Moodle : Design and Development of an E-learning Course for Library and Information Science Students of Amravati University

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ABSTRACT

Learning Management System in education can deliver content to students to increase adoption rate, minimize costs and cut down the training time substantially. Thepaper examined the possibilities of applying open-source learning management systems(LMS) in the teaching and learning process of the Department of Library and Information Science, Sant Gadge Baba Amravati University. This paper discussedthe role of Moodle LMS as a tool in delivering effective teaching and learning.

Through this e-learning platform, the department can provide 24*7 access to learning materials in Library and Information Science courses to the students. The paper proposes a prototypical framework that may apply to other Post Graduate Departments of Amravati University to adopt innovative educational practices using LMS.

Keywords: E-learning, Learning Management System, Moodle

I. INTRODUCTION

Over the past several years, teachers have been striving to help their students improve their learning and teaching skills both inside & outside of the classroom. E-learning is one of the best ways to enhance the teaching skills of aspiring teachers. It allows teachers to customize the vast courses into short and crisp modules using advanced e-learning and robust tools. Moreover, they can prepare notes and assessments to track their students' performances. In this way, E-learning provides a rich learning experience to aspiring teachers and helps boost their motivation to a great extent.

The Sant Gadge Baba Amravati University offers varied graduate, post-graduate, and doctoral programs through 28 teaching departments with excellent faculty providing quality education and a vibrant environment to the students. The University has been inclined to create necessary infrastructure conducive to the teaching learning. The aim of the university is to provide high quality, comprehensive education learning, research and extension activities that are compatible with the current and forthcoming generations. The University has been contributing to the educational sector for ages now and is famous for the quality education it provides.

E-learning is one of the tools that emerged from information technology and has been integrated into many universities and education programs, shifting from the traditional way of education to an electronic environment in which a student can access and use information anywhere and at any convenient time. All these developments are leading to a move in the role of universities as a source of knowledge to create an

environment that the students can explore, discover and learn by themselves. Library and Information Professionals always play a crucial role to make the users informed and knowledgeable and to support the teaching, research and institutional programmes.

II. E-LEARNING

The word e-learning is used synonymously with virtual knowledge, online education, computer-based training, web-based knowledge, and networked education. It means, it is revamping the style traditional academia teachers and learners grasp. E-learning is imparting and facilitating knowledge on media, electronic devices like that on the Internet, CD-ROMs, and DVDs, streaming media etc. It is the method of teaching purely through technology. E-learning has completely transformed the way in which learning is imparted to students. Unlike traditional chalk and board method of teaching, eLearning makes learning simpler, easier, and more effective.

Benefits of E-learning

Students want relevant, mobile, self-paced, and personalized content. This need is fulfilled with the online mode of learning; here, students can learn at their comfort and requirement.
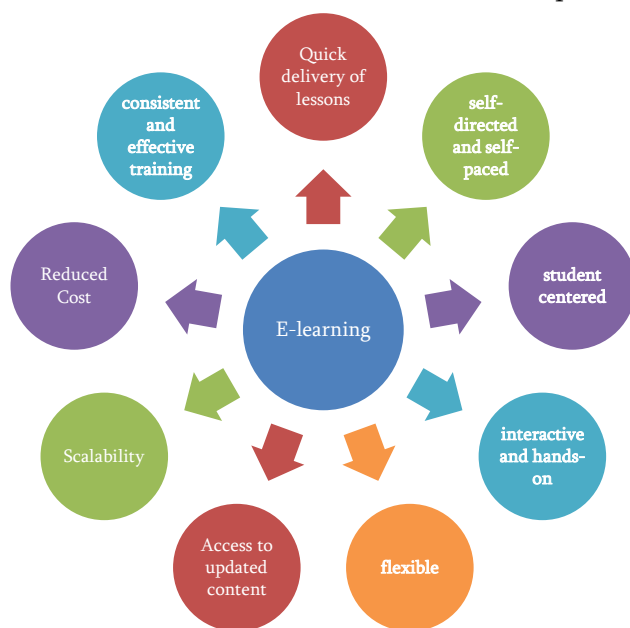
Fig.1: Benefits of E-learning Education

Now a days, the need for effective learning has increased. Many institutions have started creating content that is more interactive and incites action from the students. These include animations, interactive walkthrough quizzes, surveys, annotated videos and many others to produce such content, one needs specialized tools.

III. LEARNING MANAGEMENT SYSTEM

Learning Management Systems are online platforms where teachers and students cancollaborate to improve student achievement.

Types of Learning Management System

LMS vendors competing to offer users the most engaging learning features and functionality fill today's learning technology market. The technology determines whether an LMS offers the functionality needed to reach E-learning goals.

- Closed Source LMS
- Open Source LMS

Closed-source options typically provide an out-of-the-box eLearning platform. They often present limitations on customization and functionality based on what's proprietary to the specific product.

Open-source solutions allow creating an eLearning experience by offering the ability to incorporate additional plugins and third-party solutions, as well as customize the design and course structure based on learner's need.

Modular Object-Oriented Dynamic Learning Environment (MOODLE)

Moodle (Modular Object-Oriented Dynamic Learning Environment) is an Open Source e-learning platform. Moodle was created by Martin Dougiamas while working on a postgraduate degree at the Curtin University of Technology in Australia. In 2002, Martin Dougiamas was a Webmaster of a university and a system administrator of WebCT installation.

Moodle is a Course Management System (CMS) - a software package designed to help educators to create quality online courses. Such e-learning systems are sometimes also called Learning Management Systems (LMS) or Virtual Learning Environments (VLE). Moodle presents an excellent platform for resources and communication tools to run. Moodle must first be installed on the main server; an administrator configures the settings to enable access through user names and passwords. The user access Moodle through the Internet as it is web-based and does not have to install anything locally. It is a learning platform designed to provide educators, administrators and learners with a single robust, secure, and integrated system to create personalized learning environments.

Moodle supports infinite of features out of 21 different types of features which can be found instandard platform. All these features and activities help the students to interact with other students or teachers that can be used to support teaching and learning process.

Table No. 1: Activity and Resources of Moodle E-learning Platform

Interactive Features	Assignments	An activity used to submit files for marking
	Attendance	An activity used to take attendance during sessions
	Custom Certificate	This activity allows for the dynamic generation of PDF certificates
	H5P	This activity enables the creation of a variety of interactive content for formative assessment.
	Lesson	An activity for creating flexible learning paths using a series of HTML pages and choices.
	Quiz	Activity that can automatically provide marks and feedback to participants.
	Checklist	An activity that allows a teacher to create a list
	SCORM Package	Allows uploading of a standard package of interactive content
	Group Choice	Allows students to select one or more groups they wish to be a member of in a course
	Database	An activity that allows students and editors to input and store

		searchable data
	External Tool	An activity that links to an external source of learning resources and activities, such as a website
	Feedback	An activity that enables the creation of custom surveys to collect feedback.
	Big Blue Button	allows participants to join the conferences with their webcams and invite guest speakers
	Chat	An asynchronous chat tool activity that can be used for group work.
	Forum	Allows students to have asynchronous discussion
	Glossary	A list of definitions that can be added to by student or editor
	Survey	An activity that can use to assess and stimulate learning
	Wiki	A series of web pages that can be edited by participants and automatically links entries
	Workshop	An activity that allows uploading of assignments and facilitates peer and self-assessment
Resources	Book	A multi-page resource with a book-like format that you can page through or navigate using a table of contents
	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	It can be used to add text, images, multimedia or code in between other resources in the different sections
	Page	Allows teachers to create HTML pages for the students
	URL	Link to an external website

Source: www.moodle.org

The key functions of an LMS are

- Manage courses and programs.
- Provide and administer course registration.
- Track student registration, access, and progress.
- Manage to learn administration and reporting.
- Enable financial tracking and control of learning.
- Provide course scheduling and administration.

Technical Requirement for Moodle

• Server Requirement

Moodle is primarily developed in Linux using Apache, PostgreSQL/MYSQL/MariaDB and PHP (called as the LAMP platform), but it works on Windows Vista/7/8/10/2008/ 2012

Microsoft Visual C++ 2015 Redistributable package is required for PHP

PHP version: PHP 7.2.x, 7.3.x and 7.4.x

PHP extension intl is required

- **Software Requirement**

256 MB RAM (minimum), 1GB RAM (recommended)

500 MB free Fixed Disk (more space will be needed depending on user uploads)

- **Hardware Requirement**

Disk space: 200MB for the Moodle code, plus as much as you need to store content. 5GB is probably a realistic minimum.

Processor: 1GHz (min), 2GHz dual-core, or more recommended.

Memory: 512MB (min), 1GB or more is recommended. 8GB plus is likely on a large production server

IV. AIMS AND OBJECTIVES OF THE PAPER

- To develop E-learning Platform using Moodle LMS.
- To provide the course content for the Library and Information Studentsof Sant Gadge Baba Amravati University.

V. RESEARCH METHODOLOGY

This paper observes the possibilities of applying open source software in the teaching and learning process in the Department of Library and Information Science, Sant Gadge Baba Amravati University. Moodle was downloaded and installed on a local server. Home page of Moodle LMS has been customized and personalized. The course contents of Library and Information Science have been created and students of this course have also been enrolled. E-course contents developed by subject experts of the respective disciplines will be available on website. Furthermore, E-courses would be conducted for the research scholars and LIS professionals to delivered effective teaching and innovative learning.

➤ **Moodle@ DLISc, SGBAU, Amravati**

Moodle e-learning platform is developed and adopted by the Department of Library and Information Science, Sant Gadge Baba Amravati University to help course teachers to create quality online courses, and enhances the learning outcomes of students. Students can access and participate in the course with the help of availability of electronic resources. Moodle@DLISc offers many features like, chat, wiki, forums, feedback, survey, quiz, lessons, Blog (shown in table no. 1) that can be used in the teaching and learning process.
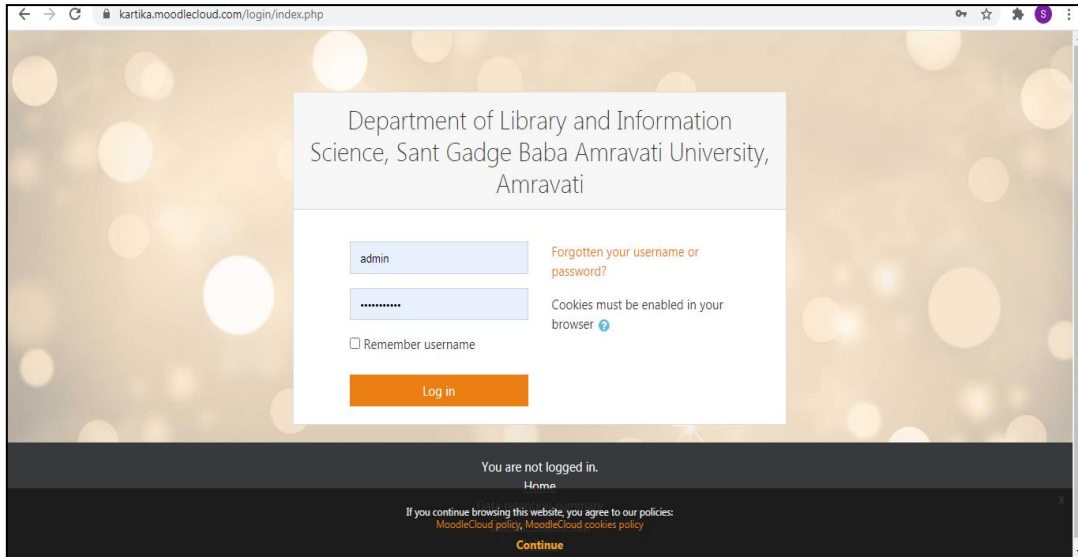
Fig. No. 2: Create Home page of DLISc@Moodle

> **Create Categories and Courses**

Moodle@DLISc can be accessed by providing user ID and Password. After applying login ID and Password the user will be moved from home page of the website. A course creator or administrator can put all courses in the miscellaneous category.

- Adding course Categories
- Click on Site administration & then courses, Manage Courses
- Add a category. Put all required information and click on create new category
- Save the changes after choosing alternative.

Moodle has various options for course formats like SCORM (Sharable Content Object Reference Model), Social format, topic format and weekly format. Department of Library and Information Science created a course for BLISc and MLISc. In addition, Digital Library and Reference Management tool have also been created. Each course category has sub-categories according to their syllabus.
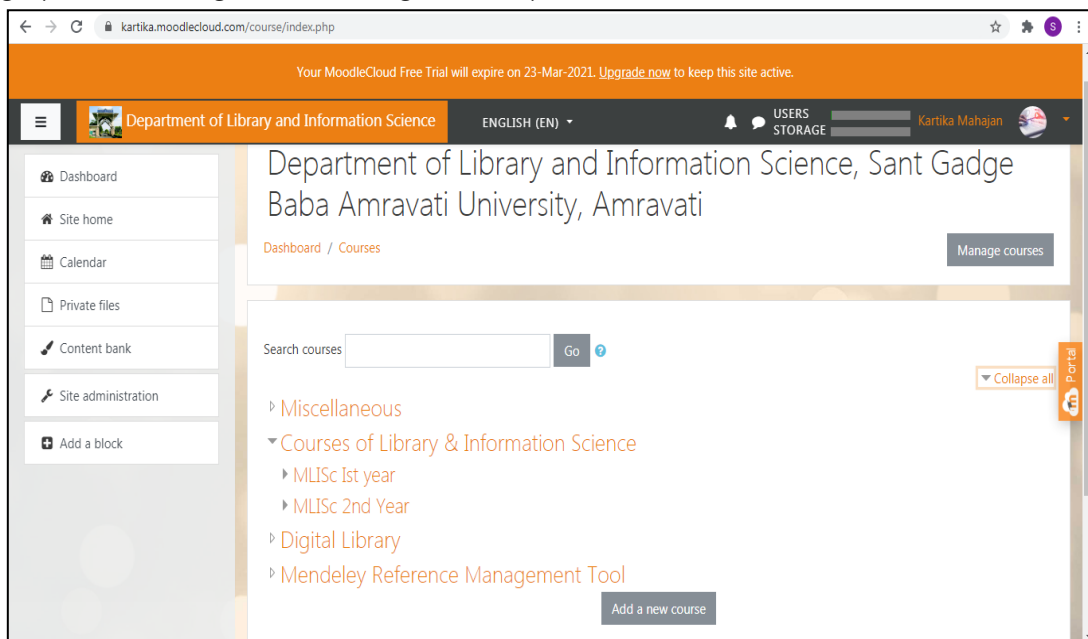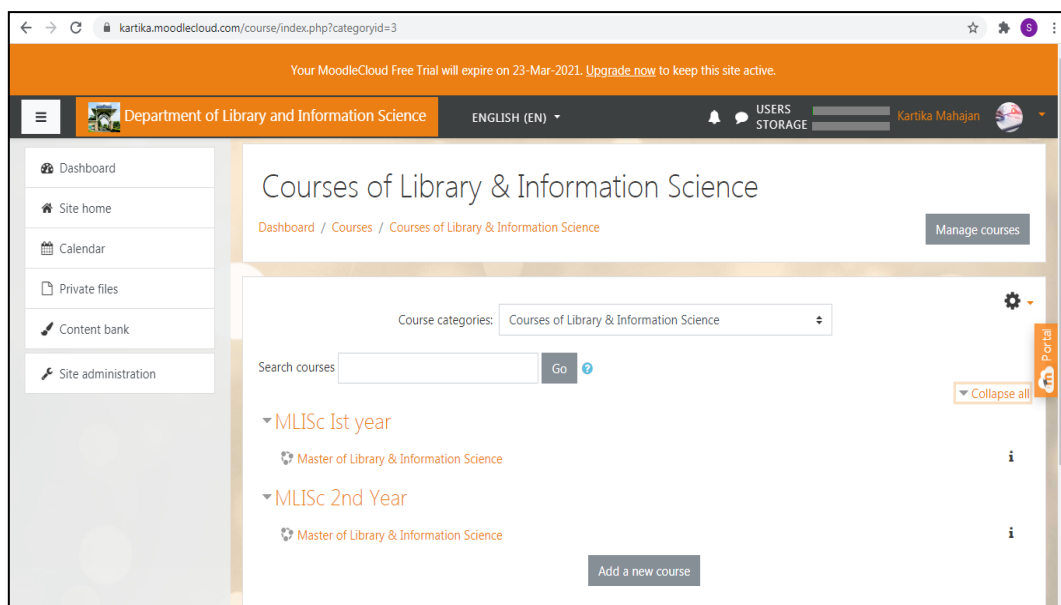

Fig. No. 3: Create course categories

Fig. No. 4: Add Subcategory of the course content

➢ **Integration of E-course/training via SCORM**

SCORM is a specific way of constructing Learning Management Systems (LMSs) and training content so that they work well with other SCORM compliance systems. SCORM is all about creating units of online training material that can be shared across systems. Courses of Information Literacy, Digital Library and Mendeley: A Reference management tool would also be integrated through SCORM that enables effective and efficient online training.
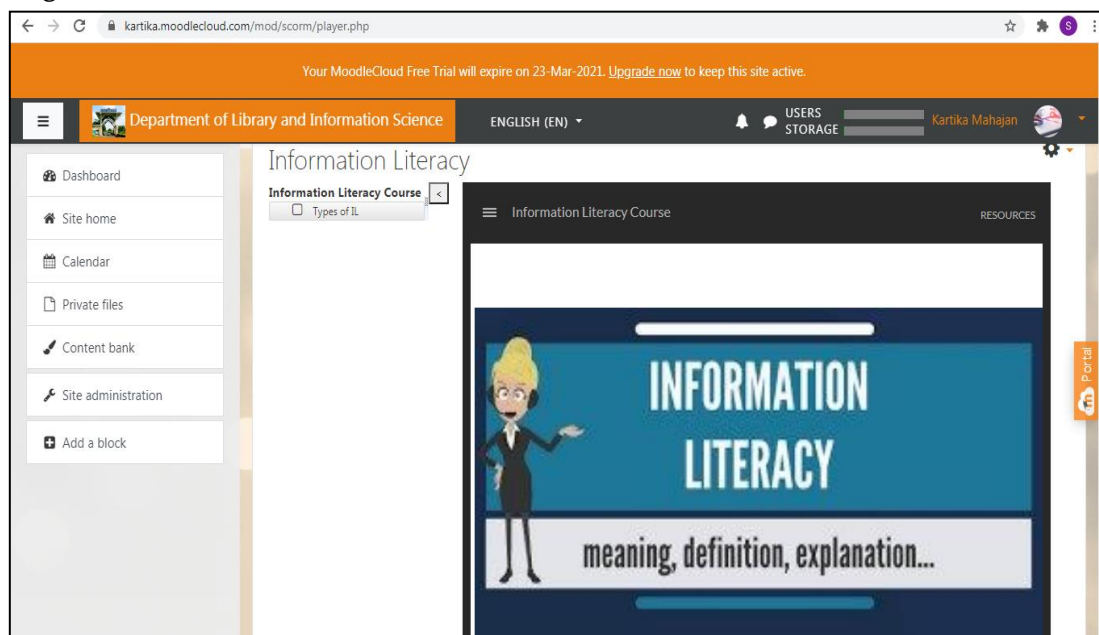

Fig. No. 5: Integration of E-course with SCORM package

➢ **Accessing Moodle@DLISc:**

The compatible and user friendly Moodle has been designed for easy access to students of Sant Gadge Baba Amravati University. Easy access to Moodle will effectively enhance e-learning.

VI. CONCLUSION

Moodle is an effective tool that enables teachers to organize, manage and deliver learning materials to students. The implementation of Moodle in the Department of Library and Information Science is a prototypical framework, which will be implemented for all departments of Sant Gadge Baba Amravati University.Further, E-courses would be conducted for the research scholars and LIS professionals to deliver effective teaching and innovative learning.

With all these developments the major role of universities is leading to a move as a source of knowledge to create a learning environment where the students can explore and discover the knowledge and learn them.

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