The research Study on Learning Management Systems for effectiveness in Students

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Abstract:

The Learning Management System (LMS) has been established in a number of universities worldwide to help connect students and lecturers without the confines of the traditional classroom. It is an environment with digital software which is designed to manage user learning interventions as well as deliver learning content and resources to students. Since the LMS system has already been implemented and it has also been made compulsory for the lecturers to apply in their daily lectures, it is vital to identify feedback of students as users of LMS. Previous studies have shown various findings in relation to the impact of using LMS in the higher learning environment in various universities worldwide. Therefore, this paper will provide several insights of the LMS phenomenon.

Introduction:

There can be no doubt that technology has transformed the way education is delivered to people across the globe. We now live in an interconnected world where the traditional concept of formal learning, taking place in a single physical location, is becoming increasingly less relevant. Modern learners are becoming dissatisfied with the stand-and-deliver approach to education that dictates attendance times, learning venues, and modes of participation. The emergence of sophisticated communicationtechnologies and mobile devices has enabled a new generation of information consumers to satisfy their demands for knowledge without the need to meet in a physical location. Software vendors, open-source developers, and educational institutions, cognizant of this development, have embraced systems that can facilitate the management of courses and engagement with students remotely. The technologies that facilitate the provision of courses over long distances are broadly termed "learning management systems" or "LMSs." Learning management systems can be defined as web-based software platforms that provide an interactive online learning environment and automate the administration, organization, delivery, and reporting of educational content and learner outcomes.

SAAS-based LMS features allow administrators to add digitally-enabled training content, manage that content, deploy, and distribute the course content, thus encouraging learning with ease.SaaS-Based LMS features are extensive and enable organizations to easily leverage control over the platform's functionality.

LMS comes with white labeling features and options, allowing you to apply your branding to the LMS and making it distinctly yours. It gives you the uncompromised ability to white label, brand, and customize all aspects of your LMS to suit your organization's unique branding needs. Each LMS portal has a separate database and theme which you can tailor by accessing the LMSes quick access bar where System Setup is located. It's the one-stop location to manage all LMS white labeling, branding, and customization features.

Features of LMSs:

- Multi-tenant or multi-portal LMS architecture:
  - Single portal by default
  - Multiple portals on request
- Unlimited storage for:
  - Learning objects and courses
  - Administrators
  - Bandwidth
- HTTPS/SSL certificate supported
- Custom domain/URL setup
- White-labeling on request
- Google Analytics code embedding
- Mobile app for learners

Whether a LMS is proprietary or open source, it will need to be capable of executing a variety of functions that work together to provide a seamless experience for the user. These functions include the capability to disseminate knowledge, assessment of learner competency, the recording of learner attainment, support for online social communities, communication tools, and system security

UserManagement

- Define and set up organization structure
- Add users:
  - Sub-administrators
  - Reporting Managers
  - Learners
  - Instructors (Internal and External)
  - Experts
- Delegate administrator responsibilities
- Self-registrations via emails

- Create custom fields (user meta data/segmentation)
- Define groups
- Import users
- Invite learners
- Define power user roles

Course Management

Course management features encompass a LMS's capacity to deliver timely relevant course material to enrolled learners. It would include such features as content management and control, class scheduling, and content-audit capabilities. The capacity for users to contribute to content creation in their own personal space could also come under this domain.

- Supported learning modes
    - eLearning
    - Classroom (ILT)
    - Virtual Classroom (vILT)
- Supported learning objects
    - SCORM 1.2/2004
    - Video files
    - PowerPoint/Word files
    - PDF files
    - External links (URLs)
    - YouTube links
- Assessments/tests
    - Multiple-choice questions
    - Multi-select questions
    - Short answer questions
    - Match the following questions
- Surveys
    - Single answer
    - Multiple choice
    - Open-ended

- Course creation management
    - Recurring classroom courses
    - Re-usable learning assets
    - Mandatory and optional training
- Learning path abilities
    - Blended eLearning (Combination of eLearning + ILT + vILT)
- Course categorization
- Keyword-based search
- Knowledge Repository
    - Quick reference
    - Performance support
    - Document management

Automatics Certificate Generation

 LMS allows administrators to configure certificates to courses while enabling the LMS to present learners with certificates on completion of courses.Administrators can use inbuilt templates to design or customize an existing certificate.

Adding logos is possible as well. Administrators can also create a certificate template for future use. This is unique to LMS.Administrators can update the certificate with the learning path name if needed as well.

Mobile Application

- Mobile applications (learner-side application only)
    - iOS App Store
    - Android Play Store
- Offline learning
    - SCORM packages
    - Videos
    - Documents
- Launch HTML5 mobile packages
- Push notifications
    - Messages
    - Announcements

Assessment

Assessment is a critical function of LMSs. A LMS must be able to support the collection and storage of assessable tasks, along with the assignment of grades and feedback for each learner. Assessable tasks can include assignments, tests, projects, and portfolio evidence provided by the learner. For institutions in the VET space, the capability to automatically generate compliance reports is particularly valuable as it facilitates compliance with quality standards. LMSs should also be capable for providing learners with real-time information on their progress in a course along with relevant feedback generated by the instructor.

Reporting

- Administrator dashboard
- Manager team reports
- User reports
- Course reports
- Learning path reports
- Knowledge repository tracking
- Custom reports
- Report scheduling
- Certification reports
- Course credits (CE/CPE)
- Assessment analytics
- Survey analytics
- eCommerce transaction reports (for eCommerce add-on)

API Integrations

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  Single Sign On (SSO)
  - ADFS
  - OneLogin
  - Duo
  - Okta
  - PingIdentity
  - PingOne
  - Azure
- Zapier
- Fourth Hospitality HRIS
- Webinars

- o GoToMeeting
- o Zoom
- o Skype for Business

Gamification Learning games, if structured correctly, can provide a fun and stimulating way to engage learners by rewarding their progress. Future gaming features of LMSs could assign certificates or badges to learners based on their mastery of course content and could even be used to assign a rank or status to individual learners that could be shared within the user community.

Ecommerce

- Available as an option
- Payment gateways
  - o PayPal
  - o Stripe
  - o PayUMoney
- Discount coupons
  - o Single use
  - o Course volume-based
  - o Time-bound
  - o Transaction size based
  - o Zero-value manual redemption coupons

Tracking Progress

Attrition of learners is an issue that concerns many institutions. In an online environment, the experience has been that learners are at a greater risk of withdrawing from programs because of the lack of face-to-face contact. The ability to track user engagement in a course is therefore considered an important feature. User tracking analytics can include log-on frequency, time spent in different sections of a course, communication interactions, and the number of resources downloaded. With appropriate reporting functions, course facilitators are able to detect possible student performance deficits and intervene before course withdrawal or termination becomes likely.

Security and Privacy

Security and privacy are of paramount importance to the success of an online course. Important security features in LMSs include user authentication, access verification, password integrity controls, and intruder detection. Privacy controls are also important to ensure that sensitive information is made available to the intended recipient only

Ubiquitous Access

People are increasingly dependent on their mobile phones to connect to the Internet. It therefore stands to reason that online course participants need to interact with LMS course environments using their mobiles devices. Most LMS providers design course content as responsive HTML pages and are therefore accessible by most smartphones and other mobile computing devices, thus providing ubiquity.

Social Connectivity

One of the great criticisms of LMSs is the lack of inherent community in online learning. Features that try to replicate a social environment online include discussion forums, live chats, and videoconference tools as discussed in the previous section. Some LMSs even have features that monitor learner interactions with communicationtools and are considered invaluable for courses that mandate class participation as an assessable component of a course.

In-House Housing of Data or Cloud Based: Cloud-based LMS solutions are rapidly developing as a viable alternative to on-site installation for client organizations. The choice of adopting a cloud-based LMS largely depends on the degree of confidence an organization has with sensitive data being housed in an environment outside the organization's direct control and whether or not the organization has the infrastructure and expertise to maintain the physical infrastructure necessary to run an on-site LMS. Cloud-based LMSs are usually proprietary systems where the vendor packages the system functionality with the online hosting of the client's data and then charges a fee for the service based on the number of users accessing the LMS site.

Results and discussion:

Table 1. Results of comparative analysis.

	Claroline	Moodle	Blackboard
EKP Page -	x	x	x
URL D	x	x	x
File D	x	x	x
Folder D	x	x	x
Legend -	x	x	x
Book -	x	x	x
Lecture -	x	x	x
Syllabus -	-	x	–
Dictionary -	x	x	x
Lesson plan x	-	x	–
Video -	-	x	x
Integration -	x	x	x
Discussion x	x	x	x
Chat x	x	x	x
Reports x	x	x	x

Conclusion

 Learning management systems (LMSs) have evolved in response to the demand for innovative educational products that leverage advances in information technology and telecommunications. LMSs can be either proprietary, where the client pays for the installation, maintenance, and end-user licensing, or open source, where the source code is freely available but the installation and maintenance is handled in-house. LMSs have many features that support online learning including course management, assessment, learner progress tracking, gradebook, communications, security, and smartphone access. LMSs continue to evolve, and future versions are likely to include tools and features that facilitate more tailored content to individual learners, enhance social interactions between online learners, and provide more timely and relevant analytics to institutional decision-makers.