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A working successor of learning management systems: SLOODLE

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Abstract

Virtual Learning Environments (VLE) have been used in education for a number of years to deliver and manage electronic learning sources. Learning Management systems (LMS), also known as VLE, have lots of functions in the process of learning activities as well as the course administration and tracking, but they still have some limitations which decrease the effectiveness of learning. With their functions of giving the opportunity of involving in the process of constructing meaning from experiences to students, 3D virtual environments have emerged to remediate such LMS problems. SLOODLE is a dynamic learning environment which links 3D virtual environment, Second Life, to an open source LMS, MOODLE(). The aim of this study is to outline weaknesses of traditional LMSs and explore the features of 3D virtual learning environment, SLOODLE, as a potential solution.

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1. Introduction

Learning Management System (LMS), also known as Virtual Learning Environment (VLE), is an e-learning infrastructure with the functions of delivering the courses, supporting collaboration, assessing the learner performance, recording learner data, and generating reports to maximize the effectiveness of the entire learning organization. While LMSs perform most of these functions, limitations still exist: (1) being more course centric (less student-centered); (2) having restricted interaction and activities; (3) being just one solution to be competent; and (4) less control to develop independent learning skills. With these weaknesses, LMSs limit the students to deal with only specified activities and to have virtually no control over the conditions in which activities occur. LMSs with their standard tools contribute more to the content not to the process of learning, specifically experiential learning, requiring advanced thinking skills.

Such missing functions of the LMSs have been overcome through the contribution of the tools that exist in 3D virtual environments. Although these 3D virtual components have not been designed for educational purposes, they have the potential of migrating from teacher-centered education to student-centered education. Learning process can be directed by implementing learner-centered pedagogies which promote active, constructivist or problem based

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learning with the opportunities of the virtual 3D tools. Hence, students have the opportunity to be involved in the process of constructing meaning from experiences by navigating in these virtual environments. This study revisits the limitations of the LMSs and reviews the functions of Simulation Linked Object Oriented Dynamic Learning Environment, SLOODLE, to address such weaknesses in the teaching and learning process in the LMSs.

2. Learning Management Systems Overview

LMSs have been accepted the indispensable tools of e-learning in the past decade. Whether focusing on distance education or classroom-based education, most of the universities are using LMSs to support and improve learning teaching processes (Dalsgaard, 2006). LMSs typically offer affordances beyond simple document repositories, by featuring discussion forums, online chat rooms, grade books, and the ability to give automatically marked tests such as multiple choice questionnaires and to track students' performance (Jones, 2009; Kemp & Livingstone, 2006).

LMSs are often viewed as being the starting point (or critical component) of any e-learning or blended learning program in terms of pedagogical impact and institutional resource consumption (Morgan, 2003; Siemens, 2004). However, the main issue is that LMS vendors are attempting to position their tools as the center-point for e-learning and removing control from the instructors and learners (Siemens, 2004). This attempt makes LMS related activities more course centric. Students are restricted to specified activities on predetermined subject matter, for limited time, and have no enough control on the parts of the conditions of their learning. However, learning itself is not a process to be managed. Students should manage their own learning. The more students take part in the process of learning and take the responsibility of their learning, the more learning will be permanent and meaningful. Empowering students with tools they can use for different purposes and use independently supports self-governed and problem-based activities (Dalsgaard, 2006). With their current limited tools, traditional LMSs also restrict the teachers to design more student-centered courses and activities with dynamic content navigation (Siemens, 2004).

Lack of interaction (student-content, student-student, and student-teacher) is another weakness to be considered in LMSs. Since LMSs emerged as document repositories, interactive learning support is not being reached as expected (Kemp & Livingstone, 2006). However, it is certain that interaction and connections are viewed as the most valuable aspect of learning, and social media may address such learning aspects since collaboration and social construction of knowledge are key components of the dynamic seen in social media (Siemens, 2004). 3D virtual environment like Second Life (SL), as well as blogs and wikis are good illustrations of such social media.

LMS-centered approach is not really efficient and provides multiple solutions in the learning process. Although LMS functions well in the delivery of the content, it doesn't perform well for informal learning, performance support and knowledge management (Siemens, 2004).

Developing learners' independent learning skills is not really possible with traditional LMS components and functions. The LMSs' existing tools don't allow students to take responsibility of their learning and become independent learners. This course centric approach of LMSs does not enable students to set their own goals and deadlines, organize themselves and their work, evaluate their use of time and write collaboratively with peers and even publish written and multimedia products on web pages. And, students have to do the activities in the predetermined time with the predetermined sequencing in the system (Illinois Online Network, 2010; The Quality Improvement Agency for Lifelong Learning, 2008). However, as Hughes (2001) addressed in his independent learning approach, empowering students to take responsibility of their own learning and through this to further develop their academic and personal potential is an essential part of the process developing students' self-awareness and self-confidence as autonomous life-long learners.

Accordingly, 3D virtual environments emerged, but they first have not been designed or built specifically for teaching and learning. Many supportive elements for learning and teaching commonly found in VLEs are completely absent in these 3D environments (Kemp & Livingstone, 2008). However, they have some benefits to enhance the meaningful learning together with the integrated LMSs.

3. Sloodle

Virtual environments provide a new range of educational opportunity. The nature of these environments is generative, allowing users not only to navigate and interact with a pre-existing 3D environment, but also to extend that environment by creating objects of their own (Kluge & Riley, 2008). In SL as one of these virtual environments,

the users are embodied with their avatars. They are allowed to fly, navigate, create 3D objects, socialize with others using the synchronous communication tools and explore all the means of this 3D environment that can also be used in education to provide collaboration and interaction between content and students. Some of the educational activities in SL through interactions with content and persons are: design and build immersive context; role-play arts, history, health, and business; collaborate on shared tasks; and visualize 3D data and multifaceted representations of images or text (Molka-Danielsen, 2009).

Both LMSs and SL have necessary functions for learning not exist in the other. Kemp and Livingstone (2006) investigated the needs and desires on the use of these two systems together by conducting a survey to educators, and found this integrated utilization useful. A good model of this integration is Simulation Linked Object Oriented Dynamic Learning Environment (SLOODLE), which links the Open Source LMS, MOODLE, with SL. The following is the list to explain in what ways SLOODLE integrates these two different systems:

1. Web-intercom. A chat-room that brings MOODLE chat-room and Second Life one together. Students can participate in chat sessions in SL using the accessible MOODLE chat-room. Discussions can be archived securely in a MOODLE database. This serves two key functions. First, it provides access to a discussion in SL for users who for some reason are unable to log into SL itself. Second, it enables to archive and store discussions, and to keep this archive in a secure password-protected environment (Livingstone & Kemp, 2008). This feature is really useful to enhance the communication between learners who are involved in the activities within both SL and Moodle. The more students communicate, the more they share their opinions and experiences (cause second life performs well for experiential learning) the more interaction will occur between students and teacher. Also it gives another possibility to work collaboratively to the students.
2. Registration booth. This tool links students' avatars to their MOODLE user accounts. In order to make SLOODLE components to work, it is necessary to reliably match avatars with their corresponding MOODLE user accounts (Kemp, Livingstone & Bloomfield, 2009). Students may tend to have different names for their avatars, which can cause problems in managing the class and activities. When a user clicks on 3D kiosk, she/he receives a prompt taking them to an avatar registration page on her/his institution's MOODLE VLE (Livingstone, Kemp & Edgar, 2008). This tool can be the infrastructure for the other tools of SLOODLE, which enables teachers to track students, and record their progress as well as the management.
3. Quiz tool and 3D Drop Box. This tool which stands for assessment in SL and grade book in MOODLE sets quizzes or modeling tasks in an engaging 3D environment. It also reviews grades quickly and easily in the standard MOODLE grade book. This allows students to submit 3D projects created in SL to a virtual drop-box. Instructors can review submission details in MOODLE, collect coursework from the drop-box in SL at their convenience and enter grades and provide feedback as normal in MOODLE (Livingstone, Kemp & Edgar, 2008). While having student centered activities or applying constructivist approach in such courses, this tool can work well in the integration of two systems. Particularly use of quiz tool in project based learning activities will help students to work (individually or in groups) together, construct the meaning and improve their feeling of responsibility to their learning process.
4. Multi-function Toolbar. This tool enhances the SL user interface. It uses a range of classroom gestures, quickly gets a list of the MOODLE user names of the avatars around or writes notes directly into MOODLE blog from SL. Enabling blogging to MOODLE within SL can also be used as a tool to aid reflection and support learning (Livingstone, Kemp & Edgar, 2008). Allowing users to reflect on their blogs can develop the independent learning skills of learners as well as interaction between peers and constructing the meaning.
5. Presenter. This tool quickly authors SL presentations of slides and/or web pages on MOODLE. It presents slides or pages in SL without having go-through and lengthy processes to convert or upload images. Since the students have the opportunity to make presentations in SL, it's another benefit of using SLOODLE that it allows to share the work done in SL with all the MOODLE users. Especially when a student makes a presentation in SL that will be necessary to share their work with the peers and to get their reflections for their learning.
6. QuizChair. This tool lets students attempt a standard MOODLE multiple-choice quiz inside SL, with the answers being stored on MOODLE (Kemp, Livingstone & Bloomfield, 2009).

To summarize, SLOODLE can enhance the success of these activities by reflecting with the blogs and providing communication between learners. But some of these tools can be used to support learning while the rest of them are

used to support the management issues. However, integration of VLE with LMS gives the flexibility to the teachers and students in developing learning activities.

4. Conclusion

Since current LMSs are restricted for teacher and students to develop the learning activities based on experience, communication and collaboration, all their existing features don't make them ideal learning environments. On the other hand, 3D virtual environments are captivating and useful tool for e-learning and have capabilities to improve deep, active and collaborative learning, but they may not be a solution to the problems that exist within LMSs. They still lack some features to provide interaction such as identity management, blog recording, quizzes and communication.

Nevertheless, integrating these two environments (LMS and 3D) is not the only way to enhance the learning. Although this combination can improve students' independent learning skills, it's not adequate to direct students in full with the existing opportunities. A lot of work should be done to have the ideal VLE using the tools of 3D environments with the right pedagogy.

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