha Iceghost in SL) of this study utilized SL and Blackboard CMS in the summer of 2010 to teach two online principles of marketing courses (one undergraduate and one graduate) at a public southeastern university in the USA. Meetings were held with students in SL for group discussion on the various topics of the assigned chapters and other projects. On June 9, 2010, the students attended the second quarterly virtual conference arranged by IBM at an IBM virtual meeting place (not in SL). These students participated in virtual events online, studied event marketing by IBM, and had the opportunity to network with business executives during this virtual conference. In addition, this co-author/instructor created a virtual 3D campus in SL for this public southeastern university in the USA. This virtual campus occupied an island where there was an orientation area for new-comers, six three-storied buildings of classrooms and offices, a coliseum, and an amphitheater. Numerous trees of various types, marble floors, asphalt roads, and nine water fountains were also built on this island. The co-author/instructor of these courses utilized multimedia equipment on this virtual campus in SL to teach two online summer courses in 2010. Meetings were held in SL at various locations, and also on this virtual campus in SL. The instructor helped the university librarian to prepare and present the library resources to students in SL. A guest speaker was also invited to make a presentation to students in SL about proper attire and conduct in SL. Unfortunately, due to budget cuts, funds were not available to continue subscription to this SL island for our public southeastern university in later years. However, the co-author/instructor built an open air multimedia classroom in SL for his private southeastern university to engage students in discussions on their projects, to provide information about the electronic resources at the university library, for project presentations, and to communicate.

3. 2010 summer session: use of SL at a Public Southeastern University

3.1. Assignments in SL or online. For undergraduate and graduate introduction to marketing courses, the students were given online assignments and also some assignments in SL, in addition to course support material and exams in Blackboard CMS. There were four assignments (discussed below), four exams, and synchronized weekly meetings in SL. Each of these two courses lasted eight weeks. The instructor/co-author met with his students for about one month in various public areas in SL while he constructed the SL Campus for the Public Southeastern University at an island in SL. Some of these virtual places in SL included the Red Square at the Moscow Island, a large piano and a skating rink at an IBM Island, at the Dell Computer Island, and at the CNN iReport Island. Lectures and discussions were held at these meeting places through chat and text. At the end of each lecture/discussion meeting, the students were provided a transcript of the meeting.

The construction of multimedia buildings, and other facilities at the Public Southeastern University's VW campus was completed in about one month. The second half of the class meetings in SL were held at various places at this VW campus – at a coliseum, inside a multimedia classroom using Power Point slides, and at an open-air multimedia lecture hall at the top of one of the classroom buildings. Various assignments were utilized in SL to engage students and to enhance their learning through individual and group projects. These assignments included group projects, event marketing, guest speakers, participation in class meetings in SL, attending a presentation by a business reference librarian in SL, etc.

To get students up to speed in SL, they were given additional information about SL as follows:

- ◆ The students were told that their avatars should be able to navigate (walk, run, fly, and teleport) and use text to communicate by instant messaging (IM) or chat. They should determine their skill level based on how comfortable they felt. They were required to enter the following information in a forum in Blackboard CMS: their name, their avatar's name, their level of navigation skills (basic, intermediate, advanced), and their level of communication with text skills (basic, intermediate, advanced).
- ◆ For Mac users: The difference between Mac and PC is the standard difference that is not unique to SL since it exists for other applications as well.
- ◆ PC and Mac shortcut key differences http://wiki.secondlife.com/wiki/PC_and_Mac_s_hortcut_key_differences.

- ◆ Shopping for clothing in SL: There are plenty of freebies at <http://maps.secondlife.com/secondlife/Deva%20Loka/20/36/54> and <http://maps.secondlife.com/secondlife/Schirra/161/185/65>, business attire can be purchased at many places including at <http://maps.secondlife.com/secondlife/Penryn/71/97/36>.
- ◆ A wiki was created in the Assignments section of the course website at Blackboard CMS to provide students a forum for their questions, contributions, and comments.
- ◆ Marketing Excellence Group in SL. The co-author/instructor established a marketing group in SL so students and the instructor could easily chat or IM among themselves and know who was online in SL, so they did not have to rely on e-mail or telephone systems. To join this group a student would right click on the instructor's avatar, Alpha Iceghost, to find the group to join.

Assignment 1: Avatar's navigation and communication skills in SL.

- ◆ Students were required to point their browsers to www.secondlife.com to download and install the SL Viewer on their computers and then to create an avatar in SL.
- ◆ Next, they were required to go through the navigation and communication orientation provided by Linden Lab in SL and also to learn the various menu items in the SL Viewer.
- ◆ Regarding communication, the students were informed that avatars could communicate via local chat or global IM. Chatting is used for localized public conversations between two or more avatars, and is visible to any avatar within a short distance. IMs are used for private conversations, either between two avatars, or among the members of a group, or even between objects and avatars. Unlike chatting, IM communication is not limited by the distance between the participants.

Goal of Assignment 1: Understand the challenges that students encounter in learning the basic SL technologies.

Assignment 2: Event marketing. The second assignment for students was about event marketing. Event marketing is engagement marketing, or "experiential marketing," or "live marketing," or "participation marketing". It is a marketing strategy that directly engages consumers and invites and encourages consumers to participate in the evolution of a brand. Thus, rather than looking at consumers as passive receivers of messages, engagement marketers try to actively involve consumers in the production and co-creation of marketing programs. Ultimately, engagement marketing tries to connect consumers with brands by "engaging" them in a dialogue and

two-way, cooperative interaction. Event marketing, by holding events at a company's own site or sponsorship of events at other locations, should get the word out about the company and its products unobtrusively. Develop an ongoing relationship with the prospective customers through tools like freebies, discounts, music, entertainment, elegant displays, good quality product, excellent service, and membership accounts so they return for future purchases. A company can utilize event marketing for success. It may hold an event on its own premises or sponsor events held elsewhere. Event marketing can bring customers to the company's facilities. The American Marketing Association (www.marketingpower.com) defines event marketing as a promotional strategy linking a company to an event (sponsorship of a sports competition, festival, etc.). Often used as a synonym for "sponsorship". This term is preferable, because not all sponsorships involve an event. The expected results of successful event or sponsorship marketing include better customer satisfaction, repeat purchases, higher sales, and higher profits.

Assignment 2A: Students were required to attend an online event held by IBM and to answer some questions about this event. Registration was free for the IBM Cognos Midsize Business Analytics Virtual Summit that was hosted by IBM on June 9, 2010.

Avatars welcome! June 9, 2010 Virtual Midsize Business Analytics Summit: http://forms.cognos.com/?elqPURLPage=4166&offid=ev_cognos_express_virtual_summit_June9_2010_na&mc=-em_cognos_NAform&elq=f5111f041ef34cd1942f58aa91b35968.

Answer the following three questions:

1. How did IBM attract customers to its virtual, online event, and direct them to their actual salespeople?
2. What did IBM do to engage these prospective customers in order to convert them into actual customers?
3. How did IBM attempt to retain these customers?

Assignment 2B: Students work individually or in a team to identify a company to study in-world in SL. What methods does this company use to market itself – get the word out, get people to visit its store, to engage them while on their premises, get the order, and build an ongoing relationship? To what extent does this company use event marketing? What methods should this company use in order to improve its customer satisfaction, repeat purchases, sales, and profits.

Assignment 3: Take a guided tour of IBM Business Center by logging on to SL and entering the following address in the top box: (This address does not exist now) <http://maps.secondlife.com/secondlife/IBM%20Business%20Center/22/235/29>.

You may find the following two YouTube videos helpful before your avatar takes a guided tour of the IBM Business Center.

- ♦ Second Life – New IBM Virtual Business center <http://www.youtube.com/watch?v=JHZzql7L75w>.
- ♦ Tour of the virtual IBM Business Center <http://www.youtube.com/watch?v=7zT8OWQRzfg&feature=related>.

Assignment 4: Write a 3-5 page Report about the uses of the 3D VW campus of the southeastern public university in SL.

3.2. Class meetings for lecture/discussion, business reference librarian, and guest speaker. In addition to some assignments in SL, students met on a weekly basis for lectures/discussion and other purposes. Our first class meeting in SL was held at an IBM island. Most students' avatars sat on the keys of a giant piano while some students' avatars skated in a skating rink nearby while they all participated in a class discussion. Here are one student's thoughts reflecting his/her interest as well as some difficulties with chat communication:

"My first experience to meet in a group session like that in SL was just phenomenal! I mean, it was a totally different feeling as if when one is just exploring 'alone' in SL not knowing anyone to relate to. Also, the way the avatars were moving as they were directed by [the instructor] where to go was just like any 'real' scenario if we were to have met live! It was funny how some avatars were wanderers or just listeners or just kicked back – but, it was interesting to see how the chat feed was a lot to catch up on – one after another. I also had FUN skating after a few trial and errors to figure out to get skates on with some guidance."

"On the other hand, I think there should be some improvements with the chat window perhaps. I am not sure if there is a function to press to maintain all series of conversation; but, I think there should be a way to maintain all that has been transpiring from one conversation to another."

The co-author/instructor also invited the university's business reference librarian to give a PowerPoint

presentation in SL by using a PowerPoint viewer. The librarian prepared the PowerPoint slides for this presentation and the co-author/instructor converted them into JPG files, uploaded them into SL, and put them into the Slide Viewer in the classroom in SL at the university's virtual campus. One nice aspect of meetings in SL is that a transcript of all communication by chat can be e-mailed to students or put on a course management system like Blackboard/WebCT, or Moodle. Some students who could not attend the class meetings in SL were very grateful to have access to a transcript of these meetings. Also, those who participated in these class meetings also appreciated the notes of these meetings for their reference. In addition to textual transcripts, SL offers the opportunity to make a video of an online meeting called "machinima."

3.3. Various semesters in 2011, 2012, 2013: use of SL at a Private Southeastern University. Undergraduate students enrolled in various sections of marketing courses and an international business course were given numerous assignments in SL. These assignments ranged from attending presentations by the librarian in SL about the use of electronic resources at the university's library to making PowerPoint presentations in SL. The co-author/instructor also kept some office hours in SL and had the opportunity to meet with students' avatars for student advisement and discussions. Some of these meetings are described in Dubas and Hill (2013).

4. Assessment of student learning

This was a preliminary study, so the usual teaching evaluations and informal feedback will be utilized to evaluate the effectiveness of the use of SL in online teaching. No separate instruments were developed to test the effectiveness of SL through an experimental design. Future researchers should develop instruments and utilize experimental designs to evaluate the impact of SL on student learning in online courses. Ultimately, enhanced student learning through SL utilization should be reflected in terms of higher class participation, better performance in groups and on various tests and assignments, and fewer D, W, and F grades at the end of the term.

Table 1. Student instructional report, SIR II, produced by Educational Testing Service (ETS)

Courses	I. Overall evaluation Five point scale: 5 = Very effective. 4 = Effective. 3 = Moderately effective. 2 = Somewhat ineffective. 1 = Ineffective. 40. Rate the quality of instruction in this course as it contributed to your learning (try to set aside your feelings about the course content):	K. Student comments Note: The students' remarks are copied here verbatim; the name of the instructor is removed and [instructor] is inserted in its place.
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Table 1 (cont.). Student instructional report, SIR II, produced by Educational Testing Service (ETS)

Principles of marketing (traditional, face-to-face, use of Blackboard CMS, undergraduate course) Spring 2010 Enrollment: 30 Respondents: 30	Overall mean = 4.60	◆ I enjoyed having your class and the lessons taught will never be forgotten. ◆ Great teacher!
Principles of marketing (on-line, use of Blackboard CMS, undergraduate course) Spring 2010 Enrollment: 29 Respondents: 25	Overall mean = 3.58	◆ I am really enjoying learning about what marketing really is even though I was not interacting with the professor in a classroom, I really learned new things.
Principles of marketing (on-line, use of Blackboard CMS and Second Life, undergraduate course) Summer I, 8 weeks, 2010 Enrollment: 29 Respondents: 23	Overall mean = 3.55	◆ Thank for introducing SL to me ◆ The course was not what I expected from an online course. There were too many "meetings" required and exam times were not flexible. I am in the army which is why I decided to take an online course this summer and it turned out to be more of a hassle than any "in class" course I have ever taken. I asked the instructor to leave the exams available for a time period or during the wknd but he was unwilling to accommodate my needs, so it became necessary to withdraw from the course. In addition to the problems already stated, we were required to create avatars and go to meetings which didn't have any correlation with the course; another task that I wasn't able to accomplish because of work restraints. Overall I am very dissatisfied with the course and the instructor. Complete waste of money. [Student Name removed]: [Telephone number removed]. ◆ [Instructor] found very effective ways to communicate with us (the students). He even implemented a way to hold a virtual class meeting. [Instructor] has very good ideas pertaining to enhancing our education and the way learn information. More instructors should use his methods with online courses. ◆ This class would have been helpful if it was offer in class..come on!!!! allow students to have options..Not everyone can learn from an online class!!!!!!!!!!!!!! However i had no choice but to take the class:(◆ I love this class and the professor!!!
Fundamentals of marketing (on-line, use of Blackboard CMS and Second Life, graduate course) Summer I, 8 weeks, 2010 Enrollment: 5 Respondents: 4*	*** Overall mean was not calculated by ETS since the sample size less was less than 5. However, four students responded, and 25% of them rated it as effective. Therefore, the overall mean = $0.25(5) + 0.75(4) = 4.25$.	

Table 1 presents an assessment of four courses taught by an co-author/instructor of this study. All four are introduction to marketing courses. Three courses are at the undergraduate level and one course is at the graduate level. The same co-author/instructor taught these courses. If the enrollment across the undergraduate courses was at random, then it is appropriate to compare these courses. The following tentative conclusions can be offered based on this information:

1. *The students' average rating of the seated F2F section was higher than that of its OL counterpart when both undergraduate sections were offered in spring 2010.*

During spring 2010, two sections of the principles of marketing course were offered – one was a seated F2F section while the other was an OL section. Both of these course sections utilized Blackboard CMS. The students' overall evaluation for the seated F2F course (4.6 i.e. effective to very effective) was higher than that for the OL course (3.58 i.e. moderately effective to effective). Here the students had a choice between a seated F2F

course and its OL version and they self-selected their preferred section and mode of course delivery. However, since enrollment in each course section was capped at 30, some students who had preferred a seated course would have ended up in its OL version and vice versa. However, the number of such mismatched students would be limited compared with the situation where only one course section was offered. Since the co-author/instructor did not have the course ratings by individual student a test of significance (*t*-test) could not be performed on this data. However, the size of this difference $4.6 - 3.58 = 1.02$ seems to be significant. This implies the need to identify the causes of the lower students' evaluation of the OL course. The seemingly obvious answer is the course setting (or delivery mode). Perhaps the students in the OL course missed the F2F interaction of a seated class and felt that somehow their learning was not at a par with the seated F2F course. The students' comments, however, do not indicate a dissatisfaction with the course setting (mode of course delivery).

2. *Students' average rating of the summer 2010 OL undergraduate course using Blackboard CMS and SL was about the same as that of the spring 2010 OL course using Blackboard CMS but no SL. In summer 2010, however, the students, did not have a choice of course setting – only one section was offered.*

The overall evaluation (3.55) of the undergraduate course that was taught OL in summer 2010 using Blackboard CMS and SL was no different from the overall satisfaction scores for the undergraduate course (3.58) taught OL in spring 2010 using Blackboard CMS without the use of SL. It is interesting that students had many more responses for the course that utilized SL than the one without SL.

During spring 2010 both OL and traditional F2F sections were offered for the undergraduate marketing course in this study. However, during summer, only the OL section of this course was offered. Students who really wanted a traditional F2F course would be dissatisfied due to a lack of choice in OL versus seated course in summer 2010. Students' comments for the online course section in summer 2010 confirm this observation. Twenty-nine students were enrolled in the summer session, twenty-three of them rated this course and five of them provided verbal comments as well. Of these five verbal comments, three were very positive about the use of SL in the OL course while two showed students' dissatisfaction. One of the dissatisfied students was concerned about a lack of choice between a seated F2F class and an OL class. The other dissatisfied student did not like the course requirement to create an avatar and to go to meetings in SL and acknowledge that he/she did not do so. He/she was also concerned about the limited time to take the OL exams. Thus, the Overall Evaluation of the summer 2010 course includes the positive effects of SL and the negative effects of a lack of a traditional F2F course section.

3. *Tradeoff between the convenience of an OL course and the richer F2F interaction of a traditional seated course.*

When students are offered a choice between a seated F2F section and an OL section of a course, typically the OL section fills up and has a waiting list of students while there would be seats still available in the seated F2F section. However, in this study, undergraduate students gave a lower overall score to the OL courses compared with the traditional F2F course. This seems to imply a trade-off that students face. An OL course offers a higher convenience of time

and place than its traditional counterpart but these undergraduate students miss the F2F interaction with their instructors and other students. Thus, there is a need to further explore and utilize the many possibilities offered by 3D VW including those for F2F interaction among the agents or avatars of students and their instructors.

4. *Summer 2010, graduate OL course with Blackboard CMS and SL.*

The overall mean score for the graduate course was 4.25 indicating that students found this course to be between effective and highly effective. This indicates the graduate students' favorable response to the use of SL. No seated F2F section of this course was available in summer 2010 and no graduate student in the OL section expressed a preference for a traditional F2F section. Perhaps these students were satisfied with the virtual F2F interactions among avatars and did not feel a need for a traditional F2F interaction among students and their instructor.

Conclusion

In addition to numerous OL colleges and universities, many traditional colleges and universities with traditional degree programs now offer OL degree programs. The trend shows a continuous increase in OL degree programs. It is apparent, that OL programs offer their students maximum flexibility in terms of time and space and appear to be preferred over the traditional face-to-face courses by many students. OL programs are also less expensive for the educational institutions that offer them since these programs do not require a physical campus and support staff to maintain classrooms and other supporting physical facilities. These OL courses are also convenient for inviting guest speakers who could travel in the OL virtual world to make guest appearances as opposed to travelling in real life. Many libraries now have OL availability of their resources and many libraries have now established their presence in 3D VW like in SL.

The various 3D VW platforms offer an opportunity to utilize their virtual resources to supplement those of a CMS like Blackboard/WebCT or Moodle to enhance student learning. SLOODLE is also useful for integration of SL or OpenSim with the Moodle CMS platform. The OL classes can be offered in synchronous or asynchronous modes. In addition, OL graduation ceremonies can be held for the OL students who otherwise may not have the opportunity to participate in the traditional graduation ceremonies that are typically held at the physical campus of an educational institution.

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Appendix

Table 2. A transcript of a tour of the public southeastern university's 3D VW campus in SL on July 8, 2010 at 6:30 pm Eastern Standard Time, USA (the instructor's avatar is Alpha Iceghost. SL uses the Pacific Standard Time since Linden Lab is located in San Francisco, USA)

[15:05] Alpha Iceghost: Hello Will, How are you today?
 [15:06] Alpha Iceghost: Welcome to the FSU cyber campus!
 [15:06] Will Japiri: Hi Alpha...I am well and you?
 [15:06] Alpha Iceghost: I am fine.
 [15:06] Alpha Iceghost: Thank you very much.
 [15:06] Will Japiri: i am here of the tour..this is exciting
 [15:06] Will Japiri: its different
 [15:06] Alpha Iceghost: You are early. I see other people here as well.
 [15:07] Alpha Iceghost: Thank you for the compliment.
 [15:07] Will Japiri: i love the care
 [15:07] Will Japiri: car
 [15:07] Alpha Iceghost: Let us wait till others get here before we start the tour.
 [15:07] Alpha Iceghost: thank you.
 [15:07] Will Japiri: can i walk around until everyone gets here
 [15:08] Alpha Iceghost: Yes please do walk around.
 [15:08] Alpha Iceghost: I will see you later.
 [15:08] Alpha Iceghost: Hi Lori
 [15:08] Lori Bubble: hello
 [15:08] Alpha Iceghost: Welcome to the FSU cyber campus.
 [15:08] Alpha Iceghost: I am glad that you stopped by for the tour.
 [15:09] Alpha Iceghost: You may want to look around untill others arrive for the tour.
 [15:09] Lori Bubble: okay
 [15:15] cdodom01 Restless: is this where we are suppose to meet Dr. Dubas
 [15:15] Alpha Iceghost: yes.
 [15:15] cdodom01 Restless: ok, just checking
 [15:16] Alpha Iceghost: Welcome to the FSU cyber campus.
 [15:16] cdodom01 Restless: thx
 [15:16] Alpha Iceghost: Let us wait till others get here.
 [15:16] cdodom01 Restless: ok
 [15:16] Alpha Iceghost: Please walk around to check out this place.
 [15:17] No room to sit here, try another spot.
 [15:29] Will Japiri: oops..sorry
 [15:29] LaSniperette Darkfire: especially when I look hawaiian when I am not LOL
 [15:29] LaSniperette Darkfire: no problem! :)
 [15:29] LaSniperette Darkfire: I just got home and hauled through the traffic
 [15:29] LaSniperette Darkfire: it was crazy
 [15:29] Will Japiri: i have been here about 15 mins...i walked around...or should i say flew around
 [15:29] LaSniperette Darkfire: and my kids are screaming lol
 [15:29] Will Japiri: and i have alot of ideas
 [15:29] LaSniperette Darkfire: That is great!
 [15:30] LaSniperette Darkfire: Me and Stacie looks forward to receiving your ideas
 [15:30] Will Japiri: i am sitll at the office...figured i would just do the tour here and then go home
 [15:30] LaSniperette Darkfire: there isalpa
 [15:30] Alpha Iceghost: Hello YAMIJ001
 [15:30] Alpha Iceghost: Hello LaSniperette
 [15:30] LaSniperette Darkfire: Hello!
 [15:30] YAMIJ001 Xaris: hello Dr Dubas
 [15:30] LaSniperette Darkfire: sorry
 [15:30] Alpha Iceghost: Hello Will again,
 [15:30] Will Japiri: did you guys see Alphs's car?
 [15:30] LaSniperette Darkfire: getting use tot he controls on thislaptop
 [15:30] Alpha Iceghost: Hello everybody.
 [15:30] YAMIJ001 Xaris: yes
 [15:31] LaSniperette Darkfire: No is that really his?!
 [15:31] Will Japiri: yep
 [15:31] Alpha Iceghost: Let me warmly welcome everyone here.
 [15:31] LaSniperette Darkfire: really!
 [15:31] Alpha Iceghost: Hello Alexandria Eternal! Welcome.
 [15:31] LaSniperette Darkfire: that would be awesome to see him litteralyroll virtially
 [15:31] Alexandria Eternal: any memebbers of group 4 here?
 [15:31] Alexandria Eternal: hi professor!
 [15:32] Alpha Iceghost: Hi Eternal! Welcome.
 [15:32] Alpha Iceghost: Perhaps we shoudl wait a couple of minutes .
 [15:32] Alpha Iceghost: I have decided to extend the deadline for Task 4 by two days.
 [15:32] Alpha Iceghost: I will send a message to everyone.
 [15:33] Will Japiri: perfect
 [15:33] Alpha Iceghost: that is fine.
 [15:33] LaSniperette Darkfire: that is awesome!!
 [15:33] LaSniperette Darkfire: SOOO AWESOME!
 [15:33] LaSniperette Darkfire: thank you!
 [15:33] Will Japiri: so what time zone are we in....its getting dark out
 [15:33] LaSniperette Darkfire: you can change it will
 [15:33] LaSniperette Darkfire: on the world tab
 [15:33] Will Japiri: oh..didnt know that

[15:33] Alpha Iceghost: It is different from others and I will tell you its name later on.
 [15:33] Will Japiri: will have to play around with it
 [15:33] Alpha Iceghost: First of all adjust the sunlight.
 [15:34] LaSniperette Darkfire: its under SUN
 [15:34] LaSniperette Darkfire: from the World tab
 [15:34] LaSniperette Darkfire: I put in Sunrise
 [15:34] Will Japiri: wow
 [15:34] Alpha Iceghost: In the top menu bar choose World then choose Sun then choose midday
 [15:34] Will Japiri: got it
 [15:34] LaSniperette Darkfire: this si socool
 [15:34] LaSniperette Darkfire: so gald to FINALLY make a meeting here
 [15:34] Will Japiri: i like the sunrise
 [15:34] Will Japiri: very pretty
 [15:34] Annette Haven: hello everyone
 [15:35] Alpha Iceghost: midday will give you maximum light. You control the sun in SL.
 [15:35] Will Japiri: hello
 [15:35] cdodom01 Restless: hi
 [15:35] Annette Haven: what i miss
 [15:35] LaSniperette Darkfire: midday it is dr alpha :)
 [15:35] Alpha Iceghost: Hi Annette.
 [15:35] Alpha Iceghost: Adjust the sunlight to midday.
 [15:35] Will Japiri: done
 [15:35] Annette Haven: hello Mr. Alpha how re you
 [15:35] Alpha Iceghost: I am fine Annette.
 [15:35] Alpha Iceghost: set sunlight to midday.
 [15:36] Alpha Iceghost: Let us start the tour.
 [15:36] Alpha Iceghost: Please follow me.
 [15:36] YAMIJ001 Xaris: k
 [15:36] Annette Haven: ok
 [15:36] LaSniperette Darkfire: certainly - you did a great job building this empiure!
 [15:36] LaSniperette Darkfire: ok I can't sit
 [15:36] Alpha Iceghost: thank you for your kind words.
 [15:36] LaSniperette Darkfire: I don't jave a mpoiuse
 [15:37] Alpha Iceghost: Please sit down.
 [15:37] LaSniperette Darkfire: it must have taken a lopad of money to build this place
 [15:37] Alpha Iceghost: As you know the purpose of Task 4 is to find out how we can use the facilities here to enhance our courses.
 [15:38] Alpha Iceghost: And what you imagine that we should add here to enhance education.
 [15:38] Alpha Iceghost: This coliseum can be quite useful.
 [15:38] Alpha Iceghost: I could for example teach a course on new product development here.
 [15:38] Alpha Iceghost: We could build new products and demonstrate to each other here.
 [15:39] Will Japiri: are we talking about ideas for all types of courses correct...not just business
 [15:39] Will Japiri: or just business
 [15:39] Alpha Iceghost: Yes, all types of courses and degree or certificate programs.
 [15:39] Alpha Iceghost: do you like a water fountain?
 [15:39] cdodom01 Restless: seminars could be held here for those students who are able to attend the ones on campus
 [15:39] cdodom01 Restless: yes i like it
 [15:39] Alexandria Eternal: agreed
 [15:40] Will Japiri: this would make a great place for historical reenactments
 [15:40] Alpha Iceghost: yes, let your imagination run wild.
 [15:40] Alpha Iceghost: Old ways of thinking restrict us.
 [15:40] Alpha Iceghost: Do you like trees?
 [15:40] Annette Haven: could any major course related class be touch with alter time frames
 [15:41] cdodom01 Restless: yes
 [15:41] cdodom01 Restless: how did you do that
 [15:41] Annette Haven: this would keep the class size down
 [15:41] Will Japiri: i dont know if that is possible but imagine we are in a history class and we are watching the reenactment of a historical battle during the civil war
 [15:41] YAMIJ001 Xaris: good one
 [15:41] Alpha Iceghost: Will, that is a wonderful idea.
 [15:42] Alpha Iceghost: I think something like that is already implemented.
 [15:42] Alpha Iceghost: For exampl,e the OLD Harlem exists in SL and I will take you there some day to the Cotton Club.
 [15:42] cdodom01 Restless: ok
 [15:42] Will Japiri: that would be perfect
 [15:43] Annette Haven: that will work
 [15:43] Alpha Iceghost: Ok. Let us go into one of the buildings.
 [15:43] Alpha Iceghost: there are two entrances at the front
 [15:44] Alpha Iceghost: this place can act as an elevator.
 [15:44] Alpha Iceghost: You jsut press a button to get to the next floor.
 [15:44] LaSniperette Darkfire: By the wall or at the window
 [15:44] Alpha Iceghost: Let us go out on the terrace.
 [15:45] Alpha Iceghost: I will put tables and chairs here.
 [15:45] Will Japiri: and in the main lobby
 [15:45] Annette Haven: make it a lounge
 [15:45] Alpha Iceghost: These buildings need to be furnished except for the thrird floor.
 [15:45] Alpha Iceghost: Yes, that is a good idea.
 [15:45] Alpha Iceghost: All your ideas are most welcome.
 [15:46] Annette Haven: what about a outside bar with drinks
 [15:46] Alpha Iceghost: I have put 6 buildings like this here.
 [15:46] Alpha Iceghost: Great idea Annette.
 [15:46] Alpha Iceghost: I also thkink about a skating rink and perhaps a dance floor
 [15:46] Alexandria Eternal: i thought about that good annette
 [15:46] Alpha Iceghost: and also a beach

[15:46] Will Japiri: definatley a beach
 [15:46] Alexandria Eternal: beach or maybe a pool
 [15:47] Alpha Iceghost: Great so that is in my mind now.
 [15:47] Alpha Iceghost: One more thing.
 [15:47] Will Japiri: is it possible to add sound effects for the beach..such as ocean sounds
 [15:47] YAMIJ001 Xaris: library
 [15:47] Annette Haven: you will not be able to keep the count down if you put a beach
 [15:47] Alpha Iceghost: I want to set up an orientation place for new commers near the coliseum.
 [15:47] cdodom01 Restless: that is right
 [15:47] Alpha Iceghost: Also there I will set up buttons with landmarks
 [15:48] Alpha Iceghost: so people could just press a button to get to a building or to a floor of a building.
 [15:48] YAMIJ001 Xaris: oh
 [15:49] Alpha Iceghost: Here walking, running, driving, or flying are luxury - they will not be required if you properly use landmarks for taransportation
 [15:49] Alpha Iceghost: Let us go to the second floor of this building.
 [15:49] Annette Haven: ok
 [15:49] YAMIJ001 Xaris: k
 [15:49] Alpha Iceghost: I need to furnish this floor as you can see.
 [15:50] Alpha Iceghost: nice view.
 [15:50] Alpha Iceghost: Again this needs to be furnished.
 [15:50] YAMIJ001 Xaris: beautiful
 [15:50] LaSniperette Darkfire: i feel like i am touring a home for sale!
 [15:50] Annette Haven: what about drink machines
 [15:50] Alpha Iceghost: I plan to make it a large conference and multimedia room.
 [15:51] Alpha Iceghost: Yes, drink machines as well coffee.
 [15:51] Annette Haven: just to give it some items to fill the room
 [15:51] Alpha Iceghost: another room.
 [15:51] Alpha Iceghost: Perhaps a large table and chairs and a screen
 [15:51] Alpha Iceghost: it will look better with furniture.
 [15:51] LaSniperette Darkfire: this could be a music room
 [15:52] Alpha Iceghost: that is an idea.
 [15:52] LaSniperette Darkfire: i guess the style of the room suits it
 [15:52] Alpha Iceghost: I like that these are well lit buildings
 [15:52] Alpha Iceghost: Yes all of your ideas are welcome.
 [15:52] Alpha Iceghost: Let us go to the balcony to my left.
 [15:53] LaSniperette Darkfire: we can grow some trees'
 [15:53] LaSniperette Darkfire: or plant some
 [15:53] Alpha Iceghost: We can see the ocean aroud us.
 [15:54] Annette Haven: that would be nice
 [15:54] LaSniperette Darkfire: oh that is an ocean from afar?
 [15:54] Alpha Iceghost: Hes, and I should put some chairs over here.
 [15:54] LaSniperette Darkfire: we can plant coocnut trees or banan trees
 [15:54] Alpha Iceghost: Yes, we are on an island.
 [15:54] Alpha Iceghost: good ideas.
 [15:54] Annette Haven: with little tables and chairs
 [15:54] Alpha Iceghost: Let us go to the third floor.
 [15:54] LaSniperette Darkfire: dr alpha - you make me feel like we should build a resort for the university
 [15:55] Annette Haven: Now that's an idea
 [15:55] LaSniperette Darkfire: now thijs is nice
 [15:55] Alpha Iceghost: Have a seat please.
 [15:55] Annette Haven: ceremony room
 [15:55] Alexandria Eternal: really like this
 [15:55] YAMIJ001 Xaris: nice room
 [15:56] Alpha Iceghost: This is a large auditorium with multimedai capabilities.
 [15:56] Alpha Iceghost: I am glad that you like it.
 [15:56] Alpha Iceghost: We have six buildings just like it.
 [15:56] Annette Haven: yes, very nice
 [15:56] Alpha Iceghost: so six large open air lecture halls
 [15:57] Alpha Iceghost: I guess you like it?
 [15:57] cdodom01 Restless: yes it is nice
 [15:57] LaSniperette Darkfire: yes
 [15:57] Annette Haven: If the six halls hold about 10 students then whe will be under the 70 count
 [15:57] Alpha Iceghost: Think how we can use it to enhance our courses.
 [15:58] cdodom01 Restless: are you going to increase the capacity of visitors for cyber campus
 [15:58] Alpha Iceghost: Yes, theoreticallay about 100 people in this island but thiings will be very slow.
 [15:58] Alpha Iceghost: So practically about 70 people at one time on this island is all that we can have.
 [15:58] Annette Haven: Then that will work
 [15:58] LaSniperette Darkfire: really?
 [15:58] Alpha Iceghost: We now have only 6 people.
 [15:58] LaSniperette Darkfire: why so limited
 [15:59] LaSniperette Darkfire: this place is huge
 [15:59] cdodom01 Restless: my thoughts exactly
 [15:59] Alpha Iceghost: In a 3D World the computers have to do a lot of calculations so that is why the limit.
 [15:59] LaSniperette Darkfire: so if we are to provide ideas
 [15:59] LaSniperette Darkfire: to do the task
 [15:59] Alpha Iceghost: Imagine 70 people moving in different directions - that is a lot of calculations.
 [15:59] LaSniperette Darkfire: then we should imagine for only 70 students
 [16:00] cdodom01 Restless: so if this was opened up to the entire FSU, we would have to have time slots to log on
 [16:00] Annette Haven: that would be wild. I have a hard time now to walk straight
 [16:00] Alpha Iceghost: Yes, please think about the uses of these facilities and other facilities that we could put here.
 [16:00] cdodom01 Restless: i agree annette
 [16:00] LaSniperette Darkfire: an information desk

[16:01] Annette Haven: that's good
 [16:01] LaSniperette Darkfire: at one of the lobbies
 [16:01] YAMIJ001 Xaris: we should also name each building
 [16:01] Annette Haven: actually one should be on every floor
 [16:01] LaSniperette Darkfire: and have a map of the campus displayed
 [16:01] LaSniperette Darkfire: in the center of bldgs
 [16:01] Alpha Iceghost: Yes, you have wonderful ideas.
 [16:01] LaSniperette Darkfire: ty
 [16:01] Alpha Iceghost: great ideas.
 [16:02] cdodom01 Restless: yes that would be helpful if it is on every floor
 [16:02] Annette Haven: having to walk or fly up or down the stairs will get tiring after a while
 [16:02] Alpha Iceghost: I was so far a worker bee here
 [16:02] Alpha Iceghost: We can improve what i have built here.
 [16:02] LaSniperette Darkfire: we can have a spa for R&R for graduates that work lol by appt only
 [16:02] cdodom01 Restless: is it possible to implement virtual power point screens for the lectures if they held here
 [16:03] Alpha Iceghost: As I said, we can put buttons with building numbers and floor numbers so people can simply teleport there.
 [16:03] Alpha Iceghost: teleporting is instantaneous.
 [16:03] LaSniperette Darkfire: that is good idea
 [16:03] Alpha Iceghost: Let us fly to the Ampitheatre now.
 [16:03] cdodom01 Restless: or just a projector period in the virtual world
 [16:03] Alpha Iceghost: Can everyone fly there?
 [16:03] Alexandria Eternal: i cant fly
 [16:04] Alexandria Eternal: how u do it again?
 [16:04] LaSniperette Darkfire: go to move
 [16:04] Alexandria Eternal: nevermind
 [16:04] Alpha Iceghost: Ok, those who can not fly shoudl jsut walk down.
 [16:04] LaSniperette Darkfire: come on will lol
 [16:04] Alpha Iceghost: to the front of the building
 [16:04] cdodom01 Restless: use your page up button
 [16:04] Alpha Iceghost: and we will walk to the ampitheatre/
 [16:04] Alexandria Eternal: i am going to have to follow someone
 [16:05] Alpha Iceghost: use page up to fly up and page down to come down. use arrow keys to move around.
 [16:05] Alpha Iceghost: this was taks #1 - navigation and communiations.
 [16:06] Alpha Iceghost: Let us go to the ampitheatre.
 [16:07] Will Japiri: nice landing Darkfire
 [16:07] Alpha Iceghost: Celeste has been sleeping here all the time!
 [16:07] Will Japiri: lol
 [16:07] LaSniperette Darkfire: hehe that is why I am La Sniperette LOL
 [16:07] LaSniperette Darkfire: thanks :)
 [16:07] Annette Haven: she was here at the begining
 [16:08] Alpha Iceghost: I see. I guess she has already taken the tour.
 [16:08] LaSniperette Darkfire: no i didn't take the tour I missed it last night
 [16:08] Alpha Iceghost: I should also mention that in SL we can have structures that hang in the air.
 [16:08] LaSniperette Darkfire: I was following Will from above to get here
 [16:08] Alpha Iceghost: This gives us many more possiblities than in the real world.
 [16:09] Alpha Iceghost: So far example we could have a skating rink or a dance floor higher in the sky above here.
 [16:09] LaSniperette Darkfire: really>
 [16:09] LaSniperette Darkfire: is that possible?
 [16:10] Alpha Iceghost: Or we could have a performing arts bulding or facility in the air.
 [16:10] Will Japiri: what was that Darkfire
 [16:10] Alpha Iceghost: Yes
 [16:10] LaSniperette Darkfire: testing dance skills
 [16:10] Will Japiri: lol
 [16:10] LaSniperette Darkfire: while sitting
 [16:10] Alpha Iceghost: Let me go get Alexandra she is lost and sent for help.
 [16:10] Annette Haven: what about a dance hall in the air
 [16:10] LaSniperette Darkfire: i wonder what it would look while flying!
 [16:10] Alpha Iceghost: I shall be back.
 [16:11] Alexandria Eternal: sorry
 [16:11] Alexandria Eternal: okay
 [16:12] Alpha Iceghost: have a seat Alexandra.
 [16:12] Alpha Iceghost: do you like it?
 [16:13] Alexandria Eternal: yes very nice
 [16:13] Alpha Iceghost: I have worked very hard to build this campus and to provide these facilities.
 [16:13] Alexandria Eternal: I apologize for me getting lost :)
 [16:13] Alpha Iceghost: let us make the best use of them.
 [16:13] Will Japiri: does this cost
 [16:13] Alpha Iceghost: That is okay Alexandra.
 [16:13] LaSniperette Darkfire: not a campus dr alpha - an EMPIRE! :)
 [16:13] Alpha Iceghost: You should practice flying. It is a lot of fun as well.
 [16:14] Alpha Iceghost: Did you say an empire?
 [16:14] LaSniperette Darkfire: yes
 [16:14] LaSniperette Darkfire: its immaculate!
 [16:14] Alpha Iceghost: How an empire? it is for students and faculty to enhance education and learning.
 [16:14] LaSniperette Darkfire: true just the design
 [16:14] LaSniperette Darkfire: and the vision
 [16:14] Alpha Iceghost: Thank you for your kind words of encouragement.
 [16:15] Alpha Iceghost: this place was barren when I started work here about ten days ago.
 [16:15] LaSniperette Darkfire: wow
 [16:15] Annette Haven: I think you have done a great job being that this is your first time ever doing any thing like this
 [16:15] LaSniperette Darkfire: I agree annette

[16:15] Annette Haven: you were very busy
 [16:15] Alpha Iceghost: I have walked on almost every square foot many many times to build it. A lot of hard work.
 [16:16] LaSniperette Darkfire: Will you be using this facility for the future?
 [16:16] LaSniperette Darkfire: courses?
 [16:16] YAMIJ001 Xaris: thank you for all the hard work
 [16:16] Alexandria Eternal: you built all this? how long did it take?
 [16:16] Alpha Iceghost: Yes, I am new to SL like you.
 [16:16] LaSniperette Darkfire: 10 days
 [16:16] Alpha Iceghost: I joined SL about two or three days before you did.
 [16:16] Alexandria Eternal: wow thats short time frame
 [16:16] cdodom01 Restless: oh ok
 [16:17] Alexandria Eternal: great job
 [16:17] Alpha Iceghost: Thank you.
 [16:17] Annette Haven: you have gave this class a lot of your personal time
 [16:17] Annette Haven: yes you have done great
 [16:17] Will Japiri: great work
 [16:17] cdodom01 Restless: i agree
 [16:17] YAMIJ001 Xaris: so this has been a learning process to all
 [16:17] Alpha Iceghost: Let us see how we can use this facility?
 [16:18] Alpha Iceghost: We can watch movies here.
 [16:18] Annette Haven: these are the things you are looking for in our paper
 [16:18] Alexandria Eternal: yea first thought came to mind was movies
 [16:18] LaSniperette Darkfire: yes nd have major concerts and symphonies
 [16:18] Alpha Iceghost: A drama class could perform a show over here!
 [16:18] Celeste Latoe: im up now been here since six thirty
 [16:18] LaSniperette Darkfire: indeed!
 [16:18] Alexandria Eternal: plays...
 [16:18] Alpha Iceghost: Yes, certainly
 [16:18] Alexandria Eternal: yep
 [16:19] Alpha Iceghost: Perhaps some well known singers or artists could be invited here to perform.
 [16:19] Alpha Iceghost: Students could use it for speech classes.
 [16:19] LaSniperette Darkfire: true
 [16:19] cdodom01 Restless: yes
 [16:19] Alpha Iceghost: Use voice instead of chat.
 [16:19] Alpha Iceghost: for speech classes I mean.
 [16:19] LaSniperette Darkfire: or we can have pageants
 [16:19] Celeste Latoe: have debates
 [16:19] Alpha Iceghost: You guyes have great ideas.
 [16:20] Annette Haven: that would be nice
 [16:20] cdodom01 Restless: ceremonies
 [16:20] Alpha Iceghost: So a beach, an orientation area, etc should be addred nearby here.'
 [16:20] Alpha Iceghost: Well, so do you have any questions for me at this time?
 [16:20] Celeste Latoe: maybe a gym
 [16:20] Will Japiri: can you demonstrate the buggy
 [16:21] Alpha Iceghost: Yes, a gym will be good.
 [16:21] LaSniperette Darkfire: that is cool - I would defintiley love to see that happen
 [16:21] LaSniperette Darkfire: did we mention a cafeteria?
 [16:21] Alpha Iceghost: Write up your ideas and we will work to make them real.
 [16:21] Annette Haven: me too
 [16:21] LaSniperette Darkfire: that sounds good
 [16:21] LaSniperette Darkfire: we dfeinitely just almost wrapped up what our task would be to submit
 [16:22] Alpha Iceghost: So perhaps our next class meeting will be on top of one of these buildings.
 [16:22] Will Japiri: senging my ideas over to you right now Darkfire
 [16:22] cdodom01 Restless: ok
 [16:22] Celeste Latoe: that would be nice
 [16:22] LaSniperette Darkfire: ok will
 [16:22] LaSniperette Darkfire: make sureyou enumerate them :)
 [16:22] Alpha Iceghost: Now although this island is called FSU Cyber Campus
 [16:23] LaSniperette Darkfire: oh and Cc stacie too will
 [16:23] Alpha Iceghost: we can not open it to all of FSU as you alraedy know.
 [16:23] LaSniperette Darkfire: I see - well, I don't thimk we will be encountering anyone new though
 [16:23] LaSniperette Darkfire: you mean when the class is over?
 [16:23] Alpha Iceghost: Since then we would not be able to walk around with over 70 people.
 [16:23] Celeste Latoe: thats right
 [16:23] Alpha Iceghost: However, this is not the largest size of the island possible.
 [16:24] cdodom01 Restless: oh okay, i ask that question earlier
 [16:24] Alpha Iceghost: We can buy an island four times the size of this island
 [16:24] Alpha Iceghost: so that would accomodate more students and more than one college within FSU.
 [16:24] LaSniperette Darkfire: i c
 [16:24] cdodom01 Restless: then the capacity could increase
 [16:25] Alpha Iceghost: Alexandra did you put sunlight to midday?
 [16:25] LaSniperette Darkfire: she must be sleeping
 [16:25] Alpha Iceghost: That will give you max light.
 [16:25] Celeste Latoe: but although the island will be bigger will the system still run slow or at regular pace
 [16:25] LaSniperette Darkfire: can the light do that?
 [16:25] Will Japiri: Dr Iceghost, i have to go now...thank you for the tour and great job with the place...can't wait to see the finished product
 [16:26] LaSniperette Darkfire: are we going tomeet again to see this place?
 [16:26] LaSniperette Darkfire: I landmarked it
 [16:26] Alpha Iceghost: I am new to SL but what I have read is that if you put buildings in the middle of a large island then you
 [16:26] Alpha Iceghost: can have more people
 [16:27] Alpha Iceghost: so four time larger island means about 280 people at one time.

[16:27] LaSniperette Darkfire: then everyone would be going around circles unless there are corridors connecting to each building
 [16:27] Alpha Iceghost: yes,
 [16:27] Alpha Iceghost: also teleporting will be useful.
 [16:27] LaSniperette Darkfire: true yues
 [16:27] Alpha Iceghost: I see someone flying there
 [16:27] Alpha Iceghost: Let me check who is it
 [16:28] Alpha Iceghost: Hello faith
 [16:28] Alpha Iceghost: come join us at the ampitheatre.
 [16:29] Alpha Iceghost: Faith is flying around.
 [16:29] Alpha Iceghost: Ok
 [16:29] Alpha Iceghost: We have been here for one hour.
 [16:29] LaSniperette Darkfire: ok
 [16:29] Alpha Iceghost: do you have any questions at this time?
 [16:29] Alpha Iceghost: I know you will have many ideas
 [16:29] LaSniperette Darkfire: not at the moment
 [16:30] cdodom01 Restless: no questions at this time
 [16:30] LaSniperette Darkfire: yes, ideas are coming
 [16:30] LaSniperette Darkfire: in mind
 [16:30] LaSniperette Darkfire: to mind
 [16:30] Alpha Iceghost: I am very much honoured and happy that you liked this campus.
 [16:31] cdodom01 Restless: you are welcome
 [16:31] Annette Haven: i don't understand why not you did great
 [16:31] LaSniperette Darkfire: its gorgeous especially being on an island
 [16:31] Alpha Iceghost: Thank you Annette
 [16:31] Annette Haven: you are very welcome
 [16:31] Alpha Iceghost: Thank you.
 [16:47] Alpha Iceghost: We can chat and record these sessions.
 [16:48] Alpha Iceghost: If you find it easier then work alone on taks 4.
 [16:48] Alexandria Eternal: ok i may just do that. 5 pages?
 [16:48] Alpha Iceghost: not to exceed 5 pages.
 [16:55] Alpha Iceghost: Basically you need to find ways to enhance learning/education by using these facilities or by imagining what could be added here.

The following figures show meetings and presentations in SL to our students.



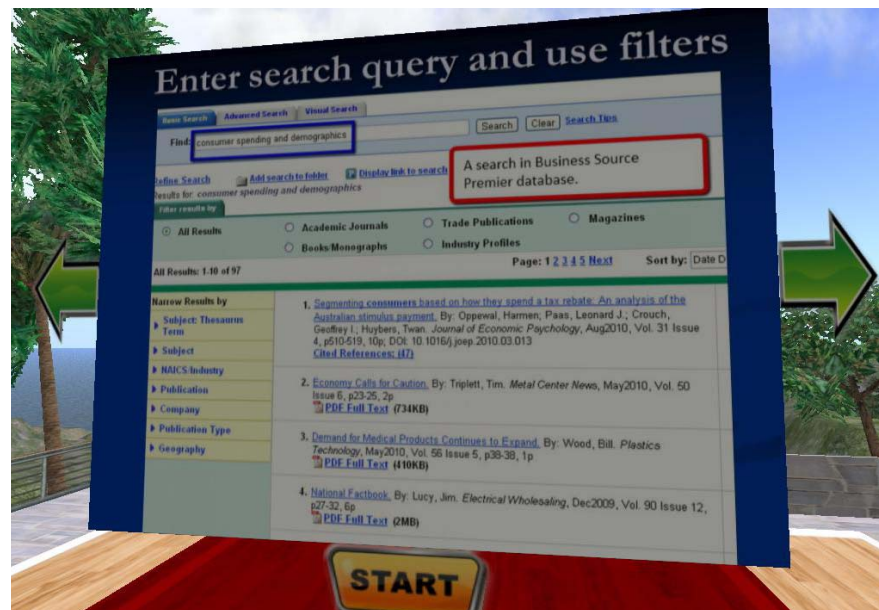
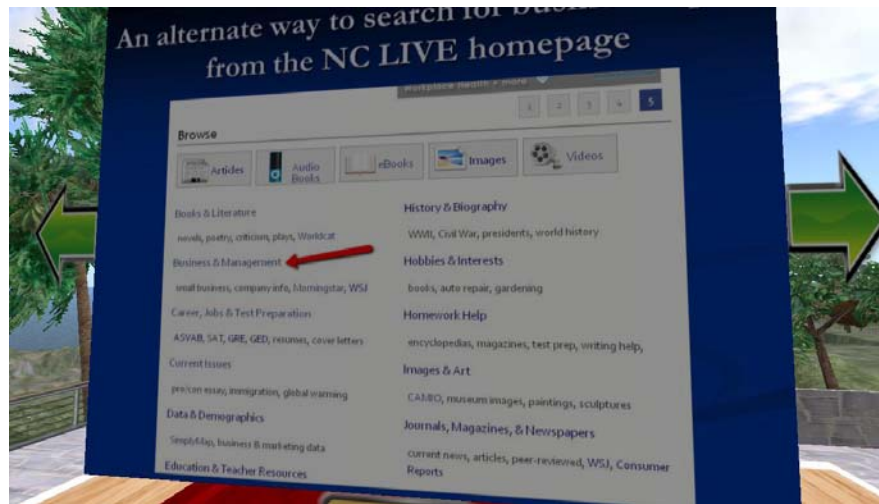




Fig. 1. Meetings and presentations in SL