



UNIT 2.

DIGITAL LMS

FUNCTIONALITY

AIM

is to present
to teachers
open-source
learning
management
systems
mostly
sufficient for
online
learning

IMONED

consortium
LMS

Unit 2. LMS functionality

The most common functions of an LMS are:

- 1) Content management – creation, storage, access to and use of learning resources;
- 2) Curriculum mapping and planning – syllabus, lesson planning, assessment and personalization of the learning experience;
- 3) Learner engagement and administration – learner information and resources and tracking of progress and achievement;
- 4) Communication and collaboration – emails, announcements, messages, chat, wikis, blogs;
- 5) Real-time communication – live video conferencing or audio conferencing.
- 6) Administrative information about the course: prerequisites, credits, registration, payments, physical sessions, and contact information for the instructor.
- 7) Management of access rights for teachers, their assistants, course support staff, and students

What LMS options are there in the market

The current LMS market offers a wide variety of options, some free and some commercial. The most used LMS in the world, particularly in the Higher Education domain, is Moodle, a free and open-source system used for blended learning, distance education, flipped classroom and other e-learning modalities. Moodle benefits from an easy installation and maintenance process that doesn't need extensive technical knowledge [\[1\]](#), a large number of integrated educational tools and activities and a large support community of users which also provide an extensive list of plugins for extra functionality and the integration of resources through common standards, such as:

- 1) Sharable Content Object Reference Model (SCORM), a collection of standards and specifications that define the communication between the client-side content and a server-side learning management system, as well as how externally authored content should be packaged in order to integrate with the LMS effectively.
- 2) The AICC HACP standard for CMI, developed by the Aviation Industry Computer-Based Training Committee (AICC) is used to call externally authored content and assessment packages.
- 3) IMS Common Cartridge packages, allow importing and exporting contents and activities
- 4) Learning Tools Interoperability (LTI), a standard way of integrating rich learning applications (often remotely hosted and provided through third-party services) with educational platforms.

Moodle provides its own learning analytics model that can be customized to provide specific recommendations. In summary, Moodle is the preferred LMS by many organizations because of cost, flexibility and support for different educational models.

Although losing a share of the market in the last few years, Blackboard Learn (previously the Blackboard Learning Management System) is still the most widely used commercial learning management system in Higher Education. It is Web-based server software that features course management, customizable open architecture, and scalable design that allows integration with student information systems and authentication protocols. It may be installed on local servers, hosted by Blackboard ASP Solutions, or provided as Software as a Service hosted on Amazon Web Services. Its main purposes are to add online elements to courses traditionally delivered face-to-face and to develop completely online courses with few or no face-to-face meetings. Blackboard provides the most usual features of an LMS:

- Announcements: Professors and teachers may post announcements for students to read.
- Chat: This function allows those students who are online to chat in real time with other students in their class section.

- Discussions: This feature allows students and professors to create a discussion thread and reply to ones already created.
- Mail: Blackboard mail allows students and teachers to send mail to one another. This feature supports mass emailing to students in a course.
- Course content: This feature allows teachers to post articles, assignments, videos, etc.
- Calendar: Teachers can use this function to post due dates for assignments and tests.
- Learning modules: This feature is often used for strictly online classes. It allows professors to post different lessons for students to access.
- Activity Stream: It shows all the activity regarding the course, including the recent uploading of the assignment or notes from the teacher, the assignment have left or grade. It is essentially a history timeline of performed changes.
- Assessments: This tab allows teachers to post quizzes and exams and allows students to access them via the internet
- Assignments: These features allow assignments to be posted and students to submit assignments online. It also shows the due date of the assignment.
- Profile: The name of "Profile" is usually replaced by your full name. On this page, some basic information like nickname, contact number, or job can be filled. Besides, there is "System Settings" that can change the language and privacy settings that give permission to people who can view the basic information.
- Grade Book: Teachers and professors may post grades on Blackboard for students to view.
- Media Library: Videos and other media may be posted under this function.

Canvas is an interesting alternative that is gaining some ground due to the fact that is entirely cloud-based, therefore saving the organizations from the need to host, maintain and manage their own server. Canvas LMS is an open and reliable web-based software that allows institutions to manage digital learning, educators to create and present online learning materials and assess student learning, and students to engage in courses and receive feedback about skill development and learning achievement.

Additionally, any user can access Canvas on a mobile device from the Canvas Teacher, Canvas Student, and Canvas Parent apps.

Canvas includes a variety of built-in course construction and management tools that can be customized to create unique and accessible teaching and learning experiences: Assignments, Discussions, Modules, Quizzes, Pages, Collaborations, Conferences, and Groups. Canvas also allows institutions and instructors to add state and institutional learning outcomes to rubrics in order to measure and track student skill development and learning achievement. Additionally, course creators can use the Course Import Tool to bulk-upload pre-existing LMS course packages and/or course materials.

Instructors can provide students with comprehensive feedback on assignment and quiz submissions using SpeedGrader and manage grade reporting in the Canvas Gradebook. They can also facilitate real-time course interactions using Chat and communicate course news and updates with students using Announcements as well as the Calendar and Syllabus.

Instructors and admins can gain greater insight into student success and make informed instructional decisions using data provided in Canvas Analytics. Admins can also access SQL data about their Canvas user and usage details from Canvas Data Services.

Canvas also includes the Canvas App Center, where admins, designers, and instructors can enable a variety of External Apps (LTI Tools) and services. The ever-growing app library offers a wide array of interactive

resources, content repositories, assessment tools, social media integrations, and other digital learning and teaching resources.

Canvas Catalog is a digital marketplace where students can register, enrol, and pay for courses.

Canvas Studio is an interactive video management platform that enhances student engagement and collaboration.

Canvas Commons is a learning object repository where teachers can store course content for their own use and for collaboration with colleagues both within and outside of their institution.

Mastery Connect allows designers and teachers to build, deploy, and manage formative and summative assessments across an institution. It provides schools with actionable data to improve teaching and learning.

e-Portfolio platform that integrates directly inside of Canvas. However, students also always have access to their portfolios outside of Canvas even after they lose access to the LMS.

A Learning Management System is an application that allows the online delivery of educational processes in a multitude of formats, with many different content, activities and communication options. LMSs are now the basis of online and blended learning implementations.

LMS functionalities include content creation and management, curriculum mapping and planning, learner engagement and administration, communication and collaboration tools and administrative management.

The current LMS market offers hundreds of possibilities, with free and commercial options, local hosting or cloud hosting and software as service. Moodle, Blackboard and Canvas are the most common choices in Higher Education.

An LMS can replicate the most usual features of a MOOC provider: deploying content in the multiple forms, particularly video lectures, support quizzes and assignments as well as providing communication tools. LMSs also track and monitor the students' progress. The flexibility of the current LMSs environments allows to reduce the complexity of the learning environment, therefore making it more simple to use which is clearly one of the advantages of the MOOC environments.

2.1. Effectiveness of LMS

Learning outcome. Learners will be able to evaluate the necessary effectiveness of an LMS for their study process implementation.

LMS is designed to help an individual to develop, manage and provide online courses and programs to learn. It provides a platform for the students and instructors to learn and highlight their skills wherever and whenever they want as per their convenience.

LMS is an application that is used to administer, track and report & deliver learning programs.

2.2. Advantages and disadvantages of LMS

In LMS, we can create learning programs, courses, tutorials and post them so that anyone can enhance their skill set with those materials. These come in handy when an employee may leave the company or retire so that the knowledge stays safe.

We can educate by creating awareness programs and tutorials on anything that may be useful [\[2\]](#). LMS is a platform that is open for individuals and professionals to learn and display their skills. Students can opt for learning programs while professionals can deliver learning courses. It provides the flexibility to its users to learn from anywhere. It shares discussion forums on a public note. The users can learn the topic that they want easily and the cost is very less comparatively.

Benefits of Learning Management Software

- 1) LMS provides an all-in-one platform for learning and upgrading the skill set.
- 2) It provides tons of online courses, which gives the user an option to choose as per their choice.
- 3) It helps in tracking individual development progress.
- 4) It reduces the learning cost and time of travel and space arrangements.

Advantages of LMS:

- Learning Management System helps to streamline the learning pattern which in turn saves time for the instructors so that they can utilize that time to focus more on each individual's progress.
- Everything becomes digital, hence it saves a lot of money on buying notebooks, copies, etc.
- It gives the freedom to the user to learn from anywhere and thereby increases mobility.
- As things become digital, learning becomes more interesting with the existence of video tutorials, clips, gamification, etc.
- Easy and effective management is possible with LMS while information accessibility becomes quick and accurate.

Disadvantages:

Though there are several advantages of LMS, there are certain limitations too.

- The biggest drawback of Online Learning is that many things that need to be physically done could not be accomplished.
- The impact of face-to-face interaction is reduced, as no gathering is required for learning.
- It increases the tunnel effect of learning, hence the scope of wide thinking may get reduced and the user may just see through LMS, thereby leaving many opportunities outside.
- Some students need motivation and encouragement to learn which will be missing and thereby credibility issues will be present.

2.3. Comparative analysis of LMS

Evaluation criteria of LMS could be followed:

1. tools intended for generating contents;
2. communication tools;
3. tools for collecting and evaluating activities;
4. tools for co-operation and other possibilities of the system;
5. price



fig. LMS ([page](#))

Table 1. Comparing LMS ([3](#))

Title	Description
Google Classroom	Advantages: +Clean interface that's easy to learn +Powerful media sharing tools +Integration with Google Workspace Disadvantages: -No direct contact for support -Can't be licensed separately
Docebo	Advantages: +Smartphone apps for iOS and Android platforms +Notable clients +Free trial & demo +User forum via Docebo Community Disadvantages: -Very opaque pricing -Limited support options -Low rated apps -Few specifics on the website
Adobe Captivate	Advantages: +Free trial +Choice of acquisition options +In software image editing +Supports VR projects

	Disadvantages: -Cancellation fee on monthly plan -Limited support options -Higher price
Acorn LMS	Advantages: +Generous 60-day trial +Transparent pricing +Direct contact support options +Imports video content Disadvantages: -Lacks advanced support options -Limited user reviews -No Android app
Moodle LMS	Advantages: +Open-source +Free to use +Available smartphone apps +Included text editor Disadvantages: -Limited support options -User reports bugs in mobile apps -Certified Service Provider may be needed at additional cost
360 Learning	Advantages: +Choice of tier plans +Available smartphone apps +Extensive knowledge base +Free trial +Streamlines course creation Disadvantages: -Semi-opaque pricing -Multiple features reserved for top plan -Few options for direct support
Canvas LMS	Advantages: +Free trial and free teacher plan +Highly rated smartphone apps +Automated grading +User support community Disadvantages: -Opaque pricing -No app dark mode -Some sign on issues with apps -Lacks gamification



References

- [1] Although the maintenance of a Moodle server for a large number of users and courses does require an improved technical infrastructure and the corresponding technical know-how.
- [2] <https://www.softwaretestinghelp.com/learning-management-system/>
- [3] <https://www.techradar.com/best/best-online-learning-platforms>