



## TEACHING LEARNING RESOURCES AND ICT PLATFORMS IN HIGHER EDUCATIONAL INSTITUTIONS

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**Paper Received On:** 25 SEPTEMBER 2022

**Peer Reviewed On:** 30 SEPTEMBER 2022

**Published On:** 1 OCTOBER 2022

### Abstract

*Information and Communication Technologies are playing important role in teaching-learning process, with the development of technology and the need of the society, the integration of ICT-based teaching-learning resources for effective teaching-learning process are the requirement of the day. Educational Institutions equipped with digital resources have an advantage to provide e-learning to the learners and they are benefitted by the use of different virtual platforms such as Learning Management System. This paper explains the Digital Initiatives in Higher Education and ICT-based teaching learning resources, challenges in using ICT based teaching learning resources and measures for teachers and learners to overcome these challenges for effective teaching learning process so that instructional objectives can be achieved efficiently by using digital technologies.*

**Keywords:** *Information and Communication Technologies, Learning Management System, Teaching learning resources, Virtual Classes, Digital Resources.*



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### Introduction

In this 21<sup>st</sup> Century, the term ICT is an important integration in many fields including Education. National Policy on Education 1986, which was modified in 1992, emphasized the requirement of educational technology for improvement of quality of education. The important role of ICT in school education has been highlighted by the National Curriculum Framework 2005. ICTs is playing significant role in teaching-learning process. With the development of technology and need of the society, the integration of ICT-based teaching-learning resources for effective teaching-learning process are the requirement of the day.

**Information and Communication Technologies (ICTs)-** ICTs are all devices, tools, resources, services which are digital and those which can be delivered through digital forms, and can be used for achieving the goals of education.

These include such as hardware devices connected to computers, different software applications, digital contents, internet, radio and Television services, Learning Management System and many more.

**ICT supported learning:** Various technological tools and resources which are used to transmit, to store, to create, to share the information in ICT supported learning.

These technological tools include computers, internet, radio, television and many more. ICT supported learning can be beneficial for inclusive classrooms where different kinds of needs are fulfilled by using them.

**Digital Resources:** ICT based learning resources should be integrated as required by the curriculum and it. Use of ICT resources for teaching-learning process, such as web-enabled laboratories for Physics, Chemistry, and Biology subjects should be promoted in schools as well as higher educational institution. Developed digital teaching-learning resources in the form of e-books or flip books for different subjects should be available.

Animated lessons, interactive games, presentation slides or graphics involvement of these can enhance the learning. Use of Audio-visual aids such as simulations, videos or different combinations of the above should be included in the classroom instructions whenever required. Digital resources can help to teach abstract concepts.

**Virtual Labs-** It is an initiative of Ministry of Education under the National Mission on Education through Information and Communication Technology. Virtual Labs benefits of all the learners and faculty members of Engineering and Science institutes who lacks of good labs facility or instruments. It provides an interactive simulation environment for performing experiments, collecting data and assessing it in any time anywhere.

Virtual Labs uses simulation technology for creating real world environment and problem-solving skill. It has over hundred virtual labs and approximately seven hundred web-based experiments to give remote access in Science and Engineering institutions. Learners are benefitted due to no requirements of any kind of infrastructure because it can be accessed through internet.

**OLabs-** The basic idea behind Olabs is that experiments can be taught by using internet. It provides experiments in Physical, Biological; Chemical Sciences of the learners of 9<sup>th</sup> -12<sup>th</sup> grades. Alignment of content is to NCERT/ CBSE and State Boards Syllabus. Website for the

Olabs can be accessed at <https://www.olabs.edu.in/> , and access to Olabs is free for schools upon registration. Features of Olabs also include simulation, lab videos, animations for better understanding of the practical or experiments. They provide personalized experience for learners by providing the ability to perform and record the experiment anytime.

**National Digital Library of India:** NDLI is a virtual repository for learning resources. It is a digital library that stores information of different digital contents such as different kinds of books, various articles, audio-video resources, thesis and many more types of educational materials for their respective users. NDLI provides learning resources with a single-window search facility and various contents are available in different languages. It is sponsored and mentored by Ministry of Education, Government of India by its National Mission on Education through Information and Communication Technology (NMEICT).

Educational Institutions equipped with digital resources have advantages to provide e-learning to the learners and they are benefitted by the use of different virtual platforms such as Learning Management System.

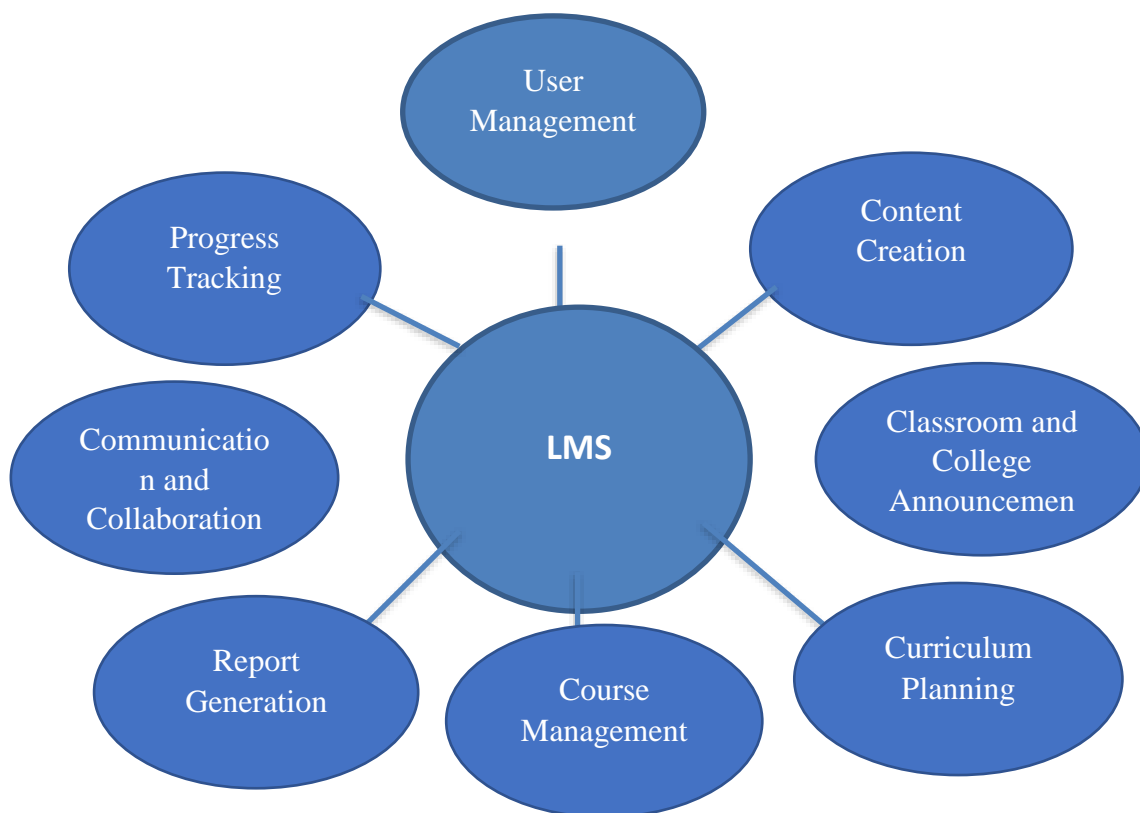
**Learning Management System (LMS)**-LMS is an online integrated software which is designed to create, to manage the delivery, for tracking of the educational content and courses. LMS can be hosted as a stand-alone product on the company server. LMS can be a cloud-based platform that is hosted by a software firm.

Schools and Higher educational institutions use LMS platform to plan, implement, facilitate, assess and monitor students' learning.

**Features of Education Learning Management System:** Some of the important features of LMS used for educational institutions are:

- **User Management:** User Management feature allows teachers for adding and editing users, assigning them their roles, and combine students into various subject groups and organizations.
- **Content Creation:** Most of the e-learning platforms have a built-in editor that allows teachers to create test and course content.
- **Classroom and College Announcements:** In the Announcements, classroom and institute information can be updated and it is available on Learning Management System.
- **Curriculum Planning:** Learning Management System can be used to design the course plan and scheduling of lecture.

- **Course Management:** Course management feature delivers learning materials according to requirement of the learners.
- **Report Generation:** Report generation provides reporting tools with different types of options available for customizing the learners' progress reports.
- **Communication and Collaboration:** For effective communication and collaboration, usually LMS provides forum, chat to use as communication tools and blog, wiki, glossary to use as collaborative tools.
- **Progress Tracking:** Progress tracking is the feature which is used for assessment of learners' performance. Teachers can assess learners' progress at different time period. Assignments also submitted online and tests and quizzes can be graded quickly.



**Figure 1: Common Features of an LMS for Education**

**Major Learning Management Systems:** Some of the major Learning Management Systems are Moodle, Schoology, Blackboard, Edmodo, Google Classroom, Sakai.

**Benefits of Learning Management System:** Institutes can safely organize and store data; teachers can share learning materials according to requirement of the courses. Teachers can track the learners' progress and performance. LMS allows teachers and administrators to easily integrate other added tools.

**Challenges in Using ICT Based Resources:** The following are some of the major challenges teachers facing during the use of ICT resources in teaching learning process. Learners also face some of the difficulties in ICT integrated learning.

- **Accessibility-** The basic need for ICT integration in classroom teaching learning process is requirement of sufficient number of Computer systems, Smart phones, smart boards in classrooms, projectors for fulfilment of the capacity required for classes.
- **Poor Network Connectivity-** Use of Internet is the most important aspect in online learning. Poor Internet connectivity adversely affects the online classes and the access of learning materials.
- **Lack of Training-** Training for how to use different applications in e-learning is important for teachers, administrators and learners. Lack of familiarity of digital resources for example, new applications can adversely affect the learning process.
- **Lack of Motivation-** Lack of motivation of the learners towards online/e-learning is a big obstacle in teaching learning process.
- **Lack of Technical Support-** Teachers may face some technical problems while conducting online classes, for this assistance is required. If proper technical support is not provided, it may affect the effective teaching learning process.

**Measures to Overcome Challenges in ICT Integration:** Teachers and administrators can take practical steps towards integration of digital resources.

- Learn basic Digital Skills such as data entry, word processing, social media, and use of different applications which can apply in e-learning.
- Integration of digital tools which are already available. With this, some innovative ways can be developed for effective learning.
- Use of Open Educational Resources (OERs), teachers and learners can access OERs as these are learning resources available in the public domain.

## **Conclusion**

The significant role of Information and Communication Technologies in education of school has been highlighted in the National Curriculum Framework 2005. Integrating of Information and Communication Technologies based teaching learning resources are the requirement for the effective teaching learning process. Digital content should be made available in different regional languages so that teachers and learners are benefitted by use of these learning materials. Teachers' training for effective use of digital resources is also

important. Accessibility to the digital resources in the schools and higher educational institutions should be prioritized. National Education Policy, 2020 mentioned that the National Educational Technology Forum will be created for providing a platform for the free exchange of ideas using technology effective planning, learning, administration, and so on, both for schools and higher education. The National Educational Technology Forum will have an important function to build in the educational technology, the intellectual and institutional capacities and will provide new directions for research and innovation.

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