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A Holistic Review on Modern Learning Management System in Colleges Utilizing Digital and Traditional Tools

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Abstract

A contemporary Learning Management System (LMS) that integrates digital and conventional resources has become crucial for improving academic delivery in institutions in the quickly changing educational landscape. A contemporary learning management system functions as a cohesive platform that combines traditional classroom methods like in-person instruction and practical lab work with e-learning technologies like online lectures, virtual laboratories, and digital evaluations. While preserving the benefits of traditional pedagogy, this hybrid model provides enhanced flexibility, individualized learning experiences, and better access to educational resources. By using such systems, the teaching-learning process is improved overall, collaboration is encouraged, and real-time student monitoring is made possible. But there are drawbacks as well, such as the requirement for faculty training and gaps in digital accessibility. This essay highlights the necessity for an inclusive and well-rounded approach to education by examining the structure, resources, advantages, and difficulties of contemporary LMS integration in higher education. This research paper enlightened the benefits and optimistic approach of the combined learning tools in education system.

Key words: Education system, digital tools, traditional learning system, collaboration teaching methods

Introduction

The development of digital technologies and evolving student needs are causing a radical change in the higher education scene. Even while it still has merit, traditional classroom instruction is unable to satisfy the demands of contemporary education, particularly in a society where technology is pervasive. The World Wide Web's growth since its inception in the 1990s has contributed to the increasing use of information and communication technologies in recent decades, which has given institutions a great chance to increase their visibility and streamline the administration of their administrative procedures [1]. All facets of daily life have seen a change due to the widespread use of gadgets like computers, laptops, and cell phones. This has made it possible to create and execute digital systems that help businesses by streamlining operations and cutting down on burden [2].

Supporting the latest innovations and motivating users to work and learn remotely are crucial during the globalization of all aspects of life [3]. Due in large part to the supply and demand for online teaching and learning, traditional physical classroom settings are becoming less popular in comparison to the growing enrolment in online education [4]. Both digital technologies (such as e-learning modules, online tests, digital content libraries, and virtual labs) and conventional techniques (such as in-person evaluations, face-to-face instruction, and chalk-and-board education) are integrated into a modern learning management system (LMS) in institutions. By combining these resources, a hybrid or blended learning environment can be created that is more flexible, interesting, and successful than either approach alone.

The operational efficiency of businesses is significantly impacted by digital systems, which are defined as those housed on a server on the Internet or on a local network (intranet) [5].
The internal operations of educational institutions are also greatly enhanced by web services, which help with anything from grade recording and attendance management to the sharing of materials like books, videos, and homework, among other things. The significance of digital tools for efficiency and ongoing educational improvement is shown by the relationship between technology and educational processes [6,7].

In all these contexts the researcher has described the aspects of modern learning management system and traditional learning systema to highlight the individual advantages and key roles.

1. Research Gap and Knowledge

It is crucial to emphasize that the owners or developers of technology, and particularly software, control access to these resources [8,9]. Applications created under the Open- Source premise support distribution and participation systems that reflect the way knowledge is thought in the digital age. In this context, "knowledge" refers to both the shared understanding between developers and users regarding the development and dissemination of technology as well as the accessibility and collaborative mindset that is intrinsic to open-source software. Even though open-source software promotes accessibility and collaboration, it's crucial to acknowledge that proprietary software still controls a huge portion of the modern technological world. The necessity to investigate hybrid solutions that promote the merging of both perspectives is highlighted by this conflict between idealistic ideals of accessibility and current commercial actions.

With educational institutions rapidly undergoing digital change, there has been an increase in scholarly interest in the integration of Learning Management Systems (LMS) in higher education. A wide range of aspects of LMS deployment have been studied by academics and professionals, from the pedagogical advantages to the technological difficulties and student perspectives. Learning management systems were first created to oversee academic records, but they have since developed into platforms that facilitate e-learning, course delivery, and student participation, according to [10]. [11] emphasized that by facilitating blended learning environments that include online and offline teaching techniques, contemporary LMSs are now essential in changing teaching practices.

According to the studied literature as a whole, contemporary LMSs have the potential to revolutionize college teaching methods when properly combined with both digital and conventional resources. Traditional approaches provide depth and individual interaction, while modern technologies offer scalability and flexibility. Infrastructure, stakeholder training, institutional preparedness, and ongoing feedback are all necessary for a successful LMS deployment.

2. Research Approach

Often referred to as blended learning or hybrid learning, the blending of digital and conventional learning approaches necessitates a methodical and staged approach. The methods and procedures used to successfully integrate these two learning paradigms inside the college-level educational system are described in the approach that follows. Selecting the appropriate technology platforms and making sure that the infrastructure is strong enough to enable blended learning are crucial to the success of combining digital and conventional teaching methods. In order to enable a hybrid educational paradigm, this phase focuses on assessing, choosing, and implementing the necessary digital resources in addition to modernizing the physical infrastructure. Following are some key points to note in proposed methodology in education system.

- **Selection of tool for LMS:** Managing course material, tests, student interactions, and performance analytics all depend on selecting the appropriate learning management system (LMS). Tools should be user friendly, flexible for faculty and students, compatible for video meetings & online conference, standard data protection and security and finally it can integrate as many as people on single platform. Some popular LMS tools are; google classroom, Moodle, canvas, MS Team, blackboard.
- **Network structure:** Wi-Fi access in classrooms, libraries, residence halls, and labs is necessary, as is high-speed internet throughout the campus. Staff and students who are learning off campus can use a VPN or remote access.
- **Support & maintenance:** Another essential component of a professional IT support team for LMS setup and upkeep is technical assistance and maintenance. systems for teacher and student help desks. planned audits, updates, and training to ensure seamless functioning.
- **Curriculum design:** Redesigning the curriculum to combine in-person lectures with digital resources like pre-recorded video lectures, e-books and digital handouts, and simulation laboratories is the focus of curriculum design and content development.
- **Faculty Training cell:** Plan frequent training sessions and practical exercises to teach educators how to use LMS tools, make videos, and digitize content. Offer instructional resources for creating hybrid lesson plans. Promote online learning groups and peer mentoring.

A successful hybrid education strategy is built on a foundation of rigorous infrastructure planning and LMS platform selection. Colleges may create a learning environment that is dynamic, scalable, and robust by guaranteeing smooth connectivity between digital and

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traditional instruments. A contemporary Learning Management System (LMS) that integrates digital and conventional resources is anticipated to yield a variety of academic, operational, and developmental benefits for teachers and students. These results are in line with the objectives of more effective instruction, increased student involvement, and improved learning outcomes in a technologically advanced, adaptable, and inclusive setting.

3. Tools & Technique Utilization

Researcher has developed a set of technology tools and strategies that can improve teacher and student performance in order to successfully combine digital and traditional learning methods within a college education framework. These approaches support the hybrid learning model's development, implementation, assessment, and improvement.

The first step was recognizing the issue, which was that the educational institution's academic management was done via the WhatsApp app. Nevertheless, it has important drawbacks, including a time limit, network accessibility, and a lack of information on grouping creation. Since the goal was to enhance and maximize a customized learning environment, the institute created advanced techniques. A variety of systems were assessed based on factors like usability, flexibility, and accessibility in order to choose the best LMS. In order to assess the efficacy and efficiency of LMS integration, these technologies are utilized to gather numerical data and conduct statistical analysis. Step-wise procedure is discussed as under that shows the utilization of technology & tools that selected for leaning management system implementation.

As show in figure, first step is to select the proper technology to deliver the educational lectures by combining traditional classroom methods and delivering it on-line. This is suitable for distance learning methods, digital learning methods. Second step is to test the technique that selected for LMS. This requires tools such as classroom, boards, network connection, computers, web-camera, mike etc. Third step is to evaluate the platform timely and that can be known from adding new features, feedback assessment and upgrading the network.

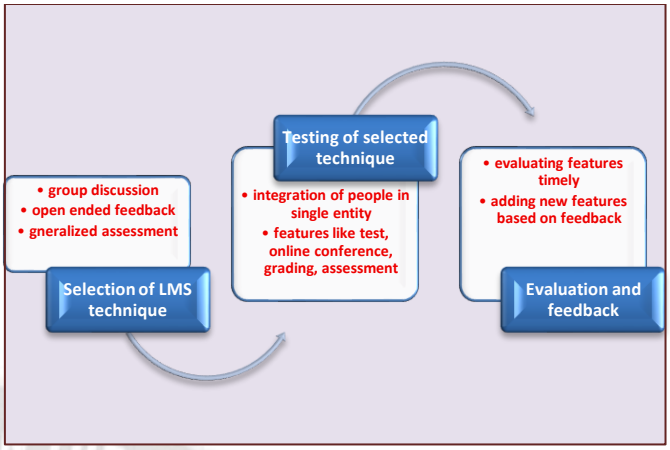

Fig.1 Block diagram of tools & technique implementation for LMS

1. **Selection of LMS technique:** to select the technique in education system, a general group discussion, feedback or assessment should be conducted among faculties, authorities and technical persons. A common discussion can identify the basic necessity & further need of digital classrooms and tools that should be employed in institute. People can give their feedback and opinion freely by generalizing assessment is necessary in this process. Several popular LMS techniques are; google classroom, blackboard and Moodle. Any technique can be selected for institute.

2. **Testing of selected technique:** to utilize the technique, large no. of people/students/faculties/authority need to be integrated on common platform that represents a portal to all. To use the portal, online testing, conference/meeting access, video lecture, grading & assessment are the features to be implemented for hybrid learning system. Tools that used for all activity on portal are; mike, board, pen/digital pens, web-cam, computers, internet source are required to make the LMS deliverable.

3. **Evaluation & feedback:** for this portal, time to time evaluation is necessary to perform as to make sure the smooth conduction of it. All the features are working properly or not; this can be identified by feedback taking and adding new features on portals.

Through the use of a diverse range of methodological tools and approaches, from user-cantered qualitative insights to data-driven analytics, institutions may guarantee the efficient planning, implementation, and assessment of contemporary LMS integration. These strategies encourage a sustainable blended learning environment at institutions and support ongoing

progress.

4. Comparison of Modern Digital Learning Tools and Traditional Learning Tools

Adopting a new learning tool can be difficult, but both seek to improve learning, impart knowledge, and help students grow as individuals. For both approaches to be effective, instructors must provide support, direction, and feedback. Both LMSs have a syllabus and a format that must be adhered to. However, both methods have systems for evaluation, feedback, and efficient communication.

Some difference between modern digital LMS and traditional LMS is mentioned as below.

Particular	Modern Digital Learning Tools	Traditional Learning Tools
Education delivery mode	Online or hybrid (e.g., LMS, video lectures, virtual labs)	In-person, classroom-based, physical materials
Accessibility	24/7 access via internet, computers & mobiles	Limited to class times and physical presence
Flexibility	Any time schedule free from location	Fixed time and place
Tools Used	LMS (Moodle, Canvas), simulations, e-books, mobile apps	Chalkboard, printed books, projectors, hand-written notes
Content Format	Videos, animations & PPT	Textbooks, teacher lectures, notes
Feedback Mechanism	Instant feedback via automated tools	Manual feedback from teachers
Cost and Scalability	Economical at scale, lower cost per learner after setup	Costly to scale (printing, infrastructure, classroom space)
Inclusivity	Adaptable for learners with disabilities (text-to-speech, captions)	Limited accessibility without specific aids
Technological Dependency	Requires internet, electricity, and devices	Minimal tech dependency
Assessment Methods	Online quizzes, timed tests, plagiarism checkers	Paper-based tests, oral exams

Table:1 Difference between modern digital LMS and traditional LMS

Both traditional and digital learning resources offer unique benefits and play complementary roles in the classroom. Conventional instruments provide hands-on experience, emotional connection, and direct human involvement while digital learning tool has flexibility, customization, real-time data tracking, and worldwide accessibility.

The challenge of implementing the optimal learning solution is difficult still. While there are many benefits to combining digital and conventional teaching methods, there are also a number of issues that institutions must resolve to guarantee successful adoption and long-term viability. These difficulties may be related to technology, education, infrastructure, or people. Teachers used to more conventional approaches could be hesitant or delayed to embrace digital platforms. Additionally, an over-reliance on digital tools without sufficient guidance might make students feel overwhelmed or uninterested. ignorance of copyright regulations, cybersecurity, and responsible digital content use.

4. Conclusion

The best educational system combines the two strategies, utilizing digital innovation while maintaining the importance of conventional teaching methods. It is anticipated that the adoption of a cutting-edge learning management system (LMS) that combines digital and conventional methods will transform higher education by making it more efficient, personalized, engaging, and future-ready. These results prepare institutions to meet the demands of educators and learners in the twenty-first century by aligning with national and

international frameworks for educational quality. These issues need to be proactively recognized, resolved, and tracked in order to guarantee the success of a contemporary LMS that combines digital and conventional resources. In addition to appropriate training, infrastructure investment, policy formulation, and student support networks, institutions require a strategic, inclusive, and adaptable strategy.

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