

The SaLamander Project: Final Report

Prepared for the
NorthWest Academic Computing Consortium
by
By Dr. Jonathon Richter
Dr. Lynne Anderson-Inman

April 14, 2008

**Center for Advanced Technology in Education
College of Education
University of Oregon
Eugene, OR**

SaLamander Project : Final Report

Prepared for the
NorthWest Academic Computing Consortium
April 20th, 2008

Project Staff:

Project Director: Lynne Anderson-Inman, Ph.D.
Project Coordinator: Jonathon Richter, Ed.D.
Project Assistant: Mindy Frisbee

Project Partners:

MERLOT: <http://www.merlot.org>
Sloog: <http://www.sloog.org>
Eloise Pasteur: <http://eloisepasteur.net/>
Sun Microsystems: 2
Immersive Education: <http://immersivededucation.org/>

Overview

Introduction

In the Spring of 2007, the NorthWest Academic Computing Consortium awarded the University of Oregon's Center for Advanced Technology in Education a \$10,000 "Proof of Concept" grant to develop an educational resource in the 3D immersive world known as Second Life (<http://secondlife.com>) that would enable educators to locate, share, and evaluate educational builds and objects in this virtual 3D learning environment. Known as the SaLamander Project, the goal was to create a system for analyzing and codifying educationally relevant artifacts in Second Life in order to assist educators in searching for and determining their appropriateness for meeting specific learning objectives. The Salamander Project was designed to provide the educational community with a much-needed resource that would support the indexing and evaluation of the growing number of useful educational builds within Second Life. The Salamander Project had two primary goals, both of which were well met. The first goal was to describe and organize Second Life "learning objects" such that individuals may search for and access them easily. The second goal was to build a data management system that would support the ongoing identification and evaluation of a growing collection of reviews related to the educational use of the learning objects. In this way, the Salamander Project served as an initial pilot test of a system designed to be useful to the entire Second Life education community. The project has met and exceeded its goals. Many educators in the Second Life community participated in the project, nominating educationally relevant builds and objects using the SaLamander "Heads Up Display" or HUD. Others participated in rating the nominees and still others helped to develop a topology, using nominated exemplars, based on types of learner engagement. While there are still many points in the system that require refinement, we continue to attract Second Life Educators to the project and the SaLamander HUD is now one of the leading educational tools in Second Life. The SaLamander Project has also led the way to the larger enterprise of vetting learning materials from ALL virtual 3D worlds and is being used as an exemplar for good practice in the new MERLOT Community of Practice called the Center for Learning in Virtual Environments, or CLIVE.

Video Overview of SaLamander

<http://blip.tv/file/571587>

To demonstrate the process of nominating and evaluating educationally useful materials in Second Life, we developed a short video. This video demonstrates the process of

- (1) tagging an educational material in Second Life, transferring it automatically via the Heads-Up-Display (HUD); to
- (2) Sloog <http://sloog.org> where all things tagged with the HUD may be viewed under the tag, “salamander” or users may view the list of their own marked items on their own personal page; to
- (3) the Salamander Wiki Community, where all appropriate HUD tags are placed into the Media Wiki as a “stub” and then detailed, discussed, and vetted by the community; to
- (4) MERLOT <http://www.merlot.org> where the community-nominated, expert reviewed Second Life learning materials may be accessed with the nearly 20,000 other vetted digital materials reside.

SaLamander Project Website

http://cate.uoregon.edu:8095/index.php?option=com_content&task=view&id=39&Itemid=1

The Salamander Project also created a website to contain and disseminate information about the Salamander typology and educational materials in Second Life. The SaLamander Project website provides an overview of the project, who is involved, the logo for NWACC as a generous sponsor of our efforts, links to project partners, and access to the SaLamander Community Wiki. In addition, there are links to published papers and presentations made about SaLamander, and information about how to get involved. The website is currently undergoing alterations as part of an overall redesign effort of the CATE family websites under the direction of Center Director Dr. Lynne Anderson-Inman. Once the site map is completed, the URL will be more appropriately named and relevant partners and sites updated. This website will be nested within a portal page showcasing and linking CATE’s multiple efforts at educational research and development of 3D Virtual Worlds like Second Life. Like the SaLamander Project itself, the website will continue to evolve beyond the project cycle.

Phase One Project Details

Developing Partnerships

Within a few weeks of receiving funding, an initial project partnership agreement with the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) was achieved. Operated by the California State University System, MERLOT has nearly 20,000 materials, almost 60,000 members, and many professional and academic partner institutions aimed at developing expert-driven, peer reviewed vetting of teaching and learning materials for distance education. With the addition of MERLOT, the project capacity was enhanced for the following reasons: (a) MERLOT has experience developing typologies and expert Communities of Practice; (b) Through MERLOT, Second Life learning materials nominated and vetted through the SaLamander process will be easily available to the largest educational technology user audience in the world related to Learning Objects; and (c) Educators will be find Second Life

materials right alongside 2D learning objects, enabling comparisons. The partnership with MERLOT also led to a partnership with Sun Microsystems, a collaboration to develop the first 3D MERLOT space, using Sun's "Wonderland" open source 3D Virtual World software. Through these partnerships, the SaLamander Project has bloomed into a Community of Practice encompassing users from all 3D Virtual Worlds. This community of practice is called the Center for Learning In Virtual Environments or CLIVE:
<http://teachingcommons.cdl.edu/clive/index.html>.

Creating a Landmark Nominations Tool

In late May, 2007, a rudimentary "landmark nominations tool" was installed at the Center for Advanced Technology in Education's headquarters in Second Life on Eduisland (158, 60, 22). The nominations tool is a slightly modified version of the MERLOT Learning Materials list of descriptors (available from http://www.eduisland.net/salamanderwiki/index.php?title=Review_Template) placed on a virtual "notecard" for educators to use in Second Life when nominating 3D learning objects as learning materials. To disseminate information about the nominations tool, Jonathon Richter (aka "Wainbrave Bernal") presented on the SaLamander Project during the first 24 hour Second Life Best Practices in Education International Conference, May 25th, 2007: <http://slcn.tv/bpe-wainbrave-bernal> (video) <http://www.slideshare.net/wainbrave/the-salamander-project/> (slides). The project was well received and a number of respected, innovative educators in Second Life provided input and support, including Sarah "Intellagirl" Robbins and Chris "Fleep" Collins. Their advice greatly assisted in improving the overall concept and technical design of the project.

Creating the SaLamander HUD

In discussions with members of the Second Life education community on possible and best approaches to achieving project goals, a colleague at CATE suggested that we explore Sloog's Heads Up Display (HUD) (<http://www.sloog.org/>) as a model for developing the SaLamander HUD. It was thought that by using a HUD we could give users the ability to create a personal set of educationally interesting sites AND get appropriate sites nominated to the database to be vetted by the expert community. A meeting with the CEO of Sloog, Daniel Aguilar quickly generated mutual interest and, following another meeting with Second Life programmer Ms. Eloise Pasteur (<http://eloisepasteur.net/>), a contract to develop the SaLamander HUD was developed in July 2007. The HUD debuted in October 2007 and has been adopted by many educators in Second Life because it is easy-to-use and because it enables users to nominate materials to the SaLamander project while also creating their own private page of keywords, or "tags" specific to their own needs and contexts.

Creating the SaLamander Community Wiki

http://www.eduisland.net/salamanderwiki/index.php?title=Main_Page

The SaLamander Community Wiki was designed and developed during the spring and summer of 2007 as a staging area where nominated sites from Second Life could be viewed, evaluated, and rated by participating educators. In keeping with the process already in use by MERLOT for 2D educational materials, we decided to vet nominated Second Life builds and learning objects

before placing the most relevant into the MERLOT search engine. Staff began by integrating the very few nominations received through the initial “notecard nominations tool” (planned to be temporary and used only while the HUD was under development.) Registered users of the SaLamander Wiki, including staff, are able to edit nominated entries and vote on each one (one time per user, per site). Staff also developed procedures to block wiki “spamming”, where people register and produce an orphan page on the wiki that has nothing to do with the site theme.

The SaLamander Community Wiki is essentially a young database, designed to keep track of landmark locations and educationally relevant descriptive notes. With over 100 contributors, the Community of Practice is still building capacity, with an increasingly large number of educators who use the wiki system to contribute, edit, discuss, and vote on the relative value of nominated and described Educational Sites in Second Life. Second Life URLs (Slurls), photos of the sites, descriptions, and potentially, movies taken of portions of each entry are adding value to the overall functionality of the site.

The porting of submitted educational landmarks described through the SaLamander HUD from the Sloog.org database over to the SaLamander Wiki is one connection in the nomination / vetting system that we have identified as an area for development and improvement. It is evident that the reliance on the UO CATE staff to take results from the RSS feed from Sloog.org and place them in the relevant area is too labor intensive and inconsistent for those attempting to use the nomination and vetting system of the wiki. We have thus planned a simple PHP program that will work with the Sloog.org MySQL database to automate that process with a user interface and then propagating it, once tested and verified, to groups of trusted editors in the SaLamander Community. This will decrease the time that relevant educational materials nominated with the SaLamander HUD will sit waiting for addition to the SaLamander Wiki from the Sloog.org database.

Phase Two Project Details

Creating a Typology of 3D Learning Objects

In preparation for the Second Life Community Conference in August 2007, project staff Jonathon Richter, Lynne Anderson-Inman, and Mindy Frisbee co-authored a paper for the meeting’s proceedings detailing the progress on the SaLamander Project. As a core contribution of the paper, the authors envisioned one approach for educators to usefully organize the many learning materials found in Second Life. This initial typology is based on the dimension of “Learner Engagement”, believed to be one of the most salient dimensions of teaching and learning functionality in Second Life. The typology currently comprises eight types of learner engagement relevant to immersive worlds.

- (1) Demonstration
- (2) Experiential
- (3) Collaborative
- (4) Constructive
- (5) Diagnostic
- (6) Problem-solving

- (7) Role play
- (8) Skill-building

Exemplars of Second Life builds and learning objects for each of the above types of engagement can be found on the SaLamander Community Wiki.

In addition, we have explored alternative useful distinctions, based on other dimensions believed to be of importance to teachers, academicians, and instructional designers. These include:

- (1) Learning content area
- (2) Degree of scaffolding
- (3) Technology proficiency requirements
- (4) Assessment methods
- (5) Necessity of prior content knowledge
- (6) External supplements

Visitors to the SaLamander Community Wiki may search the collection of exemplars by any of these typology descriptors

http://www.eduisland.net/salamanderwiki/index.php?title=Main_Page#Learner_Engagement_Types

For more information, please see the paper written by project staff entitled *Critical Engagement of Teachers in Second Life: Progress in the SaLamander Project* and published in the conference proceedings of the 2007 Second Life Community Conference. It is also posted on the SaLamander Project website.

Richter, J., Anderson-Inman, L., & Frisbee, M. (2007). Critical engagement of teachers in Second Life: Progress in the SaLamander Project. In Livingstone, D. & Kemp, J. (Eds.), *Second Life Community Conference 2007 Education Track Proceedings*. Retrieved September 3, 2007, from <http://cis.paisley.ac.uk/livi-ci0/slccedu2007rev2.doc>

Implementing the SaLamander HUD

The SaLamander Head Ups Display (HUD) is a modified version of a HUD created by Sloog to enable Second Life visitors and residents to tag places and people with keywords – creating Second Life URLs (or Slurls) for each location and a personal webpage with “tag clouds” of the keywords used to describe the respective location or person. When people use the SaLamander HUD, it automatically includes the tag word, “salamander” as one of the keywords.

<http://www.sloog.org/tags/salamander> The MERLOT learning descriptor set (found here: <http://www.eduisland.net/salamanderwiki/index.php?title=Descriptors>) is also embedded within the HUD, prompting the user to complete the survey developed to describe 3D virtual learning objects. The Sloog database is configured with an RSS feed to identify tag sets that include the “salamander” tag and push the MERLOT descriptor forms to project staff. SaLamander staff then filter the results, culling those already entered into the wiki and those inappropriate to the project. Each user also has their own personal page of educational landmarks with relevant tags. Due to the professional collaboration and skills of our partners at Sloog, the SaLamander HUD is a decidedly better quality landmark nominations tool than originally envisioned.

The SaLamander HUD is a convenient, useful, and aesthetically pleasing way for educators and designers to locate and create metadata around Learning Materials in a 3D Virtual World. The process adds personal value to the user volunteering such metadata to the community – by creating a collection of all of the materials and places tagged with the HUD (acting as a 3D variety of <http://del.icio.us>) and providing a community within which scholars may discuss and leave their professional opinion as to the relative merits of one 3D Learning Material versus another.

The Center for Learning in Virtual Environments (CLIVE)

In November 2007, MERLOT Managing Director Sorel Reisman connected SaLamander Project Coordinator Jonathon Richter with Sun Microsystems Education Director Kevin Roebuck and a decision was quickly made for Sun Microsystems to support the development of a 3D MERLOT using Sun's Darkstar / Wonderland open source 3D Virtual World technology. Soon thereafter, a serendipitous meeting resulted in a partnership with Immersive Education Director Aaron Walsh. Immersive Education <http://immersivededucation.org/> has a goal complimentary to that of the 3D MERLOT effort – they are computationally creating a common space for users to access vetted, 3D virtual learning materials from their terminals – while the MERLOT effort (with the SaLamander Project acting as the prototype) represents the human community dedicated to tagging, describing, vetting, comparing, and expert review of these 3D virtual learning materials. A recent “Memorandum of Understanding” between Immersive Education and MERLOT cemented a relationship for the common mission to build capacity for educators and others to find, access, and utilize 3D virtual learning materials. The SaLamander Project – through the “proof of concept” funding from the NorthWest Academic Computing Consortium – is the demonstrative exemplar of how this system aims to evolve across each participating virtual 3D world learning community. These new partnerships have culminated in launching the Center for Learning in Virtual Environments (CLIVE), sponsored by MERLOT and unveiled by SaLamander Project Coordinator Jonathon Richter at Sun *Microsystems Worldwide Education and Research Conference* <http://www.sun.com/aboutsun/pr/2007-02/sunflash.20070206.3.xml> .

Media Attention

Since being funded in the Spring of 2007, the work of The Center for Advanced Technology in Education in the virtual world of Second Life has received considerable local media attention, as well as attention from education-focused blogs and listservs around the world. Some examples:

- Oregon Quarterly: <http://www.uoregon.edu/~oq/>
- Eugene Weekly: <http://www.eugeneweekly.com/2007/05/17/coverstory.html>
- Eugene Magazine: <http://www.eugenemagazine.com/>
- EduForge: <http://eduforge.org/blog/blog.php?/archives/343-The-Salamander-Project.html>

- Open SLEDware: http://groups.google.com/group/open-sledware/browse_thread/thread/dd3bdb2b3b63089a/cf7e4eb8ef66beb5
- The Daily Emerald: <http://tinyurl.com/6ky9vt>
- New Media Consortium: <http://sl.nmc.org/2008/01/21/salamander-summary/>
- 2008 EduCAUSE/New Media Consortium's "On The Horizon" Report of emerging technologies. <http://www.nmc.org/pdf/2008-Horizon-Report.pdf>

Dissemination: SaLamander Project Presentations

August 2007:

- Second Life Community Conference Presentation: <http://www.slideshare.net/wainbrave/critical-engagement-of-teachers-in-second-life-progress-on-the-salamander-project/>

November 2007:

- Boise State University course in Second Life (Lisa Dawley's class)
- San Jose State University course in Second Life (Jeremy Kemp's class)

January 2008:

- Anderson-Inman, L. & Richter, J. *Literacies for Learning in 3D Virtual Worlds*. Featured presentation at the Technology, Reading and Learning Diversity (TRLD) Conference in San Francisco. Reviewed by David Warlick: <http://davidwarlick.com/2cents/archives/1339>
- New Media Consortium's "Teacher's Buzz" feature in Second Life: <http://sl.nmc.org/2008/01/21/salamander-summary/>

February 2008:

- "Code4Lib Conference" in Portland, Oregon <http://code4lib.org/>
- Sun Microsystems' "Worldwide Education and Research Conference" <http://www.sun.com/aboutsun/pr/2007-02/sunflash.20070206.3.xml>

March 2008:

- Presentation to the Oregon Community College Association
- Immersive Education presentation in Second Life <http://tinyurl.com/4744fu>

April 2008:

- New Media Consortium’s “2008 Symposium on Mashups”
<http://www.nmc.org/conference-session-proposal/salamander-project> (with link to video of the presentation)
- University of Oregon’s “Computing across the curriculum conference”
<http://libweb.uoregon.edu/cet/workshops/symposium-080411/index.html>
- University of Central Missouri course in Second Life (Bryan Carter’s class)
- 2008 WASC Academic Resource Conference: <http://www.wascarc.org/>
- Clever Zebra virtual business expo: <http://cleverzebra.com/vbusiness/expo>
- New York University’s Digital Communications and Media course in Second Life (Mechthild Schmidt’s class)

May 2008:

- International Society for Technology in Education’s Fireside Chat in Second Life (organized by Kevin Jarrett)

The Future of SaLamander

The project has been so successful that it has garnered a lot of attention and is being used as an exemplar already. Larry Johnson, CEO of the New Media Consortium confided to Jonathon Richter over dinner at the Sun Conference in February that they had used SaLamander as the model for a similar tool to review and vet museum artifacts for collections and holdings. Several business owners and entrepreneurs in Second Life have noted that the SaLamander HUD model may have a number of applications useful for training, employee development, and gathering consumer feedback. Indeed SaLamander is one featured presentation at the Clever Zebra Business Conference in late April 2008, taking place in Second Life.

The SaLamander Project is just now truly reaching the tipping point in its potential for bringing the Second Life Education Community together to share and improve the practice of creating and accessing good learning materials in this new milieu. Largely because of the recent success of this project, Dr. Richter was nominated to be the Chair for the Education Track at the Second Life Community Conference, the official Linden Lab sponsored and approved conference for that virtual world’s users. By providing funds for this project, NWACC has stimulated the curricular uses of the 3D Virtual World of Second Life and spurred, by enabling the development of an exemplar, the creation of a Community of Practice across all virtual worlds for these practices.

In addition to maintaining the momentum launched with NWACC funding and refining the tools described above, we are currently focusing our efforts on two activities. The first is finding additional funding to further expand the SaLamander Educator Community and continue the

process of identifying evaluating 3D learning environments and objects in Second Life. Toward that end we submitted a grant proposal to the MacArthur Foundation's competition entitled Digital Media and Learning.

Below is a brief overview:

The SaLamander Second Life Educational Best Practices Network

PI and Project Director: Jonathon Richter

The SaLamander Project is devoted to developing and enhancing educational capacity in Second Life (SL) by enabling educators to identify, typify, index, compare, rate, and vet "Learning Materials" useful for teaching and learning in this virtual world. To date, the project has developed (a) easy to use in-world tools for nominating Second Life materials, (b) a functioning community wiki for vetting these nominations, (c) an initial typology for categorizing SL nominations based on learner engagement, and (d) collaboration with MERLOT (Multimedia Educational Resources for Learning and Online Teaching) to provide online teachers and learners access to the best of these resources. The proposed project will increase participation from a broader spectrum of the Second Life education community through various events, activities, and communication channels, as well as promote the use of the SaLamander Heads Up Display (HUD) for specific disciplines and learner populations. These activities will in turn showcase the materials identified, indexed, and made available for use through MERLOT's online database. In addition, we propose to anchor the SaLamander Project activities to the development and coordination of a successful inworld conference dedicated to best practices in Second Life teaching and learning. Outcomes include (a) development and hosting of educationally relevant, discipline-specific Second Life events that showcase innovative virtual Learning Materials, (b) expanding functionality and the usefulness of the SaLamander Wiki and MERLOT database, and (c) hosting the Second Annual Second Life Educational Best Practices Conference.

Although this proposal was not funded, we will continue to look for opportunities to leverage the NWACC proof of concept award into a more permanent funding stream. The second activity is continuing to disseminate information about the SaLamander Project and learning in 3D immersive worlds to educators worldwide. We are scheduled to share information about the SaLamander Project at numerous conferences in the upcoming year and we are writing articles for publication that promote this innovative and effective way to identify and evaluate learning opportunities in 3D immersive worlds.

In short, the impact, innovation, feasibility, technology transfer, and outreach efforts produced by the SaLamander Project are both innovative and of exceptional quality. They have involved the collaboration of other institutions, leveraged support from organizations worldwide, and focused on achieving proposed outcomes. While there is much left to do to create a seamless, functional community of practice, the NWACC "proof of concept" funds are judged by the Second Life Education community as money well spent.