

## **Open Source Learning Management Systems**

### Introduction/What Is the ET?

Learning Management Systems (LMS) have become mission critical services for colleges and universities. These systems have a wide variety of features that support teaching and learning, including synchronous and asynchronous communication and collaboration tools, online assessments and grading, and tracking student progress through their course. They are used by universities, corporations, and industry to deliver training resources and/or course work to thousands of users. In a university setting, it is quite common for the LMS to be gateway for all faculty course deployment. However, due to circumstances that a university cannot control, that does not mean the course is completely activated and used. It is possible that it is simply a course shell with a link to “home grown” websites containing years of work from the faculty. They may just be content to have some type of technological representation. Others believe in the online systems and fully launch their courses.

Over the past ten years the number of commercial LMS's have declined from several dozen to just a few. Blackboard, Inc., the largest of these commercial providers, has acquired a number of rival systems, including WebCT and Angel, and has alleged patent infringement against another competitor, Desire2Learn. This has caused concern in higher education that the commercial LMS marketplace may become monopolistic. Moreover, proprietary systems like Blackboard do not allow users to modify or access the database, making it difficult to produce targeted usage reporting, integrate the system with other campus technologies such as ERP's, or to customize the system for a particular campus environment.

In response to this challenge, a number of campuses have worked together to develop open source LMS's. Two of the most widely used open source LMS's are Sakai and Moodle®. Both were launched in the early 2000's because of a need for customization, a different design, a comprehensive and open course development page, and for budgetary issues. Sakai was initially a collaboration of several institutions, including Indiana University, MIT, and Stanford, and now has over 150 installations. According to Moodle.org (2009), Moodle supports over 1 million courses and 30 million users, Moodle developers focus on active learning and the contribution of students to the course through blogs and wikis.

Open source initiatives can frighten even experienced technology users because of the thoughts of the support involved and the customization. IT organizations have often taken a “wait and see” attitude to these open source initiatives, because of the unknown factors. The perception of many CIO's has been that the cost of developing

and customizing an open source solution outweighed the potential savings in licensing costs. Moreover, some CIO's wanted the assurance of commercial support for this mission critical service and were concerned that these platforms did not have the critical mass of users necessary to ensure they would continue to develop. Open source LMS's have now evolved to the point where a campus can implement these solutions "out of the box" with little or no need to develop or customize. Open source solutions have enough users to ensure continued development and support, and there are a number of vendors who provide accountable support for open source LMS's, such as rSmart for Sakai and Moodle.com for Moodle as well as Moodlerooms. These vendors supply everything from training to storage space for the software and data.

Moodle makes things easy by allowing building blocks or modules to be used "inside" the software application. There are several modules that can be downloaded for free and are built by Moodle developers. These developers are part of a community and do not expect much in return except for feedback on the success of their modules or assistance in programming if changes are necessary.

The following are some of the modules users input into Moodle that provide a robust LMS solution:

### **Activities**

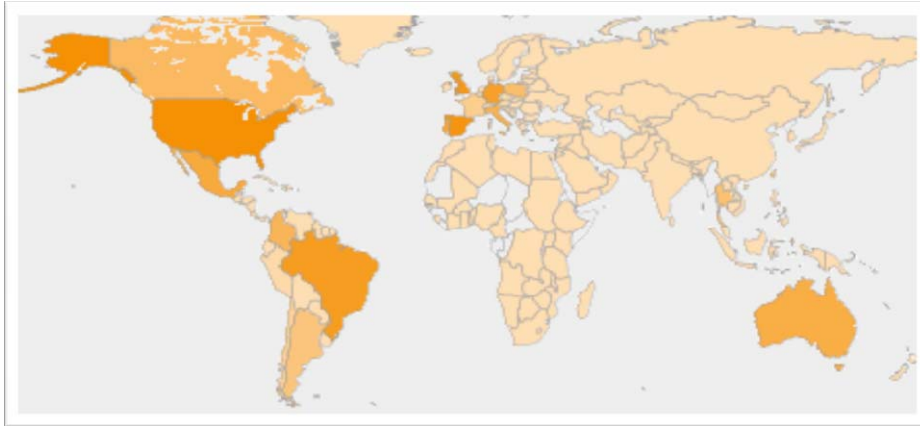
- Assignment
- Chat
- Choice
- Database
- Feedback
- Forum
- Glossary
- Lesson
- Podcast
- Questionnaire
- Quiz
- Moodle Modules
- Wiki
- Workshop

### **Resources**

- Book
- Label
- Text Page
- Web Page
- Link to File
- Display Directory

- IMS Content Package
- Sloodle Map

Moodle is used throughout the world and some of the countries are listed below along with their registered users.



Country	Registrations
United States	8,104
Spain	3,695
United Kingdom	2,890
Brazil	2,680
Germany	2,103
Portugal	1,783
Mexico	1,332
Australia	1,076
Italy	978
Colombia	963

Sakai is also prominent and has resources that can be customized. It includes the following for users:

### **Sakai Worksite Tools**

[Announcements](#)

[Assignments](#)

[Calendar Summary](#)

[Chat Room](#)

[Drop Box](#)

[E-mail Archive](#)

[Forums](#)

[Gradebook](#)

[Messages](#)

[News](#)

[Post 'Em](#)

[Presentation](#)

[Resources](#)

[Syllabus](#)

[Tests & Quizzes](#)

[Web Content](#)

[Wiki](#)



## Why Is the ET Important to Higher Ed?

Open Source develops community and foster innovation with many contributors. The open source software packages are considered innovative because of the many tools that can be used and the immediacy with which changes can be made. Are these changes good or bad? Some institutions may not see them as necessary because they do not change LMS's, or upgrade them as often as other universities. However, as budgets shrink, universities are looking for a new way of doing business. The processes which have been followed in the past may not survive in the future. Open source solutions give the academic community options in adding functionality on the fly. Some institutions look for similarity in coursework and other allow faculty freedom in their design and content instead of "cookie cutter" courses. Open source solutions provide the freedom to do both, can be updated on the academic schedule and not the vendor schedule, and support guest browsing access or unlimited user access.

## How Is the ET Evolving?

The world revolves so quickly now as everyone knows and technology is a catalyst in making things change constantly. Releases of new products come faster and faster, thus making it difficult to keep pace. Anything that makes life easier is a blessing in disguise. So in discussing the capabilities of a platform, it is very important that the platform integrate with university systems such as for single sign-on and student records. The Moodle platform takes all of that into consideration with a little additional programming and some work with various departments on your campus. Moodle is moving to version 2.0 to add improvements and stability.

There is another component though that adds a "virtual" touch to Moodle, moving it into the 3-d virtual world environment. This combines synchronous interaction with a virtual world, Second Life<sup>®</sup>. Sloodle is the name and integration is the game!

There are several features offered by Sloodle (Simulation Linked Object Oriented Dynamic Learning Environment). It is an open source project that integrates blogging, quizzes, and has a multi-function toolbar to make this integration occur. There are other tools being constructed with this project which are supported by the Carnegie Trust for the Universities of Scotland. Two worlds brought together to make one application. An almost seamless environment where there is constant interaction with two different products. This is the evolution of open source and what can be accomplished as individuals pull together to realize the importance of integration.



With an avatar, inside Second Life, there is now the capability to blog, quiz, chat, register for the course, have a vending machine full of resourceful tools, and see most or all of this immediately within the Moodle application. Providing an enriched synchronous environment with a place to hold course content and there is more on the horizon.



## Conclusion

Whether institutions look at Moodle, Sakai or other open source products, the main element to remember is there are choices which offer a road to potential cost savings. Support costs are reported to fluctuate depending on the institutions commitment and layers of support such as 24/7 technical support and server administration. However, this is not deterring the move toward open source products as viable solutions to provide a rigorous LMS. If not moving toward the solution directly, there are certainly studies and thoughts going through the minds of most technologists and upper administration to decide what is best for their institution.