

Learning possibilities using Sloodle environment

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ABSTRACT

During the previous decade web-based Virtual Learning Environment (VLE) has become general part of learning and curriculum. One of the most prominent virtual worlds is Second Life, because of dimensionless opportunities that result out of user created content. Many institutions such as universities, colleges and libraries have entered this 3D environment to explore its possibilities. As the Second Life has been used for the curriculum and learning more often, the necessity for the interaction with VLE has been distinct. The interaction of the Second Life with Moodle which is free Open source (VLE) application for production and maintenance the online courses have been done through Sloodle project. Linking Second Life and SCORM through moodle is one of the main task of sloodle developers. This paper shows Sloodle application on the example of one demo course. Also, the possibility of Sloodle application within the subject Computing Graphics has been considered on Cacak Technical College.

Key words: Second Life, moodle, sloodle, scorm

1. Introduction

Virtual learning environments (VLE sometimes known as Course Management Systems, CMS) are increasingly used for various contexts: in the classroom teaching, informal learning, distance learning, e-business, etc. Virtual world is computer-based simulated 3D environment intended for its users to inhabit and interact via avatars. This habitation usually is represented in the form of two or three-dimensional graphical representations of humanoids [1].

A growing number of educators and researchers have tapped into the educational potential of virtual environments. Many of the properties of virtual environments seem

to be conducive for good learning: they tend to be interactive, engaging, safe places for students to learn by doing, and they provide immediate feedback. Second Life is one of the most important and most perspective virtual environment that is used in education.

An important feature for more widespread adoption of virtual worlds as a tool for next generation Technology-Enhanced Learning will be the ability to integrate learning experiences with institutional VLEs and to share data with academic information systems [2]. The main task of this paper is to introduce the open source Sloodle project which presents integration of Second Life and Moodle which is free Open source (VLE). Among

one of the main tasks of sloodle developers is linking Second Life and SCORM through moodle.

The paper includes example of Sloodle demo course with the main characteristics. Also, the possibility of Sloodle application within the subject Computing Graphics has been considered on Cacak Technical College.

2. Second Life

Second Life is a free 3D digital world imagined and created by its Residents. It is a virtual world developed by Linden Lab that is launched on June 23, 2003 and is accessible via the Internet [3]. Universities, colleges and large companies already have their representatives on the Second Life islands [4].

Avatars may take any form the user chooses, animal, vegetable or mineral, including being made to resemble the person whom they represent. Avatars can communicate via local chat or global instant messaging (known as IM). Chatting is used for localized public conversations between two or more avatars, and is visible to any avatar within a given distance. IMs are used for private conversations, either between two avatars, or among the members of a group. Unlike chatting, IM communication does not depend on the participants being within a certain distance of each other.

Because there is the ability to mimic real life in this virtual world, including chatting, developing friendships and working relationships, setting up a home, purchasing land, traveling, etc., there may be some confusion in one's perspective of SL. Initially, this may seem like a game; however, viewing it through the lens of an educator, it is easy to see many possibilities for interactive, engaged learning.

Setting up a free account is easy to do; it requires the selection of a username and a 35 MB download and installation. Once logged in, the user need only choose an avatar and begin participating in a Second Life, starting on Welcome Island. On this island, new

members learn how to function in SL. Members can interact with each other, teleport to virtually anywhere, and even create objects. No purchases are necessary to fully engage and experience SL; however, users can purchase nearly anything imaginable. To find places of interest, a simple search using a keyword will usually result in a long list of possible islands to explore. There are places with larger than life molecules, genetics, and other science concepts, art galleries, historical societies, math tutoring, English as a Second Language, and even a replica of the Sistine Chapel [3].

This is all made possible through open source code and scripting. This environment is truly collaborative, open-ended, and dynamic, which is the type of environment needed to enhance teaching and maximize learning. This highly contextualized, constructivist environment enables most people to gain understanding as they engage in SL exploration.

An example of using SL in education is the Terra Incognita project of the University of Southern Queensland (Australia) [6], which has built a classroom in Second Life, the online virtual world that has attracted millions of users. In addition to supporting lecture-style teaching, Terra Incognita [7] includes the capability for small groups of students who want to work together to easily “break off” from the central classroom before rejoining the entire class. Instructors can “visit” or send messages to any of the breakout groups and can summon them to rejoin the larger group.



Fig. 2. Terra Incognita island [6]

Another interesting experiment in Second Life was the Harvard Law School and Harvard Extension School fall 2006 course called “CyberOne: Law in the Court of Public Opinion.” The course was offered at three levels of participation. First, students enrolled in Harvard Law School were able to attend the class in person. Second, non-law school students could enroll in the class through the Harvard Extension School and could attend lectures, participate in discussions, and interact with faculty members during their office hours within Second Life. And at the third level, any participant in Second Life could review the lectures and other course materials online at no cost. This experiment suggests one way that the social life of Internet-based virtual education can coexist with and extend traditional education [7].



Fig. 3. CyberOne in Second Life

2. Moodle

Moodle is a free and open source e-learning software platform, also known as a Course Management System (CMS), Learning Management System (LMS), or Virtual Learning Environment (VLE). It has a significant user base with 49,256 registered sites with 28,177,443 users in 2,571,855 courses (as of February, 2009) [8].

Moodle will run on FreeBSD, Linux, Mac OS X, Solaris, Windows and many others. It's compatible with a huge range of databases through ADODB integration. There's a whole host of authentication and enrollment mechanisms, including LDAP and arbitrary external databases. Moodle will allow teachers to integrate content in a

wide range of different formats, including SCORM, Flash, MP3s and RSS feeds.

It is a free web application that educators can use to create effective online learning sites [9]. The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment, which is mostly useful to programmers and education theorists [10]. It's also a verb that describes the process of lazily meandering through something, doing things as it occurs to you to do them, an enjoyable tinkering that often leads to insight and creativity. As such it applies both to the way Moodle was developed, and to the way a student or teacher might approach studying or teaching an online course.

Moodle is designed to help educators create online courses with opportunities for rich interaction. Its open source license and modular design means that people can develop additional functionality. Development is undertaken by a globally diffused network of commercial and non-commercial users [11].

The focus of the Moodle project is always on giving educators the best tools to manage and promote learning. It provides numerous opportunities in the organization and execution of online courses. Some of the most important features are: creating a large number of courses in one system, planning activities, management of users, user roles and user groups on the course, then work with existing files and educational contents, evaluation of the user's knowledge, tracking user's activity, many tools for communication and collaboration among users.

4. Sloodle

The Sloodle project is an open Source project, which aims to bring together the features of web-based Learning Management Systems and virtual world environments such as Second Life. It was funded by the Eduserve Foundation (UK) in 2007. [12].

SLOODLE is acronym for Simulation Linked Object Oriented Dynamic Learning Environment and it is free plug-in for the popular Open Source web-based virtual learning environment Moodle.

The project is developing a set of free, full-perm objects in Second Life that transport content back and forth from Moodle. It can also help teachers and learners to record activities and achieve learning objectives in Second Life more effectively by including both virtual world activities and web-based content as part of the delivery strategy. Some of the Sloodle developed key features are:

- Web-intercom. A chat-room that brings Moodle chat room and Second Life chats together. Students can participate in chats in Second Life using the accessible Moodle chat room. Discussions can be archived securely in a Moodle database.

- Registration booth which is identity management for Second Life and Moodle. It links students' avatars to their Moodle user accounts.

- Quiz tool and 3D Drop Box. It allows taking quiz in Second Life and grading in Moodle. Teacher can set quizzes or 3D modeling tasks in an engaging 3D environment and reviews grades quickly and easily in the standard Moodle grade book.

- Choice tool which allows students to vote (and see results) in Second Life as well as in Moodle.

- Multi-function SLOODLE Toolbar. It enhances the Second Life user interface. Sloodle toolbar adds blogging and gesturing tools to the SL interface via a HUD.



Fig. 5. Sloodle Sound and Music Demo course [8]

5. Scorm compliant Sloodle objects

Sharable Content Object Reference Model (SCORM) is a collection of standards and specifications for web-based e-learning. It defines communications between client side content and a host system called the run-time environment (commonly a function of a learning management system). SCORM also defines how content may be packaged into a transferable ZIP file.

To the extent that Sloodle is working with Moodle content, and Moodle content is already SCORM-compliant, Sloodle already works with SCORM. The only problem is in the interaction between scorm and SL, which needs customization. In January 11th, 2009 Sloodle developers started to link Second Life to a SCORM reusable learning object and this development is still in progress.

6. Example of Sloodle course

Sound and Music Demo Course [13] which can be used as a support for teaching and learning in Second Life through the improved integration with the Moodle has been presented in this paper. The authors and teachers of the course are Peter Bloomsfield and Daniel Livingstone who are studying the development of Sloodle at the same time. The course has been designed so that the basic facts about sound and music can be learned.

Also, certain insight into the way that Sloodle can help learning during the course has been planned by the authors.

Connecting of the user to the avatar is done in the initial part. Thus, the user has inscribed avatar on his Moodle account.



Fig. 5. Connecting user to avatar

One of Sloodle tools which are used in demo course is the *Distributor*. Using this tool the tutor collects useful objects for students and puts them into the automat which students use for taking them over. Sloodle.org toolbar is one of the objects which should inevitably be taken over because it is used later within the lesson.



Fig. 6 Avatar beside the objects distributors

Figure 7 shows web-intercom and dictionary which can be on and off. In order to include avatar into discussion, it is necessary to click on the interphone and switch it on. The permission for recording discussion is obtained by clicking on the interphone again. Dictionary which is presented as a book enables students to search for specific inputs.



Fig. 7. Web-Intercom and dictionary

Simultaneously, Moodle chat room can be opened within the separate window in whose centre there is a link to a very chat room. When it is opened and the interphone is switched on, students can send messages from SL to Moodle and vice versa. Moodle can check previous recordings of chat sessions.

Sloodle.org Toolbar 1.4. is necessary in order to present content to blog. It is necessary to click on toolbar from the inventory and choose the option Wear. Thus, the toolbar will appear in the central upper part of the screen. During the first activation, toolbar is adjusted so that it can be connected to Moodle.

Precise instructions for connecting and authentication have been listed. The adjustment is finished afterwards and the text "READY" appears in the toolbar. After that the content of the blog can be posted.



Fig. 8 Using the Classroom Gestures options

Fig. 9. shows answers to the quiz. In order to activate musical quiz you should sit on a note and the first question appears afterwards. The quiz is presented as a dialogue prompt. Choosing on of the offered answers, the note rises or stays at the same place depending on the fact whether the answer is correct or not.



Fig. 9. Musical quiz

When visiting HUD quiz (fig. 10) the copy of a quiz is taken over at the entrance and the option WEAR is chosen from the inventory. Within the quiz it is possible to test various objects around the avatar and in this case these are various musical instruments as well as the notebook.

When the users have been certain that they have learned enough, they can choose tab quiz and answer the questions. The results of the quiz can be seen on quiz HUD server while the code for settling on Moodle has not been finished yet. There are also types of questions such as “Explore” which can be answered by clicking on the objects in 3 D environment.



Fig. 10 Quiz HUD

7. Possibility of Sloodle application within the subject Computing Graphics

Regarding the educational possibilities of Sloodle on the example of previously demonstrated demo course, the possibility of its application within the subject Computing Graphics on Technical College Cacak has been noticed.

Within the subject Computing graphics students are expected to solve the problem of visualization of three-dimensional models or objects. 3D models by which the problem of visualization is solved up to a point are designed for the students who do not have well developed sense of spatial abilities. However, models designing are quite expensive and therefore it is not efficient enough.

The problem can be overcome by introducing Sloodle and its adjustments to the needs of Computing Graphics. The course would contain several groups of themes according to previously described Musical Demo Course. Students could check the environment and creating of 3D models and later answer the quiz where the acquired knowledge could be checked. In discussions organized “by the fire” students could exchange their and conclusions referring to the models designed.

8. Conclusion

In order to be accepted the possibilities should be made for the virtual environment to exchange the data and to be interoperable with the existing surroundings based on the Web.

Sloodle represents the first try of such integration, connecting Second Life and Moodle. As an open source project, Sloodle enables all the interested researches to take part in its further development which contains even converting of two dimensional contents into three-dimensional virtual world, and developing scorm compliant sloodle objects.

Basic features of Sloodle course have been tested on an example of Sound and Music Demo Course. It appears that the course can be created in teaching need for the subject Computing Graphics on Technical College.

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