

Designing and Developing an e-Learning Platform for Library & Information Science Students of University of Rajasthan: A Study

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Abstract

*With the advent of information and communication technology (ICT), educational institutions all over the World are leveraging ICT to improve the quality of teaching, thereby increasing the level of student achievement. This paper examines the possibilities of applying open source learning management systems (LMS) in the teaching and learning process of Department of Library & Information Science, University of Rajasthan, Jaipur. Further, in this paper the role of Moodle LMS as a tool in delivering effective teaching and learning is exhaustively discussed. Through this e-learning platform, the department can provide 24*7 access to learning materials on BLISc and MLISc courses as well as UGC-NET to the students. Through this paper, the authors propose this prototypical framework that may apply to other Post Graduate Departments of University of Rajasthan to adopt innovative pedagogical practice using LMS.*

Keywords: Online Learning, E-Learning, Learning Management System, Virtual Learning Environment, Technology-based Learning, Open Source Software, Moodle

1. Introduction

In the last couple of decades, we have witnessed a phenomenal development of new technologies, particularly information and communication technologies (ICT). Corollary, this led to the rise of information or knowledge society that phenomenally changing the way we live and work together, including the teaching and learning process. To keep pace with these developments, educational institutions all over the World, let alone India are leveraging ICT to improve the quality of teaching, thereby increasing the level of student achievement. There is no gainsaying the fact that traditional pedagogy through books, figures, blackboard and chalk is not suffice, however, emergence of ICT has given a fresh impetus to the traditional face-to-face teaching and learning process with various virtual or electronic learning

(e-learning) systems that helps prepare the students for in-depth in interactive instructional environments, thereby enhancing their learning opportunities in both online and traditional pedagogy. Due to immense pedagogical benefits of e-learning, most of the higher education institutions are using it as a tool for supporting their face-to-face and traditional learning.

Recently, e-learning platforms have become robust, sophisticated and user-friendly with immense capabilities to improve the teaching learning process. There are various proprietary (such as Blackboard, WebCT, TopClass) as well as open source e-learning platforms (such as Moodle, Sakai, ATutor) available to implement e-learning platform. Since the proprietary or commercial learning management systems are very expensive to buy their license, so it is not economically feasible for the institutes of Third World countries to buy these software. To leapfrog these technological advancement, open source soft-



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ware (OSS) offers the best solution. There are many e-learning OSS available, which are designed to address all facilities of proprietary software.

The most robust e-learning OSS is Moodle (modular object oriented dynamic learning environment), which is widely known as learning management systems (LMSs). It is the most used e-learning OSS by the most of universities and educational institutes around the world to develop a professional and more interactive environment. In India most of premier educational institutions like Indian Institute of Management, Indian Institute of Technology, central universities have started using Moodle since it is inexpensive tool for creating professional educational environment.

The main objective of this paper is to examine the possibilities of applying open source learning management systems (LMS) in the teaching and learning process of Department of Library & Information Science, University of Rajasthan, Jaipur. Further, in this paper the role of Moodle LMS as a tool in delivering effective teaching and learning is exhaustively discussed.

2. What is e-Learning?

Now a days the use of ICT in teaching learning process is increasingly commonplace; and it has been gaining wide popularity and acceptance during the last decade. There are many nomenclatures used to describe the technology-based instruction and management systems such as e-learning, Learning Management Systems (LMS), Course Management System (CMS) and Virtual Learning Environment (VLE). The term e-learning has been a generic term in the academic parlance. The American Society for Training and Development (ASTD), the world biggest professional body for learning and develop-

ment defined e-learning as anything that is delivered, enabled or mediated by information communication technology exclusively for learning purpose. It includes online learning, web-based learning and computer-based learning.

In simple term e-learning can be defined as an approach to learning and development: a collection of learning methods using information communication technology, thereby enabling distribute and enhance learning (Fee, 2009). E-learning system or LMS is powerful tool that can help facilitate more effective learning and provide an opportunity to students for collaboration, interaction and participation.

Through the LMS, the students can access course/ learning material in all supported formats (text, image, sound); and interact with their teachers and peers via chat, forums, direct message, video conference etc. Further, it also helps the students to hone learning, critical thinking, self-confidence, peer-learning and knowledge management. LMS has immense pedagogical benefits for student learning.

There are different types LMS: proprietary and open source LMS. Blackboard, WebCT and TopClass are examples of proprietary category whereas Moodle, ATutor, Sakai are open source LMS.

2.1 Moodle Platform

Moodle (Modular Object-Oriented Dynamic Learning Environment), developed by Martin Dougiamas, is one the most famous LMS around the world. In the academic arena, Moodle is the most sought media tool that is widely used across most universities to develop interactive educational environment. It is user-friendly and easy to customize open source LMS. Though, it was originally developed for Linux OS, now it is compatible with various Windows and

Macs OSs. Moodle supports myriads of features; and there are as many as 14 different types of features that can be found in standard Moodle platform, when editing option is turned on. All these features facilitate the students to interact with other

students or teachers. Features supported by Moodle can be categorized into three types: interactive features, social features and resources. All these features (Table 1) can be used to support teaching and learning process.

Table 1: Features of Moodle e-Elearning Platform

Interactive Features	Assignments	Help teachers to grade and give comments on assignments submitted by students
	Lesson	Allows teachers for delivering content in flexible ways
	Quiz	Allows teachers to set quiz tests, which may be automatically marked and correct answers can be displayed
	SCORM	Allows teachers to include SCORM packages as course content
	Choice	Allow teachers asks a question to students, specifying multiple choices
	Database	Allows teachers to create, maintain and search database
	External tool	Allows students to interact with learning resources and activities available on other websites.
Social Features	Feedback	Allows to create and conduct surveys to get feedback
	Chat	Allows students to have a real-time synchronous discussion with fellow students as well as teachers
	Forum	Allows students/teachers to have asynchronous discussions
	Glossary	Allows to create and maintain a list of definitions of the terms
	Survey	Allows to create survey instrument for gathering data from students, thereby helping teachers learn/reflect about their class/teaching
	Wiki	Allows to create a collection of web pages that permits anyone to add to or edit
	Workshop	Allows peer assessment
Resources	Book	Multi-page resources with a book-like format. Teachers can export their Books as IMS CP (admin must allow teacher role to export IMS)
	File	Allows to upload a text, image, audio/video file
	Folder	Allow to create folder to organize files
	IMS content package	Allows to add static material from other sources in compatible IMS content package format
	Label	Allows to use words or an image to separate resources and activities in a topic sections
	Page	Allows teachers to create HTML pages for the students
	URL	Allows teachers to give link to other websites i.e. inflibnet.ac.in/epgpathshala.inflibnet.ac.in etc.

Source: www.moodle.org

3. Aim and Objectives of the Study

- ▶▶ To provide interactive instructional environment to students;
- ▶▶ To enhance the learning opportunities of students in both traditional and online pedagogy;
- ▶▶ To develop virtual learning environment using open source LMS;
- ▶▶ To provide 24*7 'anytime' and 'anywhere' access to course contents to the students.
- ▶▶ To provide collection of learning methods/resources using ICT

4. Methodology

This paper examines the possibilities of applying open source software (OSS) in the teaching and learning process in the Department of Library & Information Science (DLISc), University of Rajasthan, Jaipur. Moodle (Modular Object-Oriented Dynamic Learning) was downloaded from www.moodle.org and installed in a local server. Further, home page of Moodle LMS has been customized and personalized. The course contents of MLISc, BLISc and UGC-NET have been created and students of MLISc and BLISc have also been enrolled. Several orientation programme would be conducted for the students to provide hands-on training on how to use the e-learning platform (participate in quiz, submit assignment, collaboration). Training programme would also be conducted for faculties to help learn how to create, upload and manage their courses.

5. Moodle @ DLISc, University of Rajasthan

Moodle e-learning platform is developed and adopted by the Department of Library & Information Science, University of Rajasthan

(Moodle@DLISc) to help the course teachers to create quality online courses, thereby managing the learning outcomes of students. With the help of computers/laptops/Ipad/smart phone, the students can access the Moodle@DLISc and participate in the courses. Moodle@DLISc offers many features, namely chat, wiki, forums, feedback, survey, quiz, lesson, assignment (Table 1) that can be used in the teaching and learning process.

5.1 Create Categories and Courses

Moodle@DLISc can be accessed by providing user ID and password. After supplying the log in password, the users will be landed in home page of the website.

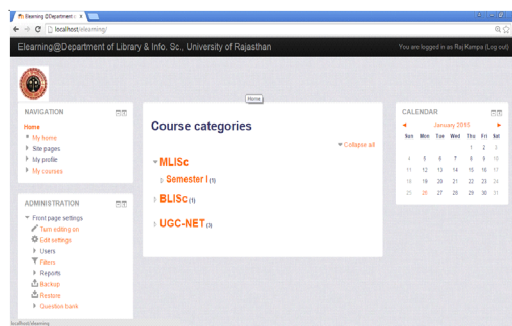


Figure 1: Home page

Once log in to the e-learning system, the course creator/teacher/administrator can create course category and course by *turning edition on* option. Moodle has various options for course formats like LAMS (Learning Activity Management System), SCORN (Sharable Content Object Reference Model), social format, topic format and weekly format. Since the DLISc has MLISc and BLISc programmes, two course categories i.e. MLISc and BLISc have been created. Besides, UGC-NET course category has also been created. Each course category has sub-categories according to their semesters (Figure 1).

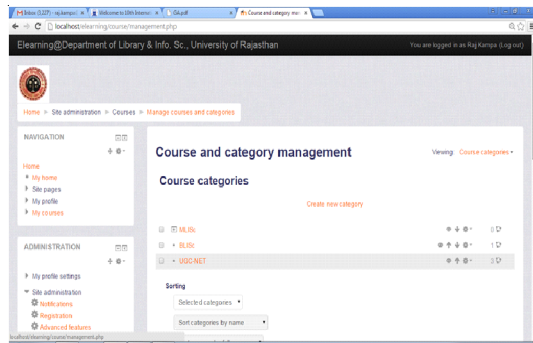


Figure 2: Creating Category and Courses

5.2 Adding Teachers and Students

Teachers and students can be added to Moodle @DLISc platform by using administrative block. All the students of MLISc and BLISc have been added and they are given unique log in ID and password to access the e-learning platform. Likewise teachers have been also added and assigned as teachers of their respective courses (Figure 2).

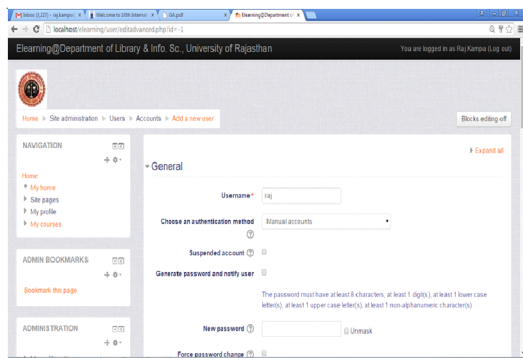


Figure :3 Adding Quiz

5.3 Adding Course Materials

Static course materials can be added that the student reads, but student does not interact with. All the course materials: syllabus, old question papers, PowerPoint presentation, lecture notes and related reading materials have been uploaded in the e-learning platform to facilitate 24*7 access to the students.

5.4 Adding Quiz

Quiz creation is quite easy and simple in Moodle. Rich text HTML editor is available in each quiz question; it helps to add image file, text file, movie file etc (Figure 3). Quiz is the major activities to assess the understanding of the students. With implementation of Moodle@DLISc, the student can participate in the quiz online and get their marks instantly. Consequently, their grade and evaluation procedure will be very transparent. As the UGC-NET is consist of objective type questions, quiz module will be catalyst in preparing the students for UGC-NET.

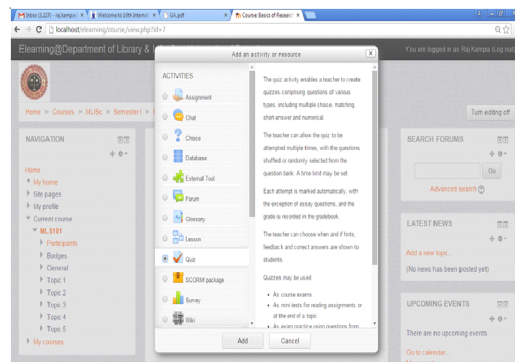


Figure 4: Adding Teachers and Students

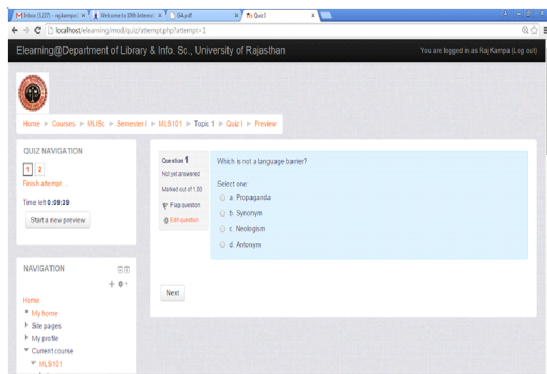


Figure 5: Quiz Questions

5.5 Adding Audio/Video Resources

Moodle@DLISc allows uploading to audio, video and other multimedia into the course by using the

option add a video. Similarly, video/audio available in external websites like Youtube can also be embedded. Video lecture on library science by Consortium Education Communication, UGC, which is available on www.youtube.com, can be embedded using iFrame code.



Figure :6

5.6 Integration of e-PGpathshala

E-PGpathshala, an initiative of UGC, can also be integrated with Moodle@DLISc, so that the students can access quality learning materials on library and information science. It will provide the native source link of library and information science textbook materials available in e-PGpathshala.

5.7 Accessing Moodle@DLISc

With the help of computers/laptops/lpad/smart phone, the students can access the Moodle@DLISc platform. For the convenient access of the platform, light weight website for viewing in smart phone with clean layout has been designed. Further, the students can install Moodle mobile apps in their smart phone that enables convenient access to Moodle@DLISc platform to download course material and participate in quiz as well.

6. Conclusion

By blending ICT with face-to-face traditional pedagogy, the quality of teaching and the level of stu-

dents' achievement are being improved. In this backdrop, Moodle e-learning platform is, indeed, a great tool that enables the teachers to organize, manage and deliver learning materials to students. Through its plethora of features, Moodle e-learning platform makes the teaching and learning process friendlier and convenient. Further, social features (chat, forums, glossary, and survey) of Moodle helps students engage in social interaction and collaboration, thereby honing learning skills of the students. In India, most of universities/institutions are slowly embracing the blended learning of combining classroom lessons with e-learning. Since the license fee of proprietary e-learning software or LMS with its recurring annual maintenance cost (AMC) is very high, so Moodle open source LMS offers the best solution to implement e-learning/LMS platform. Implementation of Moodle in Department of Library & Information Science (Moodle@DLISc) is a prototypical framework, which will be implemented for all Post Graduate Departments, University of Rajasthan. And higher educational institutions can also leverage web-based teaching and learning technology like Moodle LMS to make the teaching and learning process more effective, thereby making the students and teachers experience collaborative learning.

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