# Learning Management System

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**Abstract:** Education is considered as the shaping tool of people. In a developing country like India, education is very important to provide students with practical knowledge and experience. However, during tough situations like that of the pandemic will make in-class education really impossible. There comes the use of online platforms. The systems that are used for the learning of students and for the communication of teachers in a virtual environment are called Learning Management Systems (LMS). The LMS allows students and teachers to obtain quality education at low cost even without coming in real. These LMS were really helpful to cut the overall time wasted on factors like transportation, in between teacher shifting, and much more. Learning Management Systems are created with various factors in mind, which can change according to the needs of various institutions. In this paper, the approach to design a LMS is based on the common needs that any institution would require.

**Keywords:** in-class education, LMS, low cost, virtual platform.

## 1. Introduction

Learning Management Systems are helpful in reducing the development time of organizations, and also to reserve, control training content, and to keep track and to evaluate learner performance. In simple words, they are a must for teaching people. However, one of the toughest problems faced by firms is the applying and adoption of a new Learning Management System, which is very complicated and tricky. Selection of the right LMS for the organization and using it is a massive investment in time, energy, and cost. The main objectives of Learning Management System practices are to help apply a winning strategy from scratch. These carefully adopted top LMS can help people in every step of the process.

## 2. LITERATURE SURVEY

Chirag Patel, Mahesh Gadhavi, Dr. Atul Patel, has proposed "A survey paper on e-learning based learning management Systems (LMS)" in International Journal of Scientific and Engineering Research • June 2013.

The paper carefully defines the model of their LMS was designed with the help of referring Moodle. The LMS has a primary focus on three main topics such as quizzes, forums, and assignments. It uses the web-mining approach. The paper also discusses some of the factors contributing to the selection, applying and difficulties in the working area.

Renu Sabharwal, MdRahat Hossain, RiteshChugh, Marilyn Wells, has proposed "Learning Management Systems in the Workplace: A Literature Review", In 2018 IEEE International Conference on Teaching, Assessment and Learning for Engineering.

The objective of this paper is to improve the user-friendliness of the Learning Management System. To enhance the usage of LMS for employee training, usability must be explored. This research paper provides a narrative literature review. Narrative studies are generally based on the availability of literature or the author's selection.

Jennifer Watson, has proposed "Learning Management Systems in Higher Education- The University of Alabama".

Deeper learning principles can be utilized in a variety of ways in a learning management system, Virtual chat, discussion boards and announcement postings all allow for the social learning element, encouraging interaction between faculty and students. Interactive tests with immediate feedback facilitate active learning where practice and real world tasks are emphasized. Carefully chosen hyperlinks to websites let students explore additional information in a contextual way, integrating the knowledge into the student's world. First, the selection process and implementation of a course management system is a basis for consideration. Next, integrating the course management system into theoretical approaches commonly used in face to face courses presents challenges. Lastly, managing the conflicting needs and expectations regarding the experience in the learning management system is another element of this significant issue.

Darren Turnbull, Ritesh Chugh& Jo Luck (2020), has proposed "Learning management systems: a review of the research methodology literature in Australia and China", International Journal of Research & Method in Education 2020.

The methodology adopted in this review, draws on the strengths of two main approaches to literature reviews: narrative and systematic. Narrative review is a critical analysis of the literature of a chosen topic. Narrative reviews are broad in nature and do not describe in detail the methods employed to collect and analyze the literature selected for examination. Systematic reviews are characterized by explicit, transparent methods that can be reproduced.

Nor Azura Adzharuddin and Lee Hwei Ling, Member, have proposed "A Study of the Effectiveness of Learning Management System on Student Engagement, Motivation and Performance in Higher Education".

The Objective of this paper sought to explore the effects of LMS on student engagement, motivation and performance by comparing students who have access to LMS Moodle with those students who do not have access to LMS Moodle, to study the Effectiveness of LMS for student engagement, motivation and performance, to study the effectiveness of the extent of use of LMS features on student Engagement, Motivation and Academic Performance in the Experimental Group. Since the present study aims at studying the effectiveness of LMS-Moodle on Student Engagement, Motivation and Performance, the Experimental method being the most suitable has been selected. The Research Design used for this study was the Experimental method posttest only design; it will help to fulfill the objectives of the study. Easy to install, use and the wide support that is given by the open source community. The amount of time spent in Moodle, may not be an important factor but what they do in that time that is quality of time spent on the LMS is what is helping the experimental group to get engaged, motivated and perform better.

Sarachandran Nair. C1 and Dr. Rajendra Patil2, has proposed "Construction and Validation of the Learning Management System Success Scale in the Higher Education Setting in Global Journal of Business and Social Science Review".

The methods of education have become outdated and a large number of institutions have started to move towards the new learning management systems for skills needed for the students. The paper uses a quantitative method on 379 responses from a variety of universities students on education from India and Maldives.

Iuliana Dobre, has proposed "Learning Management System-Based Evaluation to Determine Academic Efficiency Performance- Sustainability 2020".

The objective of this paper is to evaluate a model for which architecture design, configuration, metadata, and statistical coefficients were obtained using four Learning Management Systems (LMSs). That allowed us to determine reliability, accuracy and correlation. using and integrating the factors that other researchers have previously used, only using isolated models, such as Anxiety–Innovation (AI), Utility and Use (UU),Tools Learning (TL), System Factors (SF), Access Strategies (AS), Virtual Library (VL), and Mobile Use(MU).

Hala Jamal &Ameera Shanaah, has proposed "Learning Management System success: Increasing Learning Management System usage in higher education in sub-Saharan Africa" in International Journal of Education and Development using Information and Communication Technology(IJEDICT), 2015.

The objective of this paper is to investigate whether the adoption of LMS is fulfilling their potential through analyzing the literature published on LMS usage from across the region. The article concludes by proposing strategies that can help institutions make more effective use of their LMS. It is important to ensure that LMS implemented in sub-Saharan Africa are successful given the fact that any failures of LMS implementations are likely to be high on account of the limited availability of resources. Improving usability of LMS Developing and uploading quality learning materials Enhancing support services Reviewing relevant policies Increase awareness of LMS Making use of mobile applications Complementing with Social Media, It supplement traditional face-to-face delivery where faculty members develop and share digital learning materials via the Internet.

Joel S. Mtebe, has proposed "Learning Management Systems: The Game Changer for Traditional Teaching and Learning at Adult and Higher Education Institutions in Global Journal of HUMAN-SOCIAL SCIENCE": G Linguistics & Education Volume 19 Issue 6 Version 1.0 Year 2019.

The paper has concentrated on the need to explore the influence of the learning management system in old methods of teaching in higher educational organizations. The approach of the paper is via qualitative research method. The paper has taken their model form the platform called Moodle to check the performance and efficiency.

N. Partheeban and Dr. N. Sankar Ram, have proposed "The Role of Learning Management Systems in Educational Environments: An Exploratory Case Study".

The aim of this research is to explore the role of LMS integrated with classroom education from the user's perspectives. In particular, we aim to identify and explain patterns of learning and teaching activities using LMS, which is in our case, it refers to Blackboard in a blended learning context. The use of LMS facilitates the communication with students through managing course materials, assignments, and announcements. It reduced face-to-face contacts between teachers and students, and some activities, which are an important part of the learning process.

Radoslava Kraleva, Mehrudin Sabani, Velin Kralev, has proposed "e-Learning Management System Using WebServices -ICICES2014 -S.A.Engineering College, Chennai, Tamil Nadu, India".

E - Learning fulfils the thirst of knowledge and offers online content that can be delivered for the learner at anywhere, anytime and any age through a wide range of e-learning solutions e - learning management system with web services oriented framework and SOA. This system supports the cross browser and is fully integrated with different databases. The system can facilitate personalized delivery of contents based on the individual learner's knowledge and learning preferences. It will provide participants with an extensive list of summaries of related resources that they can choose to read, Lack of Practical Training. E - Learning is a great tool to get accessible and paperless course material and guides.

Sonia Sachdeva, Dr. Kavita, has proposed "Learning Management System (LMS) among University Students: Does It Work?" In International Journal of e-Education, e-Business, e-Management and e-Learning, Vol. 3, No. 3, June 2013.

LMS might encounter some problems, It's all part and parcel of learning and using a whole new system altogether, lecturers have an easier time reaching out to their students out of class hours and can instantly update them over the LMS about issues regarding their coursework. It is an environment with digital software, which is designed to control the user. LMS might encounter some problems, it's all part and parcel of learning and using a whole new system altogether.

Subburaj Alagarsamy, Margret Vijay, has proposed "A Study on Impact of LMS of students of a university college in Sultanate of Oman" in IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 2, No 2, March 2012

It is an environment with digital software, which is designed to control the user Learning intercession and delivering learning material and sources to students. Students with better basic skills in the internet perceived the internet to be supportive of learning environment by using the internet for their learning tasks and also generally had better attitudes toward using the internet to improve their studies learning task enhance effectiveness in learning and increase learning productivity is more important than the easy to use, There is also a problem of the extent of security of online learning programs. The authenticity of a particular student's work is also a problem as online just about anyone can do a project rather than the actual student itself.

Fatih Soykana, Burak Şimşeka, has proposed Learning Management Systems for higher education - an overview of available options for Higher Education Organizations in The 6th International Conference Edu World 2014 "Education Facing Contemporary World Issues", 7th - 9th November 2014

The first part of this paper presents the main challenges which have to be faced by HEOs when selecting and implementing a LMS, as well as the second part of the paper is dedicated to a rundown of the main alternatives available for HEOs from the main families of LMSs. Low cost solution, specialized software licenses, no maintenance involved from the user side. Extremely mobile solutions do not require a face-to-face interface. Possible to personalize the education as required and as necessary and also capable to provide personalized and instant feedback to users able to take the advantage of the latest achievements made available by the ICT technologies developments and also which will prove sufficient flexibility from the point of view of resources involved (hardware, software, human, financial) keeping those to the lowest level possible.

Ana Paula Lopes, has proposed "Learning Management system in Higher Education" - July 2014

The increase in the usage of laptops and the internet has increased the opportunities for students and teachers to communicate, share, and collaborate more easily. The paper finds out that there are two communication tools namely asynchronous and synchronous. With the help of the assessment tools, the contents can be stored in one place. The paper concludes by telling that for a LMS to obtain positive outcomes, the learning management systems have to be adjusted to one's particular institutional framework.

Brenda Juárez Santiago, Juan Manuel Olivares Ramírez, Juvenal Rodríguez-Reséndiz, et.al, has proposed "An Analysis of Some Learning Management Systems" in International Journal on Advanced Science Engineering and Information Technology • August 2019

E-learning; learning management system (LMS); LMS analysis and evaluation; human-computer interaction; software engineering; mobile-learning. For instance, in a traditional classroom set-up, teachers maintain the full attention of the listeners all through the process. But, this is not true in all learning management systems. Also many LMS around the internet provides multiple language facilities to ease the student's learning.

Sonia sachdeva1, Dr. Kavita,has proposed "E-Learning System in Indian companies, scope and future: A comparative study in International Journal Engineering and Innovative Technology (IJEIT)"Volume 6, Issue 12, June 2017

Improved, modern education in developing countries provides the meaningful employment for former students progress towards a knowledge-based financial system, and rapid national economic growth. This paper explores the comparison of e -learning companies in India. The paper is a descriptive research and here we also have discussed the scope and future of e-learning in India. The paper gives insight on how e-learning companies given their contribution in the development of Indian educational institutes. The paper uses a comparison of two e learning Indian companies and all these comparisons showed by graphical presentation Less Expensive. Update is Easy. Self - directed Convenient. Quick Moves faster. A offers digital marketing is Excellent but B is Not applicable. Mobile learning is very good but B offers not applicable. A offers courseware conversion in good but B offers not so good it is at the very poor situation.

Fatih Soykana, Burak Şimşeka, has proposed , "Examining studies on learning management systems in SSCI database: A content analysis study", 9th International Conference on Theory and Application of Soft Computing, Computing with Words and Perception, ICSCCW 2017, 24-25 August 2017

Learning management systems published in SSCI database through content analysis method. The study was carried out with a documentary survey model. Journals within SSCI (Social Sciences Citation Index) are included in this research Importance and use of learning management systems (LMS) continue to increase day by day LMS preference is an important and critical topic for education institutions. It is essential to predict how the technology will be used in the future, expansion education in network community process and needs of today's learners and future's learners would be different. LMS types with competencies appropriate for every institution could not be developed, institute are developing own LMS system

Taralynn Harthell and Steve Chi-Yin-Yue, has proposed Video Streaming in Online Learning", AACE Journal, 2006.

It is an overview of video streaming on the Internet and how it can be used in online course instruction. Online learning is a practical tool for educators to meet the needs of their students and the academic institutions that offer such types of courses. Before creating digital video for streaming purposes, the instructor needs to be certain that several factors exist. This includes ensuring that the developer has: made the video in the proper format, access to a streaming media server, adequate bandwidth to download and upload the video file. These hardware and software components include a video camera (analog or digital), video capture card, video editing program (e.g., Adobe Premiere, Final Cut Pro), video encoding software (e.g., Real Producer Plus, Discreet Cleaner), a computer with a lot of storage space to store the video files, and a high-speed network connection.

Irfan Syamsuddin has proposed "Review on Intelligent Video Streaming Schemes for Cloud Computing", 5th Int'l Conf. on Advances in Science, Engineering, Technology and Natural Resources (ICASET NR-17) Aug 2017

This study acts as a preliminary study on delivering video streaming within a mesh network such as cloud computing infrastructure. In this situation, bandwidth, jitter and loss of data are still considered as serious issues to be solved with respect to a great number of end users with various network characteristics and with a goal to keep the video at appropriate quality. Video adaptation scheme is the first category which is an intelligent algorithm applied to video streaming to keep the quality of video being transmitted according to the various and unstable bandwidth conditions. Scalable streaming scheme is the second type of intelligent video streaming scheme that is capable of maintaining the quality of video.

## 3. OBJECTIVE

The objective of this project is to incorporate all the three important elements such as video streaming, online content submissions, and online evaluations at one place. This project overcomes the problem of going to several websites for attending classes. It also eases the student and teacher interaction by involving both students and teachers through an interactive-friendly user system.

Learning Management System objective categorize into three; they are Video streaming ,which creates an virtual classroom for educational purposes or for online meeting , E-Content where we can store and retrieve lecture tutorials, video lectures and e-content materials in any format files and Evaluation in which we can submit the assignment works ,test, quizzes and to provide results.

## 4. METHODOLOGY

In LMS. PHP and dot net are the basic languages that the project is developed. It mainly focuses on three activities: video streaming, e-content and Evaluation. Improving usability of LMS. Developing and uploading quality learning materials. On the user's side, students have to register their ID by selecting username and password by providing necessary details. Then each user profile will be maintained by the user when desired. The details will be their first name and last name, user register number, Department, Year of joining. Details of the person, along with their username and password, will be saved in the database. After registration, the student can log in to the LMS homepage. Students can access their course information; materials like pdfs and e-content materials, attendance, etc. And also submit their files for evaluation purposes.
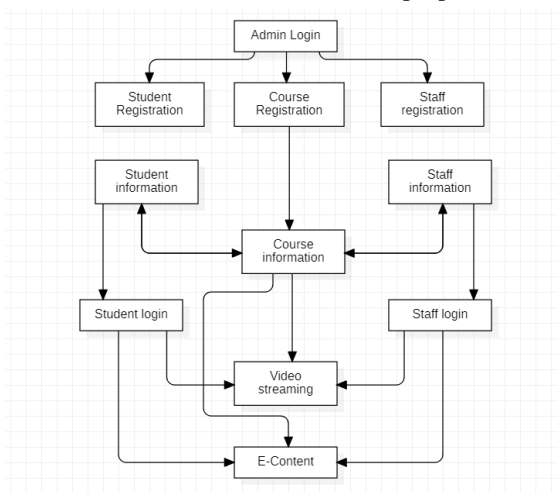


**Figure 1.** Flow Diagram

Staff can log in to the LMS homepage. They can access their course information; materials like pdfs and e-content materials, students' information, class information, students' attendance, etc. They can upload the materials in any format like audio and video in the course module. Faculty can update class attendance records from their device anywhere within the allotted time for that session. This module helps manage all Staff's information and can be updated from time to time as per requirement. Very easy to maintain and update staff records.

Mainly, Faculty can start an online meet using a video stream by sharing the live Id to students or a specific class by selecting the class. And also can upload the video stream by recording it.

The Faculty can upload the materials that can include adding text, pictures, tables, hyperlinks and slideshows, etc. Faculty has an option of uploading the materials in this module. The material may include pdf, e-content, and all. And also, they can upload the recorded video stream that they can access later. Students can access all those materials that Staff has uploaded by clicking the course material module from any device.
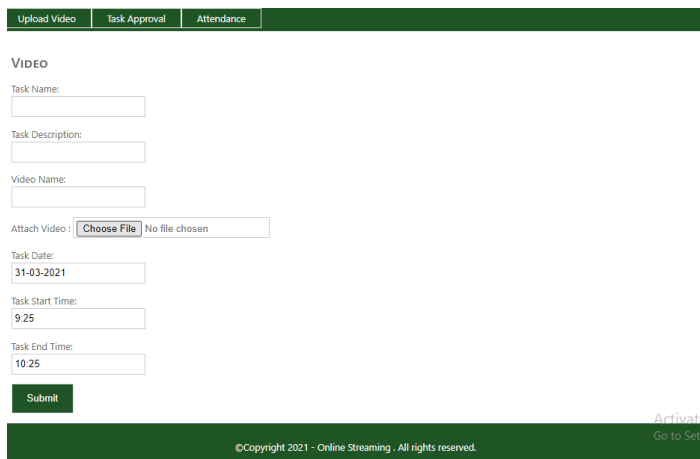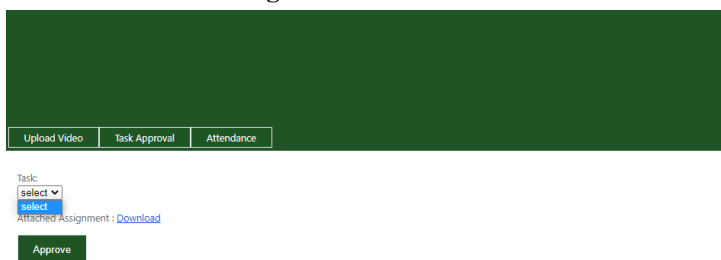
## 5. RESULT



**Figure 2.** Staff Module
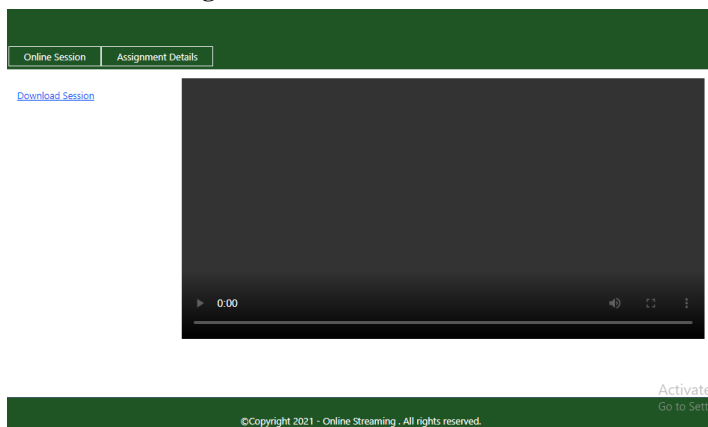


**Figure 3.** Course material module
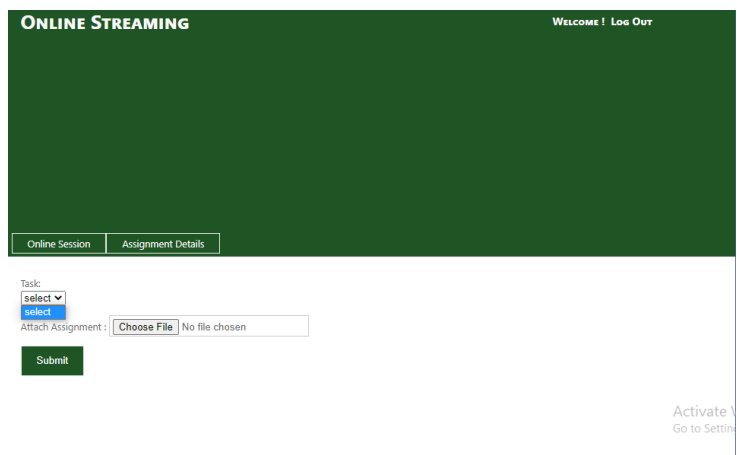


**Figure 4.** Video Streaming Module
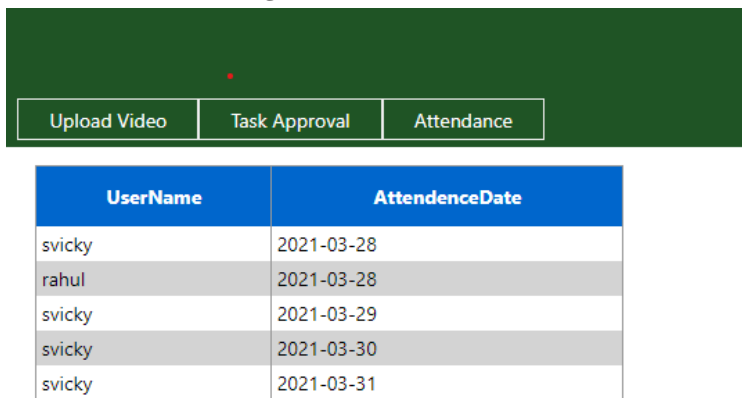
**Figure 5.** Course Module



**Figure 6.** Attendance

**CONCLUSION**

Education has reached its own height in all these years. Starting from down-tree education type to black boards and monitors in classes, it has evolved drastically. The system has now reached another level during these Covid-19 situations. The concept of online learning/ E-learning has come to practice because of the pandemic. Due to this, the life of students, parents and teachers have become easy. This also leaves the teachers with less work burden. So the use of these online learning platforms has come to trend now. Such systems are called Learning Management Systems. The concepts of these systems such as the modules, flow diagram and more are discussed in this presentation. The problem with the online learning platforms now is that the systems are not so easy to use. They require heavy alternating between different tabs to do multitasking such as for *submitting assignment* one tab, for *attending classes* one tab, for *accessing materials* another tab and so on. The problem gets difficult in the case of more advanced topics which involve practice. This problem is overcome with the help of keeping all the necessary elements in a single system which is discussed in this paper.

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